

## 3.5 **Noise**

A Project-specific noise assessment was prepared by HELIX to evaluate the potential noise impacts associated with the Proposed Project (HELIX 2017). The following subchapter summarizes information and data contained in that technical study. Appendix G to this EIR contains the Acoustical Site Assessment Report in its entirety.

### 3.5.1 **Noise Descriptors**

Noise can be defined as any unwanted sound. Sound levels are usually measured and expressed in decibels (dB). Since the human ear is not equally sensitive to all sound frequencies, noise levels are factored more toward human sensitivity using the “A” weighting scale, written as dBA. All sound levels discussed in the Acoustical Site Assessment Report and in this EIR are A-weighted. To evaluate the long-term characteristics of sound, accounting for the variability in sound levels over time, a mathematical average is used to describe the noise exposure. This time-averaged sound level over a specific period of time (e.g., one hour) is defined as the noise equivalent level ( $L_{EQ}$ ).

Because community receptors are more sensitive to unwanted noise intrusion during the evening hours and at night, State law requires that measured noise during the evening and night be artificially increased to obtain the average sound level during a 24-hour period. This noise descriptor, which is commonly used to evaluate environmental noise, is called the Community Noise Equivalent Level (CNEL). It is obtained by adding a 5 dBA penalty to measured sound levels in the evening hours (7:00 PM to 10:00 PM) and a 10 dBA penalty to measured sound levels at night (10:00 PM to 7:00 AM) to account for heightened noise sensitivity during the evening and nighttime hours.

Sound generally propagates (i.e., spreads from noise source to noise receptors) geometrically, with a rate reduction of approximately 3 dBA per doubling distance; that is, the noise level will be approximately 3 dBA less at 200 feet from a source than at 100 feet away. This attenuation or reduction in sound over distance can be increased by factors such as soft ground sound absorption, wind, temperature gradients and humidity. Natural features, such as hills and woods, and human-made features, such as buildings, can also shield receivers from noise.

### 3.5.2 **Regulatory Framework**

#### 3.5.2.1 ***California Noise Insulation Standards – Title 24 Noise Standards***

Title 24, Part 2, of the CCR (Cal. Adm. Code Title 24, Chap. 2-35) establishes standards for interior noise and requires preparation of an acoustical study when a residential structure is proposed near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such sources create an exterior CNEL of 60 dBA or greater. The acoustical analysis must demonstrate that the residence has been designed to limit interior noise to a maximum of 45 dBA. Interior noise levels for non-residential uses that are occupied for part of the day, such as schools, libraries, or similar facilities, must not exceed 50 dBA.

### 3.5.2.2 San Diego County General Plan, Noise Element

The Noise Element of the County General Plan (adopted August 3, 2011) contains exterior and interior noise standards for assessing the compatibility of land uses with transportation-related noise impacts. Transportation noise impacts are considered significant if Project implementation results in the exposure of any on- or off-site, existing or reasonably foreseeable future NSLUs to exterior or interior noise (including noise generated from the Project, together with noise from roads [existing and planned Circulation Element roadways], railroads, airports, heliports, and all other noise sources) in excess of any of the following:

A. Exterior Locations:

- i. 60 dBA (CNEL),<sup>1</sup> or
- ii. An increase of 10 dBA (CNEL) over pre-existing noise (where the existing noise is less than 50 CNEL).

In the case of single-family residential detached NSLUs, exterior noise shall be measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum area:

- (1) Net lot area up to 4,000 sf: 400 sf
- (2) Net lot area 4,000 sf to 10 acres: 10 percent of net lot area
- (3) Net lot area over 10 acres: 1 acre

For all other projects, exterior noise shall be measured at all exterior areas provided for group or private usable open space.

B. Interior Locations:

45 dBA (CNEL) except for the following cases:

- i. Rooms which are usually occupied only a part of the day (schools, libraries, or similar facilities), the interior one-hour average sound level due to noise outside should not exceed 50 dBA.
- ii. Corridors, hallways, stairwells, closets, bathrooms, or any room with a volume less than 490 cubic feet.

