

### 3.13 Noise

This section presents the environmental setting and impact analysis for noise and vibration for the Proposed Project. This section provides information regarding noise and vibration concepts, existing noise levels, applicable regulations, environmental impacts, and mitigation measures to reduce or avoid significant effects.

#### 3.13.1 Noise Concepts

*Noise* is generally defined as undesirable sound that is a byproduct of human activities. Sound becomes undesirable when it interferes with normal activities including sleep, speech, recreation, and tasks requiring concentration or coordination or when it causes physical harm or has adverse effects on the health of the environment.

#### Metrics of Noise

*Sound pressure level* (SPL), measured in decibels (dB), is used to quantify the amplitude of a sound pressure wave as a ratio of sound pressure to a reference pressure, which is the lowest sound pressure that a human can hear. Because sounds within the range of human hearing can vary in intensity by over one million times, a logarithmic scale is used to express this wide range. Additionally, because the human ear is not equally sensitive sounds on the spectrum of audible frequency, or number of times per second that a sound pressure wave repeats, human response is expressed in A-weighted decibels (dBA), a scale of measurement that quantifies the sensitivity of normal human hearing to sounds of along a scale of audible frequency.

The A-weighted decibel scale (dBA) is utilized in the criteria for most noise evaluations. Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are *continuous equivalent sound level*  $L_{eq}$ , a single value for equivalent to the same total energy as the total fluctuating noise over the measurement period, also known as time-average sound level (LAT); A-weighted equivalent continuous sound level  $LA_{eq}$ ; day–night 24-hour average sound level ( $L_{dn}$ )<sup>1</sup>, which is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied for nighttime, defined as between 10:00 p.m. and 7:00 a.m., to account for sensitivity to noise during the nighttime; and *community noise equivalent level* (CNEL) calculated with the addition of a 5-decibel penalty in the evening, defined as 7:00 to 10:00 p.m., and a 10-decibel penalty for nighttime, defined as between 10:00 p.m. and 7:00 a.m. All references to decibels (dB) in this analysis will be A-

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1  $L_{dn}$  is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied for nighttime, defined as between 10:00 p.m. and 7:00 a.m.

### 3.13 NOISE

weighted unless noted otherwise. Table 3.13-1, lists example decibel levels for common sound sources.

On the dBA scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. Except in carefully controlled laboratory experiments, a change of only 1 dBA in sound level cannot be perceived. Outside of the laboratory, a 3 dBA change is considered a perceptible difference while a 5 dBA change is readily noticeable. A 10 dBA increase in the level of a continuous sound represents a perceived doubling of loudness (Caltrans 2013).

#### Noise Attenuation

Stationary sources, or *point sources*, of noise, including construction equipment, attenuate (i.e., lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots, still bodies of water) and therefore have less attenuation (6 dB per doubling). For example, when the attenuation is 6 dBA per doubling, 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. A street or roadway with moving vehicles, known as a *line source*, would typically attenuate at a lower rate, approximately 3 to 4.5 dB for each doubling of distance from the source, with the rate also depending on ground absorption (Caltrans 1998). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone. Noise from large construction sites have characteristics of both point and line sources, so attenuation would likely range between 4.5 and 7.5 dB per doubling of distance.

**Table 3.13-1 Typical Noise Levels in the Environment**

Noise level (dBA)	Common outdoor examples	Common indoor examples
Over 110		Rock band
110–100	Jet flyover at 1,000 feet	
100–90	Gas lawnmower at 3 feet	
90–80	Diesel truck at 50 feet at 50 mph	Food blender at 3 feet or a Garbage disposal at 3 feet
80–70	Noisy urban area, daytime, or a gas lawnmower at 100 feet	Vacuum cleaner at 10 feet
70–60	Commercial area or Heavy traffic at 300 feet	Normal speech at 3 feet
60–50	Quiet urban daytime	Large business office or Dishwasher in next room
40–30	Quiet urban nighttime or quiet suburban nighttime	Theater, large conference room (background), or library
30–20	Quiet rural nighttime	Bedroom at night, concert hall (background)

### 3.13 NOISE

Noise level (dBA)	Common outdoor examples	Common indoor examples
Below 20		Broadcast/recording studio (background)

*Source: (Caltrans 2013)*

#### 3.13.2 Groundborne Vibration Concepts

*Vibration* is the physical manifestation of energy carried through the earth and structures. *Groundborne* vibration, consisting of rapidly fluctuating motions or waves, has the potential to disturb people perceiving it and to damage buildings. Low-level vibrations may cause secondary vibrations in the form of slight rattling of windows, doors, stacked dishes, and the like, a potentially irritating disturbance that, while posing little risk of actual structural damage, can be cause for vibration complaints.

Construction activities can produce varying degrees of groundborne vibration, depending on the equipment and methods employed. Groundborne vibrations from construction activities very rarely reach levels high enough to cause damage to structures; however, special consideration must be given when fragile historical buildings are in near proximity to a construction site.

#### Groundborne Vibration Metrics

The most common measure used to quantify construction vibration amplitude is the *peak particle velocity* (PPV), defined as the maximum speed of ground particle movement, expressed in the U.S. in inches per second (in./sec).

#### 3.13.3 Environmental Setting

The environmental setting for noise is based on a review of information provided by SCE and data from various other sources, including the following:

- United States (U.S.) Environmental Protection Agency (EPA)
- California Department of Transportation (Caltrans)
- Plans, policies, and ordinances adopted by local jurisdictions

#### Existing Noise Conditions

The Proposed Project site is located in unincorporated Kern County, unincorporated Los Angeles County, the city of Arvin, and the city of Bakersfield. Land uses near the Proposed Project site area are primarily undeveloped open space, rural agricultural areas, and scattered rural residential uses (as shown in Figure 3.11-2 in Section 3.11 Land Use and Planning). An ambient noise survey was not conducted for baseline conditions in the vicinity of the Proposed Project site. Instead, the existing noise conditions for the vicinity of the Proposed Project site were determined by applying Governor's Office of Planning and Research (OPR) Noise Element Guidelines (OPR 2017). This approach was used because ambient noise within a 1,000-foot buffer around the Proposed Project site consist primarily of community noise, roadway and highway noise, and the operation of agricultural equipment, and there are no stationary (i.e., point) noise sources in the area. No airports are located within 2 miles of the Proposed Project

### 3.13 NOISE

site. While there may be some aircraft noise within the vicinity of the Proposed Project site due to agricultural uses in the area, air traffic is not a predominant routine source of noise in the area.

Table 3.13-2 lists the typical ambient land use noise levels in the vicinity of the Proposed Project site.

Much of the Proposed Project alignment, including Segment 1, 2, 4, 5, and the northern portion of Segment 3, traverses unincorporated Kern County, which is largely comprised of open space or is in agricultural production. Open space is generally quiet with low ambient noise levels. Source of noise in agricultural areas would be from highway or local road traffic and mechanical agricultural equipment. The very small portion of Segment 1 that traverses jurisdictions of the City of Arvin and City of Bakersfield comprises agricultural and rural residential land uses. The major sources of community noise within the City of Bakersfield include traffic on state highways and major local streets, railroad operations, airport operations, and local industrial activities (City of Bakersfield 2002). Of these potential sources, only one source—highway-related noise from State Route 178—is present in the vicinity of the Proposed Project site. In the City of Arvin, major sources of noise include transportation sources on rural roads and primary roads (City of Arvin 2012). The Arvin Branch Railroad Line in the eastern portion of the City of Arvin can produce intermittent sources of noise. The small portion of the Proposed Project alignment located in unincorporated Los Angeles County largely comprises of open space, with the primary source of ambient noise being vehicle traffic on the two-lane Gorman Post Road and Highway 5 that is equivalent to commercial land use, ranging from 50 to 78 dB Ldn.

No airports are located within 2 miles of the Proposed Project site. While there may be some aircraft noise within the vicinity of the Proposed Project site due to agricultural uses in the area, air traffic is not a predominant routine source of noise in the area.

**Table 3.13-2 Existing Typical Land Use Noise Levels in Proposed Project Vicinity**

Land use category	Typical land use noise level (dB, Ldn) <sup>1</sup>	Major sources of noise in land use type
Residential (rural)	36–42 <sup>2</sup>	The noise environment outside of residences can be highly variable depending on how close a residential use is to nearby uses that generate high noise levels. In residential areas of the United States, major contributions to outdoor noise come from transportation, industrial, construction, human and animal noises (EPA 1978). Rural populations experience average outdoor sound levels generally lower than 50 dB, L <sub>dn</sub> (EPA 1978).

