

4.12 Noise

This section describes the existing ambient noise environment including the sources of noise in the area of the Fanita Ranch Project (proposed project) and the location of noise-sensitive land uses (NSLUs) within the proposed project vicinity. Additionally, this section reviews relevant federal, state, and local noise laws, ordinances, regulations, and statutes, and provides a determination of significance based upon local and state planning and regulatory guidelines to address potential noise impacts as a result of implementation of the proposed project with respect to changes in vehicular transportation noise, stationary noise, aviation noise, and project construction noise and vibration. This section is based on the Noise Technical Report prepared by Harris & Associates (2020), which can be found in Appendix L of this EIR.

4.12.1 Environmental Setting

This section describes the existing noise setting as it pertains to the project site.

4.12.1.1 Fundamentals of Environmental Noise

Quantification of Noise

The California Department of Transportation (Caltrans) defines noise as sound that is loud, unpleasant, unexpected, or undesired. Further, for the purposes of noise analysis, noise only exists if a source, path, and receiver are present. Sound pressure waves must be produced by a source and transmitted through a medium, such as air. The sound must be perceived by, registered by, or affect a receptor, such as an ear or noise monitoring device (Caltrans 2013a).

Sound pressure levels are quantified using a logarithmic ratio of actual sound pressures to a reference pressure squared, called bels. A bel is typically divided into tenths, or decibels (dB). Sound pressure alone is not a reliable indicator of loudness because frequency (or pitch) also affects how receptors respond to the sound. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, the raw sound pressure level is adjusted with a frequency-dependent A-weighting scale that is stated in units of decibels (dBA) (Caltrans 2013a). Typical A-weighted noise levels are listed in Table 4.12-1.

Table 4.12-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet flyover at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013a.

Note: dBA = A-weighted decibel

A receptor's response to a given noise may vary depending on the sound level, duration of exposure, character of the noise sources, the time of day during which the noise is experienced, and the activity affected by the noise. Activities most affected by noise include rest, relaxation, recreation, study, and communications. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects from a variety of noise levels. For example, some measures consider the 24-hour noise environment of a location by using a weighted average that penalizes noise levels during normal relaxation and sleep hours. Other measures consider an average noise level over a period of time that includes ambient noise and a steady-state noise source for a given period of time within the averaging period (Caltrans 2013a). The indices for measuring community noise levels that are used in this report are defined below:

L_{max}, the maximum noise level, is the highest instantaneous noise level during a specified time period.

L_{min}, the minimum noise level, is the lowest instantaneous noise level during a specified time period.

L_{eq}, the equivalent energy level, provides an average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 15 minutes, 1 hour, or 8 hours. The sound level may not be constant over the measured time period, but the average decibel sound level, given as dBA L_{eq}, contains an equal amount of energy as the fluctuating sound level.

L_{dn}, the day-night noise level, is a 24-hour L_{eq}, except that the nighttime hours (10 p.m. to 7 a.m.) are assessed a 10 dBA penalty. This penalty attempts to account for the fact that nighttime noise levels are potentially more disturbing than equal daytime noise levels. The community noise equivalent level (CNEL) is similar to L_{dn}, except an additional +5 dBA weighting is applied to all sound occurring between 7:00 p.m. and 10:00 p.m. The City of Santee (City) uses L_{dn} to measure noise in the City; therefore, L_{dn} is used in this analysis (City of Santee 2003). L_{dn} and CNEL are typically within 1 dBA of each other and, for most intents and purposes, are interchangeable.

The decibel level of a sound decreases (or attenuates) as the distance from the source of that sound increases. For a single point source, such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Sound that originates from a linear, or “line” source such as vehicular traffic, attenuates by approximately 3 dBA per doubling of distance. Other contributing factors that affect sound reception include ground absorption, topography that provides a natural barrier, meteorological conditions, or the presence of human-made obstacles such as buildings and sound barriers (Caltrans 2013a). Noise from roadways in environments with major ground effects may yield attenuation rates as high as 4.5 dBA for each doubling of distance due to vegetation and loose soils that would reduce noise levels by either absorbing or scattering the sound (Appendix L).