### 3.5.2.3 County of San Diego Noise Ordinance

The County Noise Ordinance (San Diego County Code of Regulatory Ordinances, Title 3, Division 6, Chapter 4, Section 36.404) establishes noise standards to control excessive noise

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<sup>1</sup> If any adopted community noise standard is more stringent than the exterior criterion of 60 dB CNEL, the analysis of any related impacts due to this standard shall be considered a potential land use impact. The criteria listed in this document are still applicable in all environmental acoustical studies for compliance with CEQA Guidelines for Determining Significance.

generated in the County. The purpose of the noise ordinance is to protect, create, and maintain an environment free from noise and vibration that may jeopardize the health or welfare, or degrade the quality of life. The Noise Ordinance governs non-transportation (stationary) and construction noise source impacts. The allowable noise limits depend upon the County’s zoning district and time of day as shown below.

Zone	Time	Applicable Limit One-hour Average Sound Level (dBA)
1. RS, RD, RR, RMH, A70, A72, S80, S81, S90, S92, RV, and RU with a General Plan Land Use Designation density of less than 10.9 dwelling units per acre	7:00 AM to 10:00 PM	50
	10:00 PM to 7:00 AM	45
2. RRO, RC, RM, S86, FB-V5, RV, and RU with a General Plan Land Use Designation density of 10.9 or more dwelling units per acre	7:00 AM to 10:00 PM	55
	10:00 PM to 7:00 AM	50
3. S94, FB-V4, AL-V2, AL-V1, AL-CD, RM-V5, RM-V4, RM-V3, RM-CD, and all commercial zones	7:00 AM to 10:00 PM	60
	10:00 PM to 7:00 AM	55
4. FB-V1, FB-V2, RM-V1, RM-V2 FB-V1, FB-V2, RM-V1, RM-V2 FB-V1, RM-V2 FB-V2, RM-V1	7:00 AM to 7:00 PM	60
	7:00 PM to 10:00 PM	55
	10:00 PM to 7:00 AM	55
	10:00 PM to 7:00 AM	50
FB-V3	7:00 AM to 10:00 PM	70
	10:00 PM to 7:00 AM	65
5. M50, M52, M54	Anytime	70
6. S82, M56, M58	Anytime	75
7. S88 <sup>1</sup>	-	-

Source: American Legal Publishing Corporation 2017 (Table 36.404 from County of San Diego Noise Ordinance)

<sup>1</sup> S88 zones are Specific Planning Areas which allow different uses. The sound level limits shown in the table above that apply in an S88 zone depend on the use being made of the property. The limits in table subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.

### 3.5.3 Environmental Setting

#### 3.5.3.1 Existing Noise Sensitive Land Uses

Noise sensitive land uses (NSLUs) are associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise. They typically include residential dwellings, dormitories, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities (i.e., classrooms) and libraries. The Project impact footprint consists of undeveloped land designated for rural residential and industrial development. The land surrounding the Project impact footprint is also designated for rural residential and industrial development, as well as technology business park and conservation/limited use. A power plant is located on a lot abutting the northwestern edge of the impact footprint. Correctional facilities are located approximately

1.5 miles north of the impact footprint. The closest residence is located along Kuebler Ranch Road approximately 2,200 feet northwest of the Proposed Project impact footprint. This location is shielded from a direct view of the Project by the ridgeline running east to west beyond the northern project footprint. The location would have impacts well below significant levels and is not further considered. In addition, three homes are located approximately 1.3 miles west of the impact footprint along Otay Mesa Road between SR 905 and Alta Road. No other NSLUs are located in the immediate vicinity of the Project impact footprint.

### **3.5.3.2 Existing Noise Sources**

The site is located within a relatively undeveloped area without substantial noise sources. Existing noise sources in the Project impact footprint include vehicular traffic on Alta Road, approximately 2,600 feet to the west; Brown Field Airport and Tijuana International Airport, both approximately three miles to the east; and the Calpine Power Plant adjacent to the northwestern boundary of the Project site. Noise levels generated by both airports generate are below 60 dBA CNEL at the Project impact footprint. It should be noted that aircraft used by the U.S. Border Patrol periodically fly above the Project area, which also contributes to the existing noise environment.

### **3.5.3.3 Ambient Noise Measurements**

Noise measurements were conducted on May 24, 2005 at the northwestern portion of the Project impact footprint (Site 1), along Otay Mesa Road (Site 2) and Alta Road (Site 3) to determine the existing noise levels at the Project impact footprint and at nearby Project haul roads (refer to Figure 3.5-1, *Noise Measurement Locations*). Traffic volumes were recorded at the time noise measurements were taken.