### 3.13 NOISE

Land use category	Typical land use noise level (dB, Ldn) <sup>1</sup>	Major sources of noise in land use type
Residential (urban)	56–62 <sup>2</sup>	The noise environment outside of residences can be highly variable depending on how close a residential use is to nearby uses that generate high noise levels. In residential areas of the United States, major contributions to outdoor noise come from transportation, industrial, construction, human and animal noises (EPA 1978). Nearly half of all urban populations live in areas exposed to traffic sounds that range between 55 and 60 dB, Ldn (EPA 1978). Noise measurements taken in urbanized areas (i.e., residential neighborhoods) of Bakersfield indicate community noise levels of 44 to 64 dB, CNEL (City of Bakersfield 2002)
Agricultural crop land (rural)	41–47 <sup>2,3</sup>	The noise environment at agricultural land uses can be highly variable depending on how close the agricultural land use is to nearby uses that generate high noise levels. If operational, agricultural land uses can widely vary depending on the type of enterprise or business. Primary noise sources would be from heavy machinery, equipment, and livestock.
Commercial land	50–78 <sup>4</sup>	The noise environment at commercial land uses can be highly variable depending on how close the commercial land use is to nearby uses that generate high noise levels. Noise levels from commercial uses can widely vary depending on the type of enterprise or business. Major noise sources from commercial operations would include mechanical equipment, machinery, and traffic.
School	50–70 <sup>5</sup>	The noise environment outside of schools can be highly variable depending on how close a school use is to nearby uses that generate high noise levels. Due to its close proximity, traffic noise levels from Interstate 5 could reach up to 75 dB at the nearest campus buildings at El Tejon School on Lebec Road (Caltrans 2021a; 2021b; FHWA 1978).
Industrial land	50–80 <sup>6</sup>	Only a small area of Segment 2 comprises industrial land use. Noise levels from industrial uses can widely vary depending on the type of enterprise or business. Major noise sources from industrial operations would include noise from mechanical equipment, machinery, and traffic.
Open space	36–42 <sup>7</sup>	The noise environment at open space land uses can be highly variable depending on how close the open spaces use is to nearby uses that generate high noise levels. Major noise sources in open space areas would be expected to come from transportation, construction, and human and animal noises.

**Notes:**

1. The Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10 dB penalty applied to nighttime, defined as between 10:00 p.m. and 7:00 a.m. The use of Ldn in this column is

### 3.13 NOISE

to describe the cumulative noise exposure during an average annual day/night period. Although there may be instances where noise levels may reach high instantaneous, maximum levels, the Ldn does not represent the sound level perceived at any given time but, rather, the overall sound exposure over the course of a typical day.

2. Outdoor day-night average sound levels are from the EPA's Protective Noise Levels (EPA 1978). A conservative assumption of +/- 3 dB Ldn was used to establish the range for this land use based on the outdoor day-night average sound level listed in that document.
3. This range of day-night outdoor noise levels assumes no operations occurring on rural agricultural lands at the time. The OPR's General Plan Noise Element Compatibility Guidelines recommends a maximum community noise exposure of 80 dB Ldn as a "conditionally acceptable" outdoor noise level for agricultural land uses (Governor's Office of Planning and Research [OPR] 2017).
4. The OPR's General Plan Noise Element Compatibility Guidelines recommends a community noise exposure of up to 78 dB Ldn as a "conditionally acceptable" outdoor noise level for commercial land uses (OPR 2017).
5. The OPR's General Plan Noise Element Compatibility Guidelines recommends a community noise exposure of up to 70 dB Ldn as a "Conditionally Acceptable" outdoor noise level for schools (OPR 2017).
6. The OPR's General Plan Noise Element Compatibility Guidelines recommends a community noise exposure of up to 80 dB Ldn as a "conditionally acceptable" outdoor noise level for industrial land uses (OPR 2017).
7. Since the majority of open space land use within the vicinity of the Proposed Project site would be in rural areas, this range of day-night outdoor noise levels assumes the same outdoor noise levels for rural residential areas

*Source: (U.S. EPA, 1978) (OPR, 2017)*

#### **Noise-sensitive Receptors in the Vicinity of the Proposed Project Site**

*Noise sensitive receptor* varies slightly in definition among jurisdictions. For the purposes of this analysis, noise sensitive receptors include the following:

- Residences (when occupied)
- Schools (when in session)
- Hospitals, convalescent homes, and retirement homes
- Houses of worship (when occupied)
- Parks and recreational facilities/community centers

The few noise sensitive receptors located in the vicinity of the Proposed Project site in Segments 1, 2, and 3 comprise scattered rural residences and an elementary school, located in Segment 2. In the eastern portion of Segment 4 and the western portion of Segment 5, suburbanized residential developments are found in proximity to the Proposed Project site, with residences clustered along the Proposed Project alignment. In the eastern portion of Segment 4 and western portion of Segment 5, numerous residences are directly adjacent the Proposed Project work areas. There are no hospitals, convalescent homes, retirement homes, houses of worship, or recreational facilities/community centers within 1,000 feet from the Proposed Project. Table 3.13-3, identifies the type and distance of the nearest sensitive receptors within 1,000 feet of the Proposed Project alignment, including staging work areas. Figure 3.13-1 through Figure 3.13-5 show where these nearest sensitive receptors are located to the Proposed Project by segment.

### 3.13 NOISE

**Table 3.13-3 Noise-sensitive Receptors within 1,000 feet of the Proposed Project**

Receptor type	Distance to nearest work area (feet) <sup>2</sup>	Nearest project feature
<b>Segment 1</b>		
Residence <sup>1</sup>	65	Guard structure site for installation of a new LWS
<b>Segment 2</b>		
Residence <sup>1</sup>	105	Guard structure site for transmission line pull
El Tejon School	200	Removal of a lattice steel tower and installation of a new LWS pole
<b>Segment 3</b>		
Residence <sup>1</sup>	123	Construction work at the Gorman substation
<b>Segment 4</b>		
Residence <sup>1</sup>	20	Guard structure site for a new LWS monopole
<b>Segment 5</b>		
Residence <sup>1</sup>	20	Guard structure site for distribution line

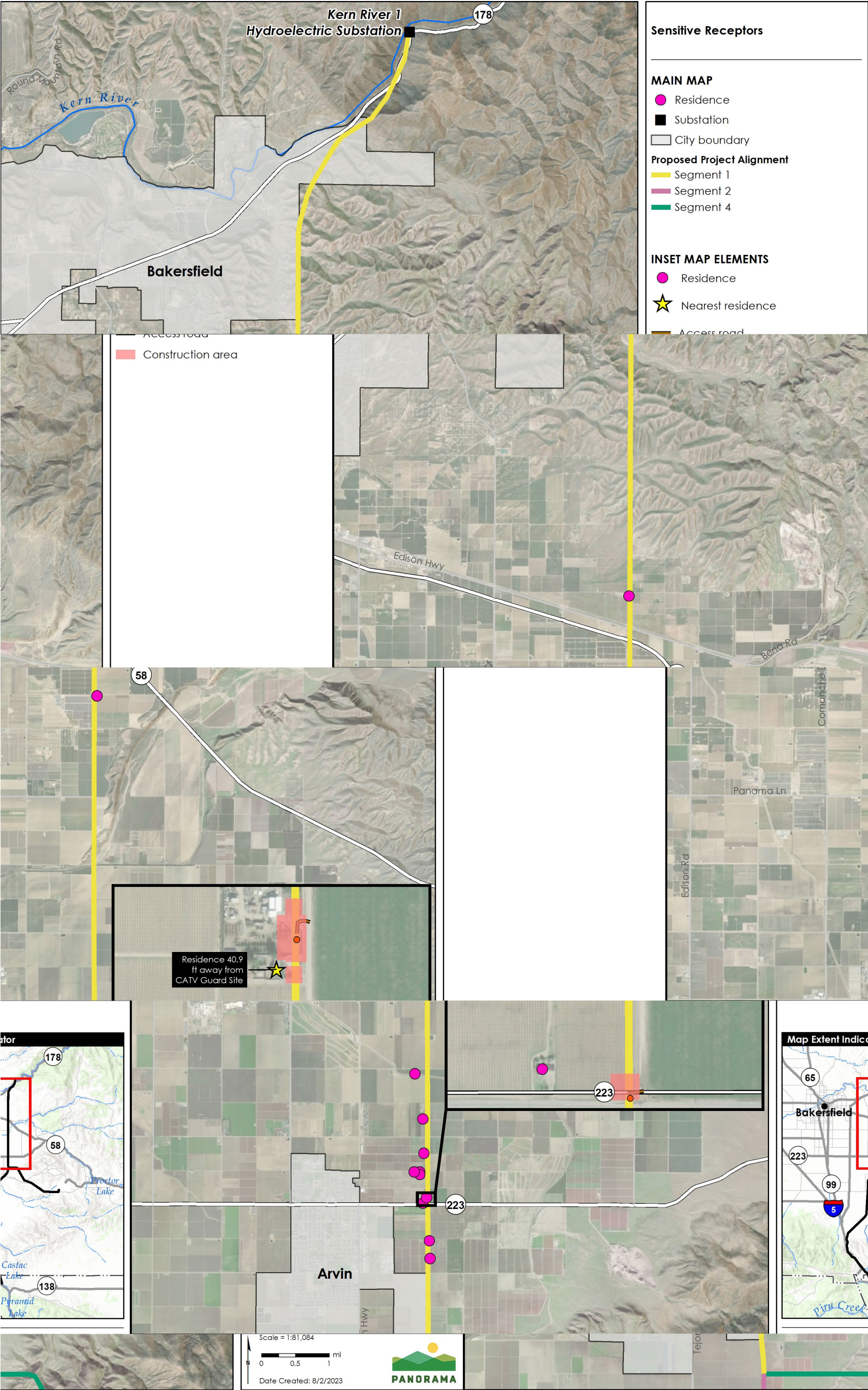
Notes:

1. Numerous residences occur within 1,000 feet of Proposed Project work areas. This table lists the distance to the residential receptor closest to work areas within each segment and staging area.
2. Distance was rounded up to the nearest foot.