Noise Effects

Reaction to a given sound varies depending on acoustical characteristics of the source and the environment of the receptor. The A-scale deemphasizes low-frequency sounds because humans are more sensitive to high-frequency sounds that are more likely to cause hearing damage. People tend to compare an intruding noise to existing background noise levels. If a new noise is considerably louder or noticeable above existing levels, it is generally considered objectionable. The activity that the receptor is engaged in also affects response. For example, the same noise source, such as constant freeway traffic, may be more objectionable to people sleeping than to

workers in a factory. A 3 dBA change is the smallest increment that is perceptible by most receivers, and a 5 dBA change in community noise level is clearly noticeable. Generally, 1 to 2 dBA changes are not detectable, except under controlled laboratory conditions. A sound that is 10 dBA greater than the reference sound is typically perceived as twice as loud (Caltrans 2013a).

4.12.1.2 Fundamentals of Environmental Vibration

Vibration is defined as dynamic excitation of an elastic system, such as the ground or a structure, which results in oscillatory movement of the system (Caltrans 2013b). Typical human-made causes of earthborne vibration include trains and construction activities such as blasting, pile-driving, and operation of heavy earthmoving equipment. The resulting waves transmitted through solid material are referred to as structureborne or groundborne vibration. Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. The vibration levels inside a building depend on the vibration energy that reaches the foundation and the characteristics of the structure that affect propagation of the vibration through it. A heavier building will typically experience lower vibration levels. The most common impact associated with vibration is annoyance resulting from the effects of vibration, such as building movement, rattling of windows, shaking of items on shelves or walls, and rumbling sounds. In more extreme cases, building damage may occur. Because the effects of vibration elicit a greater response than the vibration itself, vibration is typically only perceptible to people inside buildings (FTA 2018).

Vibration levels are typically expressed in terms of the peak particle velocity (PPV) and root mean square (rms) amplitude, both in inches per second (in/sec). PPV is most appropriate for evaluating building damage potential. Caltrans estimates that continuous vibration levels of less than 0.08 PPV and single-event vibration levels of less than 0.12 PPV do not result in damage to even the most fragile historic buildings (Caltrans 2013b). The Federal Transit Administration (FTA) has identified a maximum PPV of 0.2 in/sec for fragile buildings and 0.12 in/sec for extremely fragile historic buildings (FTA 2018).

PPV does not account for human response to vibration. The rms amplitude is used to represent average vibration amplitude, which accounts for the time it takes for the human body to respond to vibration signals. The rms amplitude is also given in decibel notation, referenced as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration relative to human response (FTA 2018). The general human response to different groundborne vibration velocity levels is described in Table 4.12-2.

Table 4.12-2. Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Noise Level		Human Reaction
	Low Frequency	Mid Frequency	
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many people. Mid-frequency sound may disturb sleep.
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is annoying. Mid-frequency noise disturbs sleep and is considered annoying in more quiet areas.
85 VdB	45 dBA	60 dBA	Vibration acceptable only if there are an infrequent number of events per day. Low-frequency noise disturbs sleep and mid-frequency noise can be annoying to daytime NSLUs, such as schools.

Source: FTA 2018.

Note: dBA = A-weighted decibel; NSLU = noise-sensitive land use; VdB = vibration decibel

The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Like airborne noise, groundborne noise is measured in dBA. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB, as shown in Table 4.12-2. Due to its low-frequency components, groundborne noise sounds louder than broadband noise with the same noise level (FTA 2018). Typical human response to groundborne noise levels are shown in Table 4.12-2. The background vibration velocity level in residential areas is usually around 50 VdB, which is below the 65 VdB threshold of human perception (FTA 2018). The same human reaction corresponds to a given vibration velocity level and its resulting noise level; therefore, for simplicity, this analysis refers only to a source's VdB to describe potential human response to groundborne vibration and noise.

4.12.1.3 Existing Noise Environment

Existing noise sources that affect the project site are described below.

Existing Conditions

The project site is currently undeveloped and there are no noise-generating sources on the site. The primary existing sources of noise in the vicinity of the project site are vehicular traffic on local streets near the project site. The existing average daily traffic (ADT) volume ranges from 2,600 to 3,800 along Fanita Parkway, north of Mast Boulevard (Appendix N). The existing traffic volume along Cuyamaca Street is 8,800 ADT between Mast Boulevard and El Nopal (Appendix N). Other major area roadways include Mast Boulevard (7,700 to 26,000 ADT), Carlton Hills Boulevard (5,800 to 25,000 ADT), Magnolia Avenue (2,000 to 13,000 ADT north of Mast Boulevard), and State Route (SR)-67 (77,000 to 93,000 ADT).