The measured average sound level at the Project impact footprint at Site 1 was 40 dBA  $L_{EQ}$ . Measured average sound levels at Site 2 and Site 3 were 70 and 66 dBA  $L_{EQ}$ , respectively. The recorded existing average noise levels and traffic levels are presented in Table 3.5-1, *On-site Measured Noise Levels and Traffic Volumes (2005)*.

A second site visit was made on December 3, 2007 at approximately 4:00 PM. A noise measurement was taken at the edge of the Project impact footprint south of the Calpine Power Plant (Site 4). Noise levels of 52.4 dBA  $L_{EQ}$  measured at this location, with the only audible noise from temporary pipeline construction approximately 300 yards south of the measurement site.

During a follow-up visit on September 19, 2011, four additional short-term (15-minute) noise measurements were conducted (refer to Figure 3.5-1). Monitoring site M1 is located near the western end of the segment of Otay Mesa Road between Sanyo Avenue and Enrico Fermi Drive. Monitoring site M2 is located at the intersection of Alta Road and Calzada de la Fuente. Monitoring site M3 is located at the dead-end of Paseo de la Fuente near the southwestern corner of the Project site. Monitoring site M4 is located on Calzada de la Fuente directly across from the Calpine Power Plant. All measurement locations have a direct line-of-sight view to the adjacent roads, and M4 has a direct line-of-sight view to the loudest power plant noise sources. The measured average noise levels were 73.1 dBA  $L_{EQ}$  at M1, 68.0 dBA  $L_{EQ}$  at M2, 48.8 dBA  $L_{EQ}$  at M3, and 65.1 dBA  $L_{EQ}$  at M4. The measured average noise levels and concurrent traffic volumes are shown in Table 3.5-2, *Follow-Up Measured Noise Levels and Traffic Volumes (2011)*. During

measurements taken at the M2 location, all counted traffic was traveling on Alta Road. As noted, the measured noise levels are in terms of the average sound level during the noise measurement period.

The County Noise Ordinance also governs construction noise. Specifically, the ordinance states in Section 36.410(c) that “it shall be unlawful to operate any construction equipment so as to cause at or beyond the property line of any property upon which a legal dwelling unit is located an average sound level greater than 75 dBA between the hours of 7:00 AM through 7:00 PM, Monday through Saturday, excluding legal holidays.”