*Source: (City of Arvin 2018; County of Los Angeles 2016; ESRI® and USGS 2010; Kern County GIS 2014; 2018; Kern County Planning and Natural Resources 2019; Los Angeles County Department of Regional Planning 2019; Oak Ridge National Laboratory [ORNL] and National Geospatial-Intelligence Agency [NGA] Homeland Security Infrastructure Program [HSIP] Team 2020)*



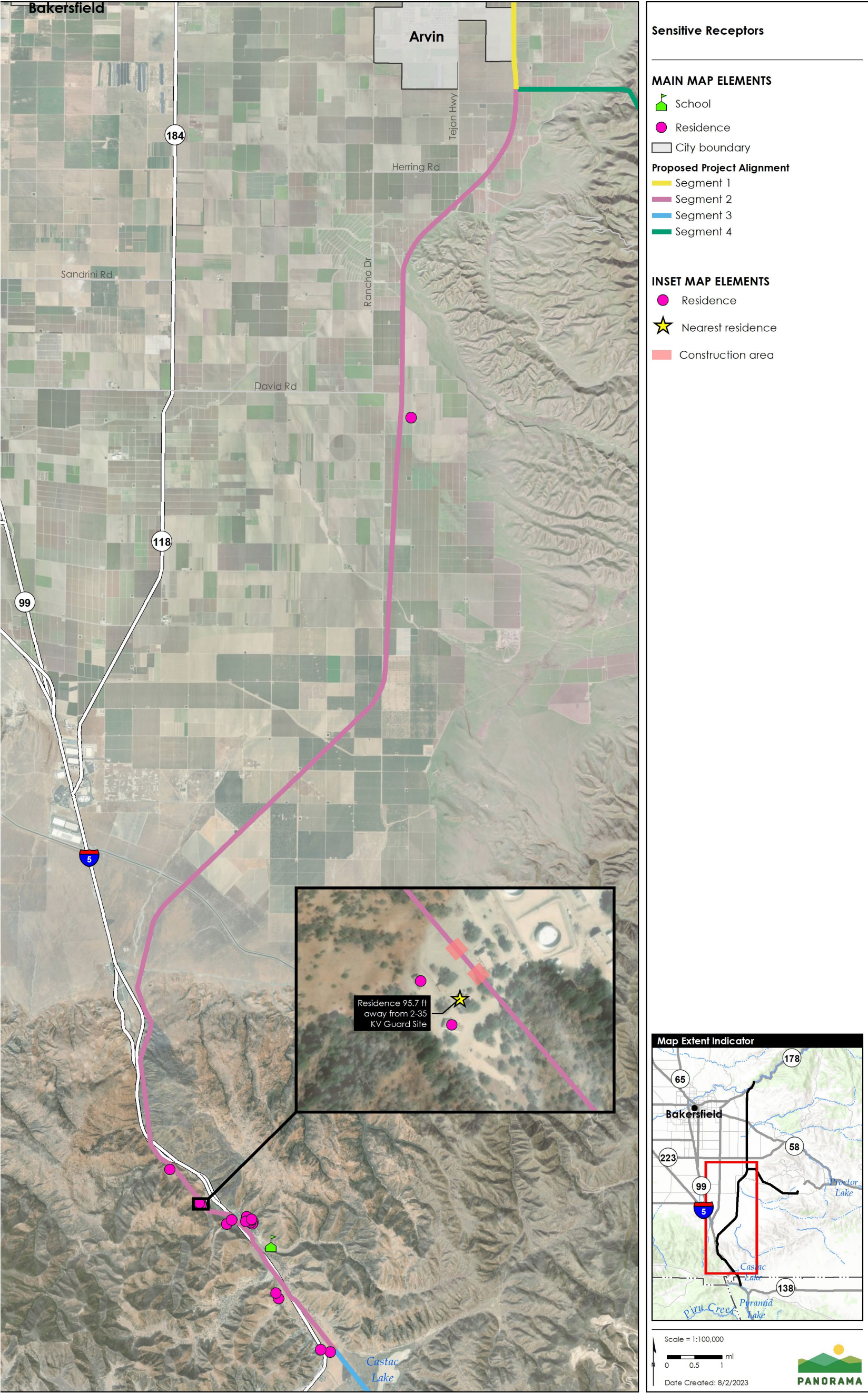
Figure 3.13-1 Nearest Residential Sensitive Receptor by Proposed Project Segment (Map 1 of 5)



Source: (City of Arvin 2018; County of Los Angeles 2016; ESRI® and USGS 2010; Kern County GIS 2014; 2018; Kern County Planning and Natural Resources 2019; Los Angeles County Department of Regional Planning 2019; Oak Ridge National Laboratory [ORNL] and National Geospatial-Intelligence Agency [NGA] Homeland Security Infrastructure Program [HSIP] Team 2020)



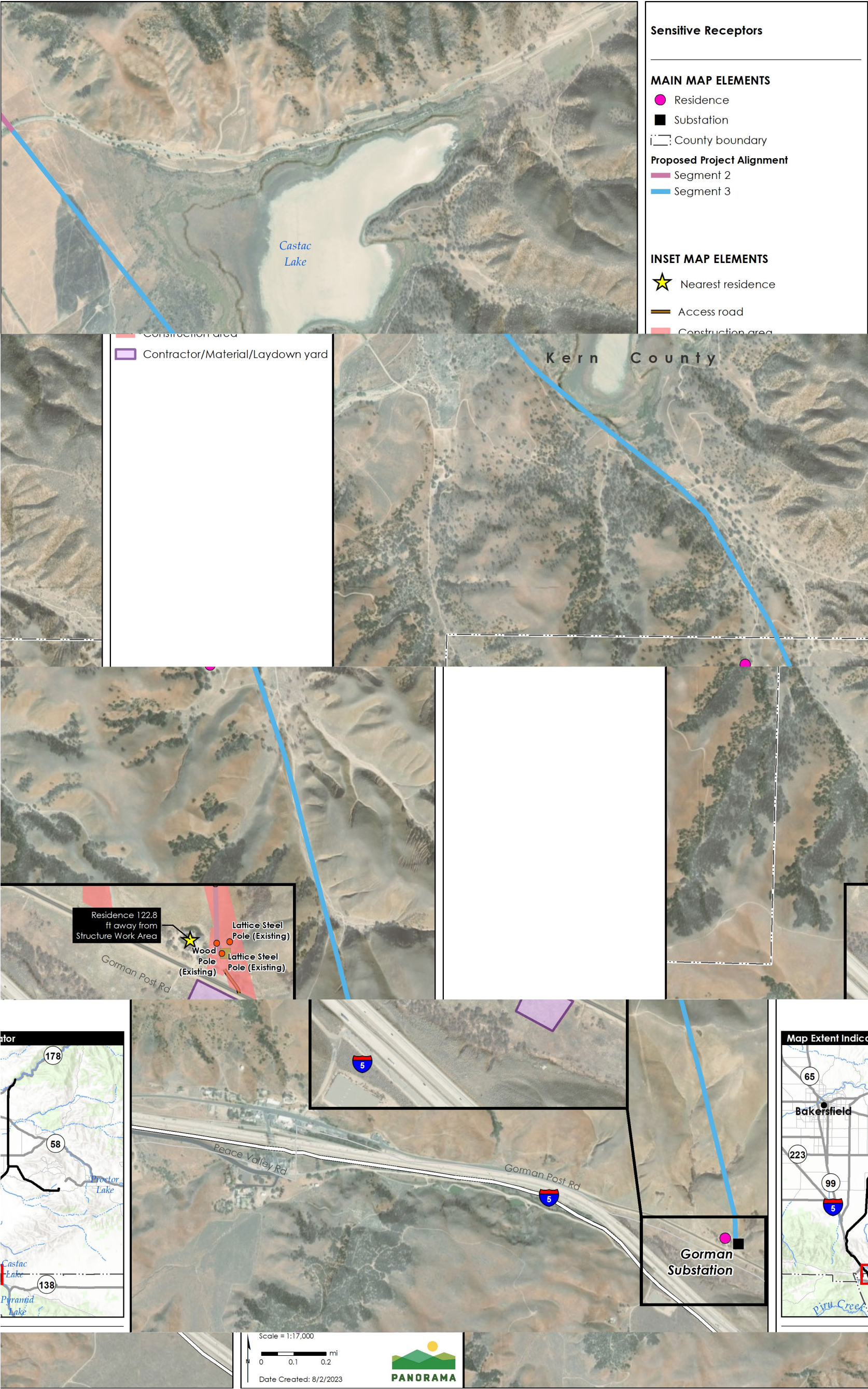
Figure 3.13-2    Nearest Residential Sensitive Receptor by Proposed Project Segment (Map 2 of 5)