Land adjacent to the northern boundary of the property is under the jurisdiction of the County of San Diego (County) and is primarily undeveloped, with the exception of an aggregate mining facility (quarry), the westerly edge of which is located approximately 1,000 feet northeast of the project site on Slaughterhouse Canyon Road. Most of the quarry's operations occur on the eastern

portion of the facility, separated from the project site by SR-67, more than 1 mile from the project site. Noise levels generated by equipment typical of mining in the County range from 50 to 91 dBA at 50 feet from the equipment (County of San Diego 2011). Due to distance and topography, the quarry is not a source of noise on the project site.

Marine Corps Air Station (MCAS) Miramar is north and west of the project site. This area includes thousands of acres of undeveloped land, much of it in its natural state. The portion adjacent to the proposed project is undeveloped. Aircraft noise generated from MCAS Miramar is described in the Transportation Noise Sources subsection.

Land adjacent to the northwestern boundary of the project site development area is within the jurisdiction of the City of San Diego. These lands are designated for Very Low Density Residential, Open Space, and a sanitary landfill. Noise from the landfill operation to the project site is blocked by intervening topography. Due to the generally undeveloped nature of the land adjacent to the northern and western portions of the project site, existing noise levels within the northern portion of the project site are low. Padre Dam Municipal Water District (PDMWD) facilities are located immediately to the west of the Fanita Parkway alignment, including Santee Lakes Recreation Preserve. This 190-acre area includes recreational facilities (boating, picnicking, camping, and fishing) and a wastewater treatment plant. The primary noise from this facility is the vehicle traffic on Fanita Parkway. A new residential neighborhood (Weston) is located west of the Santee Lakes Recreation Preserve area.

Residential development occurs south of the project site in the City and east of the project site in the Eucalyptus Hills development in the unincorporated County. Noise levels in this area are also low, originating primarily from traffic in the residential areas.

Ambient Noise Monitoring

An ambient sound level survey was conducted on January 30, 2019, to quantify the noise environment within the project boundary and the surrounding vicinity. An additional survey was conducted on March 5, 2019, to characterize operational noise levels at the Coastal Roots Farm located at 441 Saxony Road in the City of Encinitas. This farm is similar to the proposed Farm and operated by the anticipated Farm manager. A total of 11 measurements were taken across the project site and in the residential neighborhoods surrounding the site. A total of three measurements were taken at the existing Coastal Roots Farm and surrounding residential neighborhood. The measurements were taken during the daytime (9:00 a.m. to 4:30 p.m.) and were 16 minutes in duration. A Larson Davis SoundExpert LxT Type I Integrating Sound Level Meter calibrated with a Larson Davis CAL200 calibrator was used to record ambient sound levels. Weather conditions during the measurements were calm with a mild temperature and partly-cloudy skies. Table 4.12-3 summarizes the measured Leq and noise sources for each monitoring location. The monitoring locations are shown on Figure 4.12-1, Project Area Noise Monitoring Locations, and Figure 4.12-2, Farm Noise Monitoring Locations.

Table 4.12-3. Ambient Sound Level Measurements (dBA)