#### **3.5.3.4 Sensitive Species Noise Restrictions**

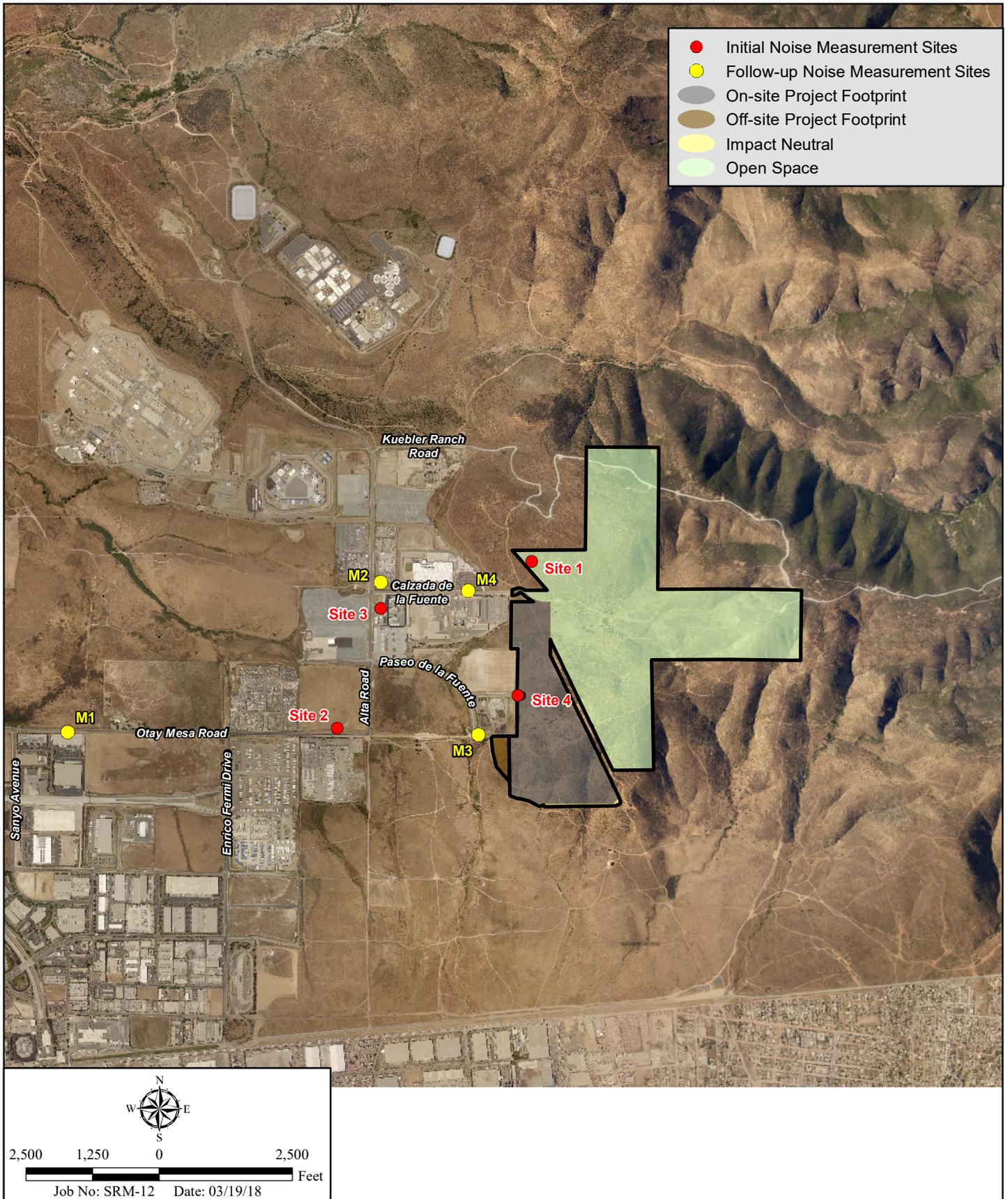
As discussed in the County of San Diego Guidelines for Determining Significance for Biological Resources (September 15, 2010), some studies have concluded that 60 dBA is a single, simple criterion to use as a starting point for passerine impacts until more specific research is done. Associated guidelines produced by the USFWS require that project noise be limited to a level not to exceed 60 dBA  $L_{EQ}$  or the average ambient noise level – whichever is greater – at the edge of a sensitive habitat during the breeding season. This threshold has consistently been applied to sensitive avian species by various jurisdictions, including the County. Therefore, if Project implementation occurs adjacent to occupied habitat during the breeding season, noise planning and control would be required.

<b>Location</b>	<b>Description</b>	<b>Date and Time</b>	<b>dBA L<sub>EQ</sub></b>	<b>Cars</b>	<b>Medium Trucks</b>	<b>Heavy Trucks</b>
1	Northwestern portion of Project impact footprint	5/24/05 8:40 to 8:55 AM	40 dBA	-	-	-
2	45 feet to centerline of Otay Mesa Road	5/24/05 7:00 to 8:00 AM	70 dBA	535	8	21
3	50 feet to centerline of Alta Road	5/24/05 8:10 to 8:30 AM	66 dBA	84	1	4

Source: HELIX 2017

<b>Location</b>	<b>Description</b>	<b>Date and Time</b>	<b>dBA L<sub>EQ</sub></b>	<b>Cars</b>	<b>Medium Trucks</b>	<b>Heavy Trucks</b>
M1	Otay Mesa Rd between Sanyo Avenue and Enrico Fermi Drive 30 feet from roadway center line	9/19/2011 2:11 to 2:26 PM	73.1 dBA	170	6	23
M2	Intersection of Alta Road and Calzada de la Fuente, 26 feet from Alta Road centerline	9/19/2011 2:55 to 3:10 PM	68.0 dBA	100	1	2
M3	Terminus of Paseo de la Fuente southwest of Project site	9/19/2011 3:27 to 3:42 PM	48.8 dBA	-	-	-
M4	Calzada de la Fuente, opposite power plant noise sources	9/19/2011 3:50 to 4:05 PM	65.1 dBA	-	-	-

Source: HELIX 2017



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## Noise Measurement Locations

OTAY HILLS EIR

Figure 3.5-1