Source: (City of Arvin 2018; County of Los Angeles 2016; ESRI® and USGS 2010; Kern County GIS 2014; 2018; Kern County Planning and Natural Resources 2019; Los Angeles County Department of Regional Planning 2019; Oak Ridge National Laboratory [ORNL] and National Geospatial-Intelligence Agency [NGA] Homeland Security Infrastructure Program [HSIP] Team 2020)



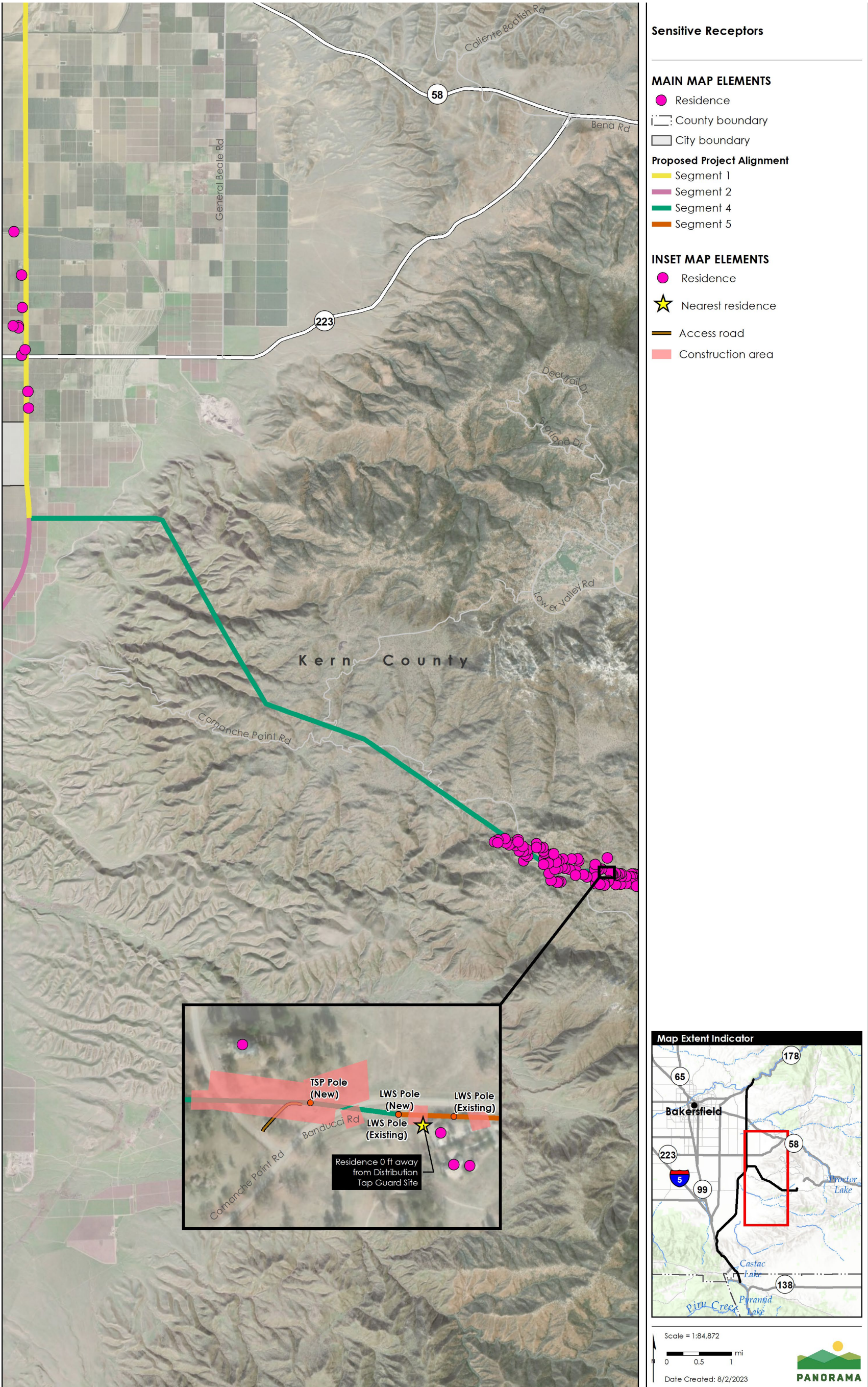
Figure 3.13-3 Nearest Residential Sensitive Receptor by Proposed Project Segment (Map 3 of 5)



Source: (City of Arvin 2018; County of Los Angeles 2016; ESRI® and USGS 2010; Kern County GIS 2014; 2018; Kern County Planning and Natural Resources 2019; Los Angeles County Department of Regional Planning 2019; Oak Ridge National Laboratory [ORNL] and National Geospatial-Intelligence Agency [NGA] Homeland Security Infrastructure Program [HSIP] Team 2020)



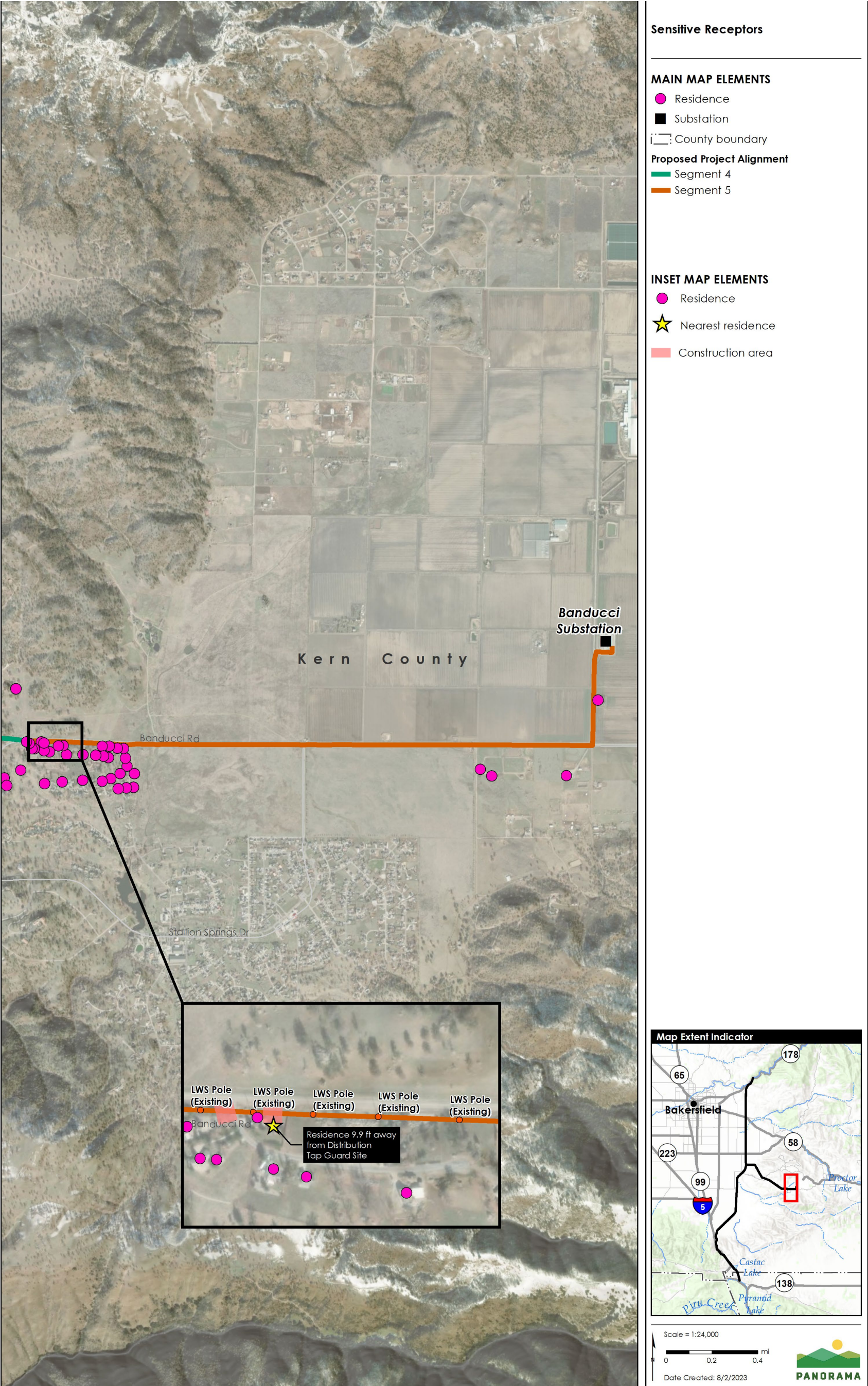
Figure 3.13-4 Nearest Residential Sensitive Receptor by Proposed Project Segment (Map 4 of 5)