Site	Location	Observed Noise Sources	Date/Time	Leq	Lmax	Lmin
On-Site Proposed Project Noise Measurements						
1	PDMWD Water Treatment Plant near western edge of project site at proposed Orchard Village location	Sounds from operation of the facility, including running water, squealing from equipment, and a small tractor. Helicopter and small plane flyovers, and human activities including talking and bicycling	1-30-2019/9:28 a.m.	57.3	72.8	50.5
2	Area proposed for Low Density Residential use at southern boundary of Orchard Village	Gunfire from a small arms range at MCAS Miramar, jet and plane flyovers	1-30-2019/10:04 a.m.	54.6	77.3	31.0
3	Proposed Habitat Preserve area in the center of the project site surrounded by Orchard Village, Street "V," Vineyard Village, and Street "W"	Jet flyover, gunfire from a small arms range at MCAS Miramar, distant emergency vehicle sirens, bicyclists, birds	1-30-2019/10:50 a.m.	40.5	57.6	27.7
4	Area proposed for Active Adult community at northern boundary of Orchard Village	Jet and plane flyovers, birds, talking from hikers	1-30-2019/11:16 a.m.	57.4	76.0	31.7
5	Area proposed for Low Density Residential use at the northeast edge of Vineyard Village	Plane flyovers, birds, traffic on SR-67	1-30-2019/11:53 a.m.	60.7	83.5	38.4
6	Area proposed for Low Density Residential use at the southeast edge of Vineyard Village	Rooster cawing, birds, dogs, jet flyovers	1-30-2019/12:25 p.m.	45.0	61.2	30.2
7	Western project boundary at proposed Special Use area	Children playing and talking outside at Sycamore Canyon School, dog barking, distant construction noise, jet flyover	1-30-2019/2:21 p.m.	49.8	61.6	42.6
Off-Site Santee Noise Measurements						
1	Intersection of Fanita Parkway and Ganley Road	Vehicle noise, pedestrian activity, dog barking, bicyclists, birds, distant plane flyover	1-30-2019/3:06 p.m.	61.2	80.0	38.2
2	Intersection of Fanita Parkway and Lake Canyon Road	Vehicle noise, small plane flyover, pedestrian activity	1-30-2019/3:25 p.m.	68.3	91.7	44.4
3	Intersection of Cuyamaca Street and El Nopal	Vehicle noise, helicopter flyovers	1-30-2019/3:50 p.m.	63.9	80.7	39.3
4	Intersection of Magnolia Avenue and Princess Joann Road	Vehicle noise, dogs barking, birds, pedestrian activity, helicopter flyovers	1-30-2019/4:12 p.m.	57.5	73.6	38.0

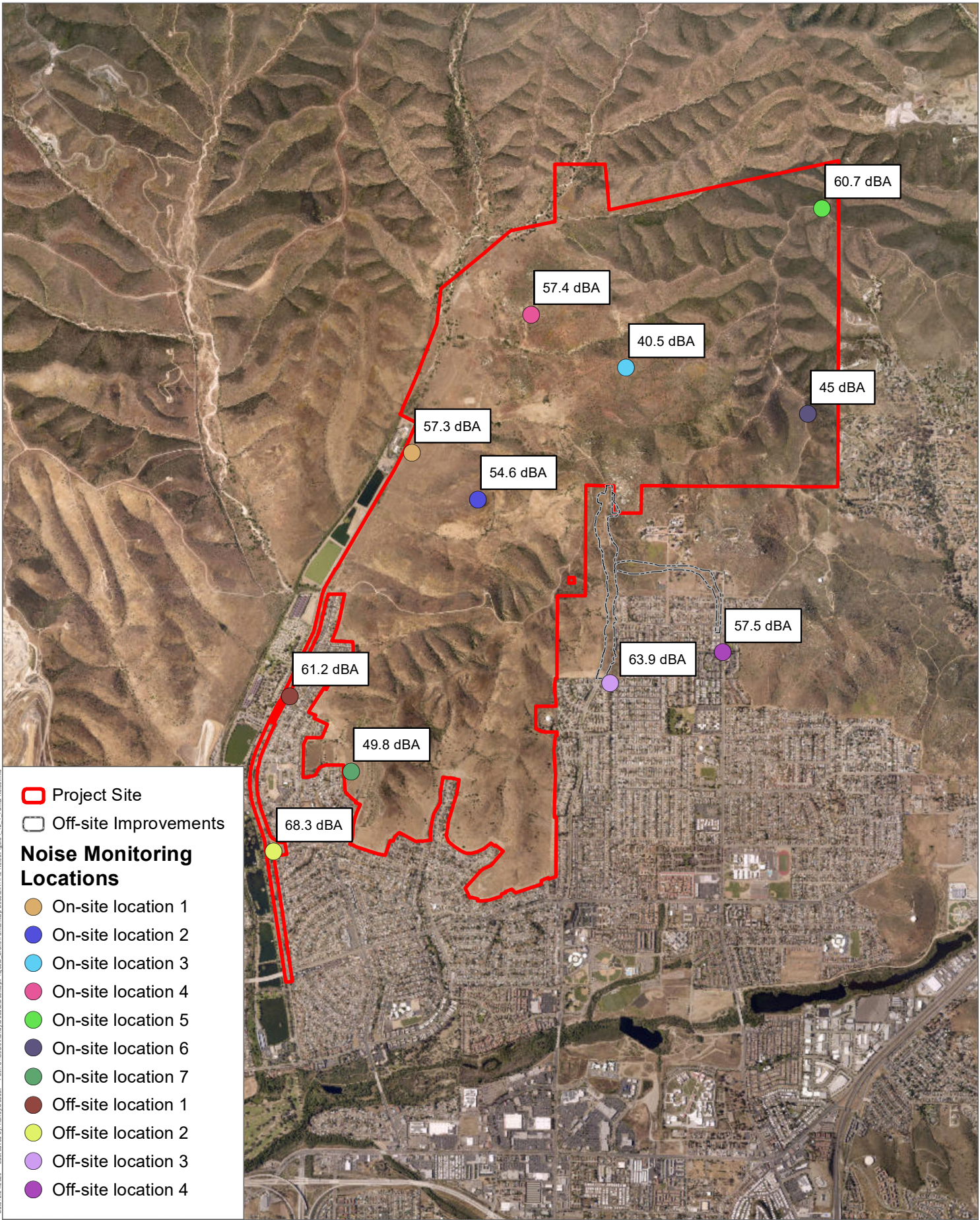
Table 4.12-3. Ambient Sound Level Measurements (dBA)