Source: (City of Arvin 2018; County of Los Angeles 2016; ESRI® and USGS 2010; Kern County GIS 2014; 2018; Kern County Planning and Natural Resources 2019; Los Angeles County Department of Regional Planning 2019; Oak Ridge National Laboratory [ORNL] and National Geospatial-Intelligence Agency [NGA] Homeland Security Infrastructure Program [HSIP] Team 2020)



Figure 3.13-5    Nearest Residential Sensitive Receptor by Proposed Project Segment (Map 5 of 5)



Source: (City of Arvin, 2018; Oak Ridge National Laboratory (ORNL), National Geospatial-Intelligence Agency (NGA) Homeland Security Infrastructure Program (HSIP) Team, 2022; Kern County Planning and Community Development Department, 2014; Kern County GIS, 2018; County of Los Angeles, 2022; Esri, United States Geological Survey, U.S. Geographic Names Information System, 2022; Kern County Planning and Natural Resources Department, 2022; The County of Los Angeles, 2022)



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## 3.13 NOISE

### 3.13.4 Applicable Laws, Regulations, and Policies

The following section discusses Federal, state, and local regulations that are applicable to the Proposed Project and the Proposed Project's compliance therewith.

#### Federal Laws, Regulations, and Policies

There are no federal noise standards that directly regulate environmental noise resulting from the Proposed Project.

#### U.S. Environmental Protection Agency

Regulating environmental noise is generally the responsibility of local government. The U.S. EPA has developed and published criteria for environmental noise levels with a directive to protect public health and welfare with an adequate margin of safety. Recommendations from the EPA's *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (1974), which was developed to be used as an acceptable guideline when no other local, county, or state standard has been established, are listed in Table 3.13-4. The EPA's recommendations are not meant to substitute for agency regulations or standards in cases where a state or locality has developed their own standards (EPA 1974).

**Table 3.13-4 Protective Noise Levels Recommended by U.S. EPA**

Effect	Maximum level	Environment type
Hearing loss	70 dB $L_{eq}(24)$	All environments
Outdoor activity interference and annoyance	55 dB $L_{dn}$	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use
	55 dB $L_{eq}(24)$	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	45 dB $L_{dn}$	Indoor residential areas
	45 dB $L_{eq}(24)$	Other indoor areas with human activities such as schools, etc.

Note:  $L_{eq}(24)$  is the sound energy averaged over a 24-hour period.  $L_{dn}$  is the  $L_{eq}$  with a 10 dB nighttime penalty.

Source: (EPA 1974)

#### Federal Transit Administration

The Federal Transit Administration (FTA) has developed vibration impact thresholds for noise-sensitive buildings, residences, and institutional land uses. These thresholds are 80 vibration velocity (VdB) at residences and buildings where people normally sleep (e.g., nearby residences, daycare facilities) and 83 VdB at institutional buildings (e.g., schools, churches). These thresholds apply to conditions where there are an infrequent number of events per day. Although the FTA standards are intended for federally funded mass-transit projects, the FTA's

### 3.13 NOISE

impact assessment procedures are routinely used to evaluate construction noise and vibration effects from projects proposed by local government and private developers (FTA 2018). .

#### Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act of 1970 governs worker exposure to noise levels. Code of Federal Regulations (CFR) title 29 section 1910.95 limits worker exposure to noise levels of 85 dB or lower over an 8-hour period. Additionally, this regulation establishes a maximum for impulse or impact noise (e.g., blasting noise) of 140 dB peak sound pressure level.

#### State Law, Regulations, and Policies

##### California Department of Transportation

Caltrans provides guidance for analysis of groundborne vibration. The Proposed Project is not subject to Caltrans regulations; however, these guidelines serve as a useful tool to evaluate vibration impacts on structures and residents (Caltrans 2020). Table 3.13-5 lists the thresholds for evaluating the potential for groundborne vibration to damage structures and describes the typical human response when exposed to various intensities of continuous groundborne vibration.

**Table 3.13-5     Groundborne Vibration Impact Thresholds**

Parameter	Maximum PPV (in./sec)	
	Transient sources <sup>1</sup>	Continuous/frequent intermittent sources <sup>2</sup>
<b>Structural damage</b>		
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
<b>Human response</b>		
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

Notes:

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

### 3.13 NOISE

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

*Source: (Caltrans 2020)*

#### **California Noise Exposure Regulations**

The State of California addresses worker exposure to noise levels through the California Noise Exposure Regulations California Code of Regulations (CCR) title 8 section 5095. Adopted by the California Division of Occupational Safety and Health, these regulations limit worker exposure to noise levels of 85 dB or lower over an 8-hour period, which is consistent with federal OSHA standards. The State has not established noise exposure standards for non-workplace environments.

#### **Local Laws, Regulations, and Policies**

The CPUC has sole and exclusive State jurisdiction over the siting and design of the Proposed Project because it authorizes the construction, operation, and maintenance of investor-owned public utility facilities. Pursuant to GO 131-D section XIV.B, “Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC’s jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.” Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the counties’ and cities’ regulations are not applicable as the counties and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local land use laws, regulations, and policies is provided for informational purposes only.

#### **Kern County Code of Ordinances**

Kern County Code of Ordinances title 8 section 8.36.020 (Prohibited sounds) regulates the generation of construction noise in unincorporated Kern County as follows (County of Kern 2007):

It is unlawful for any person to do, or cause to be done, any of the following acts within the unincorporated areas of the county:

H. To create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:

1. The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.
2. Emergency work is exempt from this section.



### 3.13 NOISE

#### **Kern County General Plan, Noise Element**

The purpose of the *Kern County General Plan Noise Element* is to:

- (1) establish reasonable standards for maximum desired noise levels in Kern County,
- and (2) develop an implementation program which could effectively deal with the noise problem (Kern County Planning Department 2009).

Section 3.2 of the *Noise Element* identifies the following as noise sensitive land uses:

- Residential areas
- Schools
- Convalescent and acute care hospitals
- parks and recreational areas
- Churches

The Noise Element of the Kern County General Plan does not include noise standards for construction activities (Kern County Planning Department 2009).

#### **City of Bakersfield Municipal Code**

Bakersfield Municipal Code title 9 chapter 9.22, Noise, section 9.22.020 addresses noise generated during construction as follows (City of Bakersfield 1999):

- Except as provided herein or in subsection B, C or D of this section, it is unlawful for any person, firm or corporation to erect, demolish, alter or repair any building, or to grade or excavate land, streets or highways, other than between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends; provided, however, that city crews and those of the city's contractors performing street work between nine p.m. and six a.m. are exempt here from if the city engineer has directed that work be performed between such hours to alleviate potential traffic congestion.
- Notwithstanding any other provisions of this chapter, if the city manager determines that the public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or the excavating and grading of land, streets or highways between the hours of nine p.m. and six a.m., and if he or she further determines that loss or inconvenience would result to any party in interest by virtue of the requirements provided in subsection A of this section, he or she may grant a permit for such work to be done between the hours of nine p.m. and six a.m., upon application being made at the time the permit for the work is awarded or during the progress of the work. Such permit may be granted for a period not to exceed three days, and may be extended by the city manager for a period not to exceed three days.
- The provisions of this section shall not apply to any work of construction performed one thousand feet or more from the nearest residential dwelling.
- The provisions of this section shall not apply to performance of emergency work as defined in this chapter (Ord. 3924 § 3, 1999).

### 3.13 NOISE

#### **City of Bakersfield General Plan**

The Noise Element of the City of Bakersfield General Plan does not establish noise standards for construction activities. Noise standards established in the Noise Element for new land uses are not relevant as the Proposed Project does not constitute a new land use (City of Bakersfield, 2022).

#### **City of Arvin Code of Ordinances**

The City of Arvin Code of ordinances II title 9, Public Peace, Morals and Welfare, article II defines *nuisances* to include, but not be limited to, “noises that are unreasonably loud, raucous, or jarring to persons within the area of audibility in a residential area” and that occur between 9:00 p.m. and 7:00 a.m. Sunday through Thursday and between 10:00 p.m. and 8:00 a.m. on Friday and Saturdays (City of Arvin 2005b).

City of Arvin Municipal code title 9 article II section 9.08.060, Exemptions, stipulates the following (City of Arvin 2005a):

The following acts or conditions are exempt from having to comply with this chapter:

- a. Any activity to the extent regulation thereof has been preempted by state or federal law.

#### **City of Arvin General Plan**

The City of Arvin General Plan does not establish noise standards for construction activities. Land use compatibility standards established in the City of Arvin General Plan for new land uses are not relevant as the Proposed Project does not constitute a new land use (City of Arvin 2012).

#### **Los Angeles County Code of Ordinances**

The Los Angeles County Code of Ordinances title 12, Environmental Health, chapter 12.08, Noise Control, section 12.08.440 defines prohibitions on the generation of construction noise in unincorporated Los Angeles County (County of Los Angeles 1978a)::

Within Title 12 of the Code of Ordinances, section 12.08.440 describes restrictions on construction noise as follows:

A. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound there from creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited.

B. Noise Restrictions at Affected Structures. The contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in the following schedule:

### 3.13 NOISE

#### 1. At Residential Structures.

- b. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment. (Table 3.13-6)

**Table 3.13-6 Maximum Noise Limitations for Mobile Construction Equipment**

Time	Single-family residential	Multi-family residential	Semiresidential/commercial
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA

- c. Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment. (Table 3.13-7)

**Table 3.13-7 Maximum Noise Limitations for Stationary Construction Equipment**

Time	Single-family residential	Multi-family residential	Semiresidential/commercial
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

#### 2. At Business Structures

- d. Mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

Daily, including Sunday and legal holidays, all hours: maximum of 85dBA.

C. All mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order.

To decrease vibration, the ordinance prohibits “the operation any device that creates vibration that can be felt beyond the property boundary of the source (if on private property) or 150 feet away from the source (if on a public space or public right-of-way). The perception threshold is a motion velocity of 0.01 inches per second over the range of 1 to 100 hertz” (County of Los Angeles 1978b).

#### Los Angeles County General Plan, Noise Element

The Noise Element of the Los Angeles County General Plan does not establish standards for construction activities. However, the Noise element contains the following goals and policies (Los Angeles County Department of Regional Planning 2015):

- Goal N 1: The reduction of excessive noise impacts

### 3.13 NOISE

- Policy N 1.3: Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through Best Available Technologies (BAT).
- Policy N 1.9: Require construction of suitable noise attenuation barriers on noise sensitive uses that would be exposed to exterior noise levels of 65 dBA CNEL and above, when unavoidable impacts are identified.

#### 3.13.5 Applicant Proposed Measures

SCE has proposed measures to reduce environmental impacts. The significance of the impact is first considered prior to application of applicant proposed measures (APMs), and a significance determination is made. The implementation of the APMs is considered as part of the Proposed Project when determining whether impacts would be significant and thus would require mitigation. These APMs would be incorporated as part of any CPUC Project approval, and SCE would be required to adhere to the APMs as well as any identified mitigation measures. The APMs are included in the Mitigation Monitoring and Reporting Program (MMRP) for the Proposed Project, and the implementation of the measures would be monitored and documented in the same manner as mitigation measures. The APMs that are applicable to the noise analysis are listed in Table 3.13-8.

**Table 3.13-8 Applicant Proposed Measures for Noise Impacts**

APM Number	Requirements
NOI-1	<p><b>Noise Disturbance Minimization Procedures.</b> SCE will employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction:</p> <ul style="list-style-type: none"><li>• Construction activities will be confined to daytime, weekday and weekend hours established by the applicable local jurisdiction. In the event construction is required beyond those hours, SCE will notify the appropriate local agency or agencies regarding the description of the work, location, and anticipated construction hours.</li><li>• Construction equipment will use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.</li><li>• Construction traffic and helicopter flight will be routed away from residences and schools, where feasible.</li><li>• Unnecessary construction vehicle use, and idling time will be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off.</li></ul>

#### 3.13.6 Environmental Analysis

##### Approach to Impact Analysis

This impact analysis considers whether implementation of the Proposed Project would result in significant noise and groundborne vibration impacts. The analysis focuses on reasonably foreseeable effects from the construction and operational activities of the Proposed Project as compared with existing conditions. The analysis uses significance criteria based on the CEQA Guidelines (Appendix G). Applicable APMs are identified, and mitigation is defined to avoid or



### 3.13 NOISE

reduce significant noise impacts. Noise and vibration levels associated with construction and operation of the Proposed Project are analyzed for impacts to noise sensitive receptors within 1,000 feet from the Proposed Project, such as residences, educational facilities, places of worship, hospitals, convalescent homes, and recreation areas.

The CPUC is not subject to local land use jurisdiction. The noise standards included in the local noise ordinance were considered for the purpose of evaluating whether the project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Proposed Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. EPA, OPR, and public-school recommendations were used to determine the appropriate noise standards.

#### **Noise Impact Analysis**

Construction noise levels for the Proposed Project were estimated by evaluating the noise generated by the equipment that would be used for the proposed construction activity. The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment, and the prevailing wind direction. Therefore, the analysis estimated noise generated by each proposed work activity to the nearest sensitive receptor types.

Calculated noise levels at the nearest sensitive receptor that exceed noise levels defined by local ordinances are considered a significant impact.

#### **Groundborne Vibration Impact Analysis**

Caltrans guidelines were used to evaluate vibration impacts on residents and structures. For construction, which is short-term, the impact of concern is annoyance of residents and damage to structures. Caltrans sets vibration thresholds for structural damage depending on the fragility of the structure of concern. Under the Caltrans' latest guidelines for continuous vibration sources, a vibration limit of 0.5 in./sec PPV is recommended for buildings that are structurally sound and designed to modern engineering standards and a vibration limit of 0.3 in./sec PPV is set for older residential and historic buildings. All buildings in the Proposed Project area are assumed to be structurally sound, and no historic structures are within 1,000 feet from the Proposed Project site, the 0.5 in./sec PPV criteria would apply for vibration from construction activities.

#### **Summary of Impacts**

Table 3.13-9 and Table 3.13-10 present a summary of the CEQA significance criteria and impacts on noise that would occur during construction, operation, and maintenance of the Proposed Project.

### 3.13 NOISE

**Table 3.13-9 Summary of Proposed Project Impacts to Noise**

Would the proposed project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### Impact Discussion

**a) Would the Proposed Project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

#### Construction

Construction would result in a temporary increase in ambient noise levels in the vicinity of the Proposed Project. Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., excavators, loaders) and other construction equipment (e.g., dozers, compactors, trucks). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment, and the prevailing wind direction.

Noise levels generated by equipment that would be used in construction of the Proposed Project are listed in Table 3.13-10. Construction of the Proposed Project would occur primarily between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday. However, pursuant to APM NOI-1, construction activities will be confined to daytime, weekday and weekend hours established by the applicable local jurisdiction. In the event construction is required beyond those hours, SCE will notify the appropriate local agency or agencies regarding the description of the work, location, and anticipated construction hours. The construction phase of the

### 3.13 NOISE

Proposed Project would occur over a 23-month period. Due to the linear nature of the Proposed Project, construction at any one location would be short-term in nature as the work moves along the Proposed Project alignment. Some construction activities may be performed concurrently; for instance, pull-and-tension/stringing sites may be established at the same time as guard structures are being installed, and the restoration of disturbed areas may occur at the same time as staging area demobilization and restoration is occurring. Furthermore, work could occur in one or more segments simultaneously. Use of the staging areas would occur over the duration of the Proposed Project construction.

**Table 3.13-10 Typical Noise Levels from Construction Equipment**

Construction equipment	Noise level (dB, L <sub>max</sub> at 50 feet)
Air compressor	78
Auger drill rig	84
Auger drill rig truck	79
Backhoe	78
Compactor (ground)	83
Concrete mixer truck	79
Concrete pump truck	81
Crane	81
Dozer	82
Dump truck	76
Excavator	81
Flat bed truck	74
Forklift	77
Front end loader	79
Generator	81
Gradall	83
Helicopter (light-duty)	90
Helicopter (Medium and Heavy-Duty)	97
Grader	85
Pickup truck	75
Pneumatic tools	85
Roller	80
Scraper	84

### 3.13 NOISE

Construction equipment	Noise level (dB, $L_{\max}$ at 50 feet)
Tractor	84
Welder/torch	74

*Source: (USDOT 2006)*

#### **Kern County**

##### ***Residential Receptors***

Kern County has not adopted any decibel level limitations for construction; the noise limitations are for the proximity to residences and daily hours of construction. In Kern County, construction activity noise would exceed the standards established in Kern County Code of Ordinances section 8.36.020 if construction noise is generated within 1,000 feet of an occupied residential dwelling outside the hours of 6:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 9:00 p.m. on weekends. The Proposed Project standard construction schedule includes construction between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday. Saturday construction could occur before 8:00 a.m. within 1,000 feet of an occupied residence in Kern County, which would be a conflict with the Kern County noise ordinance. Numerous occupied residences in Kern County are located within 1,000 feet of construction work areas, and construction activities on Saturday before 8:00 a.m. within 1,000 feet of a residence would conflict with the Kern County noise ordinance standards, which would be a significant impact. SCE has proposed APM NOI-1, which confines construction activities within 1,000 feet of a residence to the hours established in the local noise ordinance. Because SCE would implement APM NOI-1, weekend work within 1,000 feet of a residence would not occur before 8:00 a.m. in Kern County, and the Proposed Project would not cause a substantial increase in temporary ambient noise levels in excess of local standards. The impact from construction noise would be less than significant.