Site	Location	Observed Noise Sources	Date/Time	Leq	Lmax	Lmin
Off-Site Escondido Farm Noise Measurements						
1	Saxony Road, north of Ecke Ranch Road, adjacent to residences	Vehicle noise on Saxony Road, normal conversation, use of hand tools, and UTV operation on farm property	3-5-2019/9:49 a.m.	59.6	70.6	45.4
2	Coastal Road farm property in the center of the site, north of Ecke Ranch Road	Rooster cawing intermittently, vehicle noise, sprinkler operation, dumpster receptacle moving activity, normal conversation, birds	3-5-2019/10:12 a.m.	54.4	57.4	51.2
3	Saxony Road, south of Ecke Ranch Road, adjacent to residences	Vehicle noise on Saxony Road, operation of farm truck and farm equipment, UTV operation, bicyclists, birds	3-5-2019/10:43 a.m.	66.7	78.3	48.0

Source: Appendix L.

Note: dBA = A-weighted decibel; Leq = equivalent continuous sound level; Lmax = maximum sound level; Lmin = minimum sound level; PDMWD = Padre Dam Municipal Water District; UTV = utility task vehicle

Ambient measurements were 16 minutes in duration.



 Project Site
 Off-site Improvements

Noise Monitoring Locations

- On-site location 1
- On-site location 2
- On-site location 3
- On-site location 4
- On-site location 5
- On-site location 6
- On-site location 7
- Off-site location 1
- Off-site location 2
- Off-site location 3
- Off-site location 4

Source: SanGIS 2017

Figure 4.12-1
Project Area Noise Monitoring Locations

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Source: SanGIS 2017



Harris & Associates

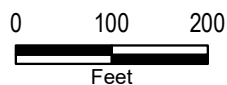


Figure 4.12-2

Farm Noise Monitoring Locations

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The results of the ambient noise survey reflect daytime noise levels that range between 40.5 dBA Leq and 60.7 dBA Leq on the project site. The primary noise sources on the project site are birds, recreational use of the site, and intermittent flyovers. Normally acceptable ambient community noise levels up to 65 dBA Ldn are considered compatible with residential development as specified in the Santee General Plan (City of Santee 2003). Ambient community noise levels of up to 70 dBA Ldn are acceptable for Neighborhood Parks and commercial buildings. Although the City's guidelines refer to 24-hour weighted average noise levels (Ldn), daytime noise levels (Leq) were used in this EIR to screen for general noise compatibility. A daytime noise level that is within the General Plan compatible noise level range indicates general compatibility because this is when noise sources are at the highest levels. Based on these compatibility guidelines, ambient noise levels across the site are compatible with the proposed land uses. Measured noise levels at the off-site locations range from 57.5 dBA Leq to 68.3 dBA Leq. Daytime noise levels of 65 dBA Leq or less in the areas surrounding the project site would generally be considered normally acceptable under the City's compatibility guidelines, and all measurements are within the conditionally acceptable (acceptable with noise attenuation features) noise compatibility guideline of 70 dBA Ldn or below. Noise levels at the Coastal Roots Farm range between 54.4 dBA Leq and almost 66.7 dBA Leq, which is within the conditionally compatible noise standard for residences. However, the measurements and field notes indicate that the dominant noise source in the area of the Coastal Roots Farm is vehicle noise on Saxony Road. The result of the measurement taken at the center of the Coastal Roots Farm property was 54.4 dBA Leq, which is well within the normally compatibility guideline of 65 dBA Ldn for residential development.