##### ***Schools***

While Kern County sets standards for construction activities in proximity to residential areas, the County does not set specific standards for construction in proximity to schools. Because schools are in session during the day, the construction noise hour limitations set by the Kern County noise ordinance do not address the potential for construction activities to interfere with classroom instruction. The Proposed Project would conduct various construction activities in the vicinity of El Tejon School such as road work, TSP erection, and LWS Pole installation as well as the use of a staging area for the duration of the Proposed Project construction. These activities that would occur between approximately 230 and 440 feet away from a school room would generate noise between approximately 66 and 85 dB,  $L_{eq}$  (see Table 3.13-11). For spoken conversation to be heard and understood in a classroom, background noise levels inside school classrooms should not exceed 45 dBA (EPA 1974b). The OPR's *General Plan Noise Element Guidelines* recommends a community noise exposure of up to 70 dB,  $L_{dn}$  as a "conditionally acceptable" outdoor noise level for schools (OPR 2017), and buildings with windows closed typically provide noise attenuation of approximately 20 to 25 dB (Caltrans 2011).

### 3.13 NOISE

As shown in Table 3.13-11 construction activities in proximity to El Tejon School would generate noise levels of approximately 65 to 80 dB, Leq at the exterior façade of the nearest classroom buildings. Because construction activities would be conducted during the daytime when school is in session (mid-August to early June) and activities would produce noise levels in excess of 70 dB at the exterior of the classroom and 45 dB at the interior, the impact would be potentially significant without mitigation (El Tejon Unified School District 2023). Mitigation Measure NOI-1 requires SCE to coordinate with El Tejon School and time construction activities that would produce noise greater than 70 dB at the nearest classroom to occur when school is not in session. Because construction activities would be coordinated with El Tejon School to occur when school is not in session, and because of the very short duration (a few days) of activities that exceed 70 dB in proximity to the school, the noise levels generated in proximity to the school would not exceed noise standards recommended by the U.S. EPA and OPR for classroom instruction, and the impact would be less than significant with mitigation incorporated.

**Table 3.13-11 Construction Noise Near School and Residences**

Work area	Sensitive receptor	Noise level at 50 feet (dB, Leq)	Distance from work area (feet) <sup>a, b</sup>	Noise level (dB, Leq) <sup>c, d</sup>	Duration of work activity (days)	Exceeds noise standards?
Survey	Residence	80	127	72	1	No
	School		nil	nil	nil	nil
Staging area	Residence	92	260	78	180	Yes
	School		1,060	66	180	No
Road work	Residence	93	290	78	1	Yes
	School		230	80	1	Yes
TSP foundation	Residence	92	127	84	2	Yes
	School		440	73	2	Yes
TSP haul	Residence	90	127	82	¼	Yes
	School		230	77	¼	Yes
TSP assembly	Residence	89	127	81	1	Yes
	School		440	70	1	Yes
TSP erection	Residence	98	127	90	1	Yes
	School		440	79	1	Yes
LWS pole haul	Residence	90	470	71	¼	No
	School		230	77	¼	Yes



### 3.13 NOISE

Work area	Sensitive receptor	Noise level at 50 feet (dB, Leq)	Distance from work area (feet) <sup>a, b</sup>	Noise level (dB, Leq) <sup>c, d</sup>	Duration of work activity (days)	Exceeds noise standards?
LWS pole assembly	Residence	89	470	70	¼	No
	School		225	76	¼	Yes
LWS pole installation	Residence	98	470	79	¼	Yes
	School		225	85	¼	Yes
Existing pole removal	Residence	91	127	83	¼	Yes
	School		225	78	¼	Yes
Existing lattice structure/TSP removal	Residence	99	127	91	2	Yes
	School		440	80	2	Yes
Remove conductor and OHGW	Residence	93	127	85	20	Yes
	School		nil	nil	nil	nil
Conductor and OPGW/OHGW installation	Residence	97	127	89	20	Yes
	School		nil	nil	nil	nil
Guard structure installation	Residence	92	nil	80	½	nil
	School		400	74	½	Yes
Guard Structure removal	Residence	92	nil	80	½	nil
	School		400	74	½	Yes
Restoration	Residence	91	127	83	1	Yes
	School		105	65	1	No

Notes:

<sup>a</sup> Distance from school is to the nearest school building.

<sup>b</sup> Distance from residence is to nearest property line.

<sup>c</sup> Noise levels presented for schools would be the expected exterior noise level at the nearest building of the school. Interior noise levels at schools would be the exterior dB noise level minus a 20dB exterior-to-interior noise reduction from standard construction materials (i.e., windows and walls).

<sup>d</sup> An attenuation rate of 6.0 dB per doubling of distance was used to convert the Phase Noise Levels at 50 feet of the noise levels at the nearest sensitive receptors.

### 3.13 NOISE

#### City of Bakersfield

City of Bakersfield Municipal Code chapter 9.22, Noise, defines hours when construction activities are permitted. The City of Bakersfield has not adopted any noise level (decibel) limitations for construction activities. In the City of Bakersfield, construction activity noise including the erection, demolition, alteration, or repair of any building, or the grading or excavation of land, streets, or highways, is allowed only between the hours of 6:00 a.m. and 9:00 p.m. on weekdays and between 8:00 a.m. and 9:00 p.m. on weekends. However, in accordance with provision C of the City of Bakersfield noise ordinance, construction activities beyond 1,000 feet from any residential dwelling is exempt from these daily noise restrictions. The Proposed Project would not involve construction activities within 1,000 feet of any residential dwelling in the City of Bakersfield and, thus, would not cause a substantial increase in temporary ambient noise levels in excess of local standards. Therefore, the impact from construction noise would be less than significant.

#### City of Arvin

The City of Arvin does not have a noise ordinance, and noise levels are not established in the City's General Plan. Therefore, the established noise level standards for Kern County are applied to construction activities within the city of Arvin to determine the Proposed Project's impacts. However, there are no sensitive receptors within 1,000 feet of the Proposed Project construction activities within the city of Arvin. Construction of the Proposed Project would, therefore, not generate a substantial increase in temporary ambient noise levels in excess of local standards. The impact from construction noise in the city of Arvin would be less than significant.

#### Los Angeles County

The Los Angeles County noise standards for construction near residential structures are listed in Table 3.13-12. In summary, Los Angeles County has developed specific daytime and nighttime noise level thresholds for construction activities within proximity to certain types of residential dwellings. There are two rural single family residential structures within 1,000 feet of Proposed Project construction areas in Los Angeles County.

**Table 3.13-12 Established Noise Standards for Construction Near Residential Structures.**

Time	Single-family residential	Multi-family residential	Semiresidential/commercial
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA

*Source: (County of Los Angeles 1978a)*

The first residential structure is located approximately 500 feet south of the Los Angeles–Kern county line. The nearest construction activities to the residence would include the removal of H-frame poles and replacement with LWS poles at poles M48-T10 and M48-T9A in Segment 3. The

### 3.13 NOISE

single-family residence is located approximately 600 feet west of the proposed pole replacements.

The second residential structure is located directly adjacent and approximately 130 feet west of the existing Gorman substation as well as across from Gorman Post Street and approximately 260 feet from the proposed Gorman substation staging area proposed to be placed between Gorman Post Street and I-5. The construction activities at the Gorman Substation would include removal of existing LSTs and poles, installation of new TSPs and LWS poles, removal, transfer, and installation of conductor, staging and storage of equipment, and helicopter takeoff and landing. The estimated construction noise levels from each activity in proximity to the nearest residential structure adjacent to Gorman substation are listed in Table 3.13-11 Noise levels would be 76 dB to 92 dB  $L_{max}$  and would exceed Los Angeles County noise standards of 75 dBA at residences for 50 days during pole installation, demolition, conductor removal, and conductor stringing and would be 78 dBA for up to 180 days during use of the staging area, which would result in a potentially significant impact. The Proposed Project would implement APM NOI-1, which would include using noise reduction features (e.g., mufflers, engine shrouds), limiting unnecessary construction vehicle use, and minimizing idling time of construction trucks and equipment. While APM NOI-1 may result in minor reduction in equipment generated noise levels, the noise levels at the nearest residential structure would continue to exceed Los Angeles County noise standards of 75 dBA at the nearest residences because the mitigation measure would not reduce peak noise levels. Mitigation Measure NOI-2 would require SCE to provide advance notification of construction to residences within 1,000 of construction work areas and to offer to temporarily relocate the residents during nighttime construction activities that may occur adjacent to the residence. Mitigation Measure NOI-3 requires SCE to include a helicopter noise control strategy that identifies the established helicopter flight corridors and minimum transit elevations above ground level to minimize impact to noise-sensitive receptors on the ground. Because the mitigation measures would provide for temporary relocation of residents to avoid exposure to the temporary nighttime construction noise and would reduce construction noise levels with installation of temporary noise barriers and other noise attenuation measures, the impact from exceedance of the Los Angeles County noise standards would be less than significant with mitigation.