Transportation Noise Sources

Aviation

MCAS Miramar is located adjacent to the west/northwestern boundary of the project site. The runways are located approximately 6 miles west of the project site. Aircraft currently flown at MCAS Miramar include F-35, F/A-18, KC-130, and C-12 aircraft, as well as CH-46 and CH-53 helicopters (MCAS Miramar 2018). The maximum presently authorized mission of the airfield is 112,242 annual aircraft operations. MCAS Miramar also typically hosts an annual air show that includes additional aircraft and higher than normal levels of aircraft operations during the event. As noise abatement measures for normal operations, fixed-wing aircraft and helicopter flight routes have been designed to follow major rail lines and highways or to remain over base property. The current Airport Land Use Compatibility Plan adopted by the County Airport Land Use Commission for MCAS Miramar indicates that the entire project site is outside the 60 dBA CNEL noise contour (SDCRAA 2011).

Gillespie Field airport, operated by the County, is also identified as a noise source in the Santee General Plan. This airport is located approximately 1.75 miles south of the project site in the City of El Cajon. Annual operations from Gillespie Field totaled approximately 233,969 flights in 2018 (County of San Diego 2020) and are projected to reach 294,050 by 2025 (SDCRAA 2010). The

project site is located entirely outside of the 60 dBA CNEL noise contour for Gillespie Field; however, the Special Use area is within the overflight notification area (SDCRAA 2010).

Roadways

The proposed project lies north of SR-52 and west of SR-67 and would be accessed from the future northerly extensions of Fanita Parkway and Cuyamaca Street via Mast Boulevard and the future extension of Magnolia Avenue to Cuyamaca Street. There are no existing roadways on the project site. Table 4.12-4 shows the calculated existing noise levels generated by the roadways surrounding the project site. As shown in Table 4.12-4, existing noise levels from Mast Boulevard, Mission Gorge Road, Carlton Hills Boulevard, Cuyamaca Street, Magnolia Avenue, and SR-52 currently exceed the normally acceptable noise compatibility standard of 65 dBA Ldn for residences, schools, and other NSLUs. Noise generated along Mast Boulevard, Mission Gorge Road, Cuyamaca Street, and SR-52 currently exceeds the normally acceptable noise compatibility standard of 70 dBA Ldn for parks and commercial uses.

Table 4.12-4. Existing Off-Site Roadway Noise Levels

Roadway	Segment	Existing Average Daily Trips	Noise Level at 50 Feet from Roadway Centerline (dBA Ldn)
Mast Boulevard	SR-52 to West Hills Parkway	26,440	72
	West Hills Parkway to Medina Drive	19,540	70
	Pebble Beach Drive to Fanita Parkway	19,590	70
Mission Gorge Road	SR-125 to Fanita Drive	45,440	78
	Fanita Drive to Carlton Hills Boulevard	41,100	77
Fanita Parkway	Ganley Road to Lake Canyon Road	2,610	60
	Lake Canyon Road to Mast Boulevard	3,860	62
	Mast Boulevard to Carlton Oaks Drive	3,330	59
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	24,960	69
Cuyamaca Street	Chaparral Drive to Woodglen Vista Drive	670	54
	Woodglen Vista Drive to El Nopal	4,360	62
	El Nopal to Mast Boulevard	8,860	66
	Mast Boulevard to River Park Drive	19,600	69
	River Park Drive to Town Center Parkway	26,690	70
	Town Center Parkway to Mission Gorge Road	21,850	72
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	2,020	60
	Woodglen Vista Drive to El Nopal	9,030	67
	El Nopal to Mast Boulevard	13,690	68
SR-52	Santo Road to Mast Boulevard	96,000	77 ¹

Source: Appendix N (traffic data). See Appendix B of EIR Appendix L for noise model assumptions and output.

Note: dBA = A-weighted decibel; Ldn = day-night noise level; SR- = State Route

¹ Noise level at 100 feet from centerline due to roadway width.