#### **Operation and Maintenance**

During operation and maintenance, noise sources resulting from the Proposed Project would include use of work trucks traveling to access the poles and substations for any maintenance or inspections as well as use of some equipment to conduct the maintenance work, such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, and tree trimming and other vegetation maintenance. The operation and maintenance activities as currently performed along the existing subtransmission lines would not change as a result of implementation of the Proposed Project. SCE currently operates and maintains the existing subtransmission lines along the Proposed Project alignment. The activities and frequency of maintenance inspections would remain the same as inspections of the existing lines. Operation and maintenance of the Proposed Project

### 3.13 NOISE

would not result in any alteration in noise levels because the operation and maintenance activities would be the same as those conducted for the existing subtransmission line, and the impact would therefore be less than significant.

**Required APMs and MMs:** APM NOI-1, MM Noise-1, Noise-2, Noise-3

#### Mitigation Measures

##### Mitigation Measure NOI-1: Coordination with El Tejon School

At least 90 days prior to construction at El Tejon School, SCE shall coordinate with El Tejon School to schedule power line construction activities within 1,000 feet of the school to occur when school is not in session (e.g., during holiday or summer breaks). The power line construction activities include roadwork, TSP foundation, TSP haul, TSP assembly, TSP erection, LWS pole haul, LWS pole assembly, LWS pole installation, existing pole removal, existing lattice structure/TSP removal, guard structure installation, and guard structure removal. If power line construction activities within 1,000 feet of El Tejon School need to occur when school is in session, SCE shall provide instructions to El Tejon School on how to reduce impacts of the noise at El Tejon School during construction activities, such as closure of doors and windows, and scheduling of school activities that would minimize effects of construction noise when school is in session.

**Applicable locations:** Work areas within 1,000 feet of El Tejon School and staging area adjacent to El Tejon School

##### **Performance standards and timing:**

**Before construction:** Coordinate construction schedule with El Tejon School for construction activities that would be within 1,000 feet of El Tejon School. Construction activities that are expected to exceed 70 dB at the El Tejon School would include but would not be limited to roadwork, TSP foundation, TSP haul, TSP assembly, TSP erection, LWS pole haul, LWS pole assembly, LWS pole installation, existing pole removal, existing lattice structure/TSP removal, guard structure installation, and guard structure removal. The nearest and loudest construction activities should be scheduled when school is not in session to the extent possible.

**During construction:** SCE shall coordinate schedules to minimize construction activities that are scheduled to occur within 1,000 feet of El Tejon School when school is in session.

**After construction:** N/A

##### Mitigation Measure NOI-2: Resident Notification and Construction Noise Suppression Measures

For construction within Los Angeles County expected to exceed 75 dB at sensitive receptors, SCE shall notify affected residences within 1,000 feet of construction areas at least 10 days in advance of the construction activity. SCE shall also employ noise-control techniques to reduce construction noise exposure in proximity of sensitive receptors. Noise control techniques shall include:

- Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
- Stationary noise sources (e.g., generators, pumps) and staging areas shall be shielded from adjacent noise-sensitive receptors by an enclosure, temporary sound walls, or acoustic blankets. Where feasible, sound walls or acoustic blankets shall have a height of no less than 8 feet, a Sound Transmission Class (STC) of 27 or greater, and a surface with a solid face from top to bottom without any openings or cutouts.
- Construction traffic and helicopter flight shall be routed away from residences and schools, where feasible.

### 3.13 NOISE

#### Mitigation Measure NOI-2: Resident Notification and Construction Noise Suppression Measures

- Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible, such that if a vehicle is not required for use immediately or continuously for safe construction activities, its engine should be shut off.
- Offer temporary relocation to residents within 500 feet of nighttime construction areas.

**Applicable locations:** Residences next to the Gorman substation and within 1,000 feet of construction work areas, including staging areas, in Los Angeles County.

**Performance standards and timing:**

**Before construction:** Notify residents within 1,000 feet of any proposed construction activities in Los Angeles County at least 10 days in advance of construction activities.

**During construction:** Install a sound barrier or sound blankets (rated STC 27 or greater) between the residence and work at the Gorman Substation and the staging area, employ noise suppression measures during construction and provide alternative lodging if desired by residents within 500 feet of proposed nighttime construction activities in Los Angeles County.

**After construction:** N/A

#### Mitigation Measure NOI-3: Helicopter Noise Control Strategy

As part of the final Helicopter Use Plan, SCE shall include a helicopter noise control strategy that identifies the established helicopter flight corridors and minimum transit elevations above ground level to minimize impact to noise-sensitive receptors on the ground.

**Applicable locations:** Helicopter use areas near sensitive receptors.

**Performance standards and timing:**

**Before construction:** Development, review, and approval of Plan by the CPUC prior to construction.

**During construction:** N/A

**After construction:** N/A

#### a) Would the Proposed Project generate excessive groundborne vibration or groundborne noise levels.

##### Construction

Proposed Project construction activities could result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures (Caltrans 2013). At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. Caltrans states that 0.3 in./sec PPV is the threshold for vibration impacts on older residential structures and 0.5 in./sec PPV for newer residential structures, commercial, and industrial buildings. A threshold under 0.5 PPV is rarely used for impact analysis unless the proposed construction is occurring near old residential areas or historic buildings. Therefore a maximum threshold of 0.5 in./sec PPV for exposure of residential and commercial structures to groundborne vibration was used (Caltrans 2020).



### 3.13 NOISE

Construction of the Proposed Project would involve use of heavy equipment that would temporarily generate groundborne vibration levels in proximity to residential and commercial structures. Groundborne vibration levels generated by equipment that would be used in construction of the Proposed Project are listed in Table 3.13-13, below.

**Table 3.13-13 Vibration Levels from Construction Equipment**

Construction equipment	Distance to the nearest receptor (feet)	PPV at 25 feet (in./sec)	PPV at nearest receptors to the Proposed Project area (in./sec)	Exceed threshold of 0.5 PPV? <sup>1</sup>
Track type dozer <sup>2</sup>	168	0.003	0.0002	No
Drum type compactor <sup>2</sup>	168	0.21	0.0121	No
Excavator <sup>3</sup>	168	0.04	0.0023	No
Auger truck <sup>2</sup>	85 (15 feet to guard structure)	0.089	0.01 (0.19 if used within 15 feet of nearest receptor)	No
Dump truck <sup>4</sup>	85	0.076	0.012	No
Backhoe <sup>3</sup>	135 (15 feet to guard structure)	0.028	0.022 (0.06 if used within 15 feet of nearest receptor)	No
Front loader <sup>3</sup>	135 (15 feet to guard structure)	0.0263	0.021 (0.057 if used within 15 feet of nearest receptor)	No

Notes:

1. Caltrans recommends a threshold of 0.5 in./sec PPV for modern residential and commercial structures (Caltrans 2020).
2. Reference PPV obtained from *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
3. Reference PPV obtained from *Ground Vibrations Emanating from Construction Equipment* (New Hampshire Department of Transportation [NHDOT] 2012)
4. This analysis conservatively assumes a dump truck would generate a PPV of 0.076 in./sec at 25 feet (the same as a loaded truck, as listed in Table 7-4 of the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

Vibration impacts associated with construction activities would primarily affect receptors located closest to staging areas and TSP and LWS pole installation sites and those receptors located near conductor removal/replacement locations that would include the use of an excavator, heavy trucks, boom/crane truck, auger truck, and water trucks. The closest receptor to these construction activities would be residences located approximately 85 feet from the work area. There are also several places where guard structures would be installed as close as 15 feet to a residence. Guard structure installation could entail either use of a boom truck or

### 3.13 NOISE

installation of poles. Installation of poles would involve an auger truck, backhoe, and loader truck. The vibration levels from heavy construction equipment that could be used for guard structures as close as 15 feet away from residential structures for installation of guard structures would not exceed the 0.5 in./sec PPV threshold (see Table 3.13-13, above). Since the Proposed Project's construction vibration level would not exceed the identified significance thresholds, the impact from groundborne vibration would be less than significant.

#### **Operation and Maintenance**

SCE currently operates and maintains the existing subtransmission lines along the Proposed Project alignment. Operation and maintenance activities would include the same activities conducted at the same general frequency as the existing subtransmission lines. While the Proposed Project would relocate the subtransmission lines, the subtransmission lines as relocated parallel to the existing subtransmission lines would not cause significant groundborne vibration at any receptor because the subtransmission lines are not a source of groundborne vibration. Therefore, excessive groundborne vibrations or groundborne noise levels would not occur during operation and maintenance activities, and the impact would be less than significant.

**Required APMs and MMs:** None required.

#### **b) Would the Proposed Project be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and expose people working in the project area to excessive noise levels.**

The Proposed Project is not located within the vicinity of a private airstrip or an airport land use plan or within 2 miles of a public airport or public use airport. Therefore, there would be no impact.

**Required APMs and MMs:** None required.

#### **3.13.7 References**

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