Railroads

The Green Line route of the San Diego Trolley operated by the Metropolitan Transit Service terminates in the Santee Town Center area at the northwest corner of Mission Gorge Road and Cuyamaca Street. It is not a significant noise generator in the City due to its intermittent operation and its alignment, which passes through a primarily commercial corridor on Cuyamaca Street (City of Santee 2003). Noise from the Green Line route typically does not exceed 60 dBA at 100 feet or more from the centerline of the track (RECON 2017). The route is located approximately 1 mile south of the project site and noise from operation of the Green Line is not audible at the project site.

Noise-Sensitive Land Uses

NSLUs are land uses that may be subject to stress or interference from excessive noise. The Santee General Plan defines NSLUs as areas containing residences, schools, hospitals, rest homes, or long-term medical or mental care facilities. Industrial and commercial land uses are generally not considered sensitive to noise. There are no NSLUs currently located on the project site. The nearest NSLUs to the project site are the single-family neighborhoods adjacent to the western, southern, and eastern boundaries of the project site and the campground and recreational vehicle park at the Santee Lakes Recreation Preserve adjacent to the western boundary of the site. Other NSLUs in the project vicinity are Cajon Park, located approximately 0.6 mile east of the project site; Santana High School, located approximately 0.75 mile east of the project site; Edgemoor Skilled Nursing Facility, located approximately 0.6 mile southeast from the project site; Rio Seco School, located approximately 0.3 mile south of the project site; the Santee Public Library, located approximately 0.85 mile south of the project site; Sycamore Canyon School, located approximately 250 feet (0.05 mile) east of the Fanita Parkway improvement area; and West Hills High School, located approximately 1 mile southwest of the project site.

Vibration-Sensitive Land Uses

Land uses in which groundborne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations, are considered vibration sensitive (FTA 2018). The degree of sensitivity depends on the specific equipment that would be affected by the groundborne vibration. Excessive levels of groundborne vibration of either a regular or an intermittent nature can result in annoyance to residential uses. The nearest vibration-sensitive land use to the project site is the Edgemoor Skilled Nursing Facility, located approximately 0.6 mile to the southeast of the project site.

4.12.2 Regulatory Framework

Applicable federal, state, and local regulations pertaining to noise are described below.

4.12.2.1 Federal

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration, Code of Federal Regulations, Title 14, Part 150, prescribes the procedures, standards, and methods governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. The Federal Aviation Administration considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA Ldn.

Federal Transit Administration Standards

Although the FTA standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (September 2018) are routinely used for projects proposed by local jurisdictions. The manual includes criteria for assessing the impacts of groundborne vibration, presented in Table 4.12-5.

Table 4.12-5. FTA Groundborne Vibration Impact Criteria

Land Use Category	Impact Levels (VdB)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
Category 1: Buildings where vibration would interfere with interior operations	65	65	65
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Source: FTA 2018.

Notes: VdB = vibration decibel

Vibration levels are measured in or near the vibration-sensitive use.

¹ "Frequent Events" are defined as more than 70 vibration events of the same source per day.

² "Occasional Events" are defined as between 30 and 70 vibration events of the same source per day.

³ "Infrequent Events" are defined as fewer than 30 vibration events of the same source per day.

Noise Control Act

The Noise Control Act of 1972 identified uncontrolled noise as a danger to health and welfare, particularly for people in urban areas. Responsibility for noise control remains primarily a state and local issue; however, the Noise Control Act established a means for effective coordination of federal research and noise control activities (USEPA 2019). The act included a directive that the U.S. Environmental Protection Agency develop and publish information on noise levels to protect public health and welfare with an adequate margin of safety. In 1974, the U.S. Environmental Protection Agency published the document "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." The document identifies an interior noise level of 45 dBA Ldn in indoor residential areas to be adequate to protect

indoor activity from interference and annoyance. An exterior noise level of 55 dBA Ldn was identified as the maximum noise level to avoid interference and annoyance in residential areas and other areas in which quiet is a basis for use. A maximum 24-hour average outdoor noise level of 70 dBA Leq is recommended to prevent hearing loss (USEPA 1974).

4.12.2.2 State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, find that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare. Section 46050.1 of the act mandates development guidelines for the preparation and content of General Plan Noise Elements.

4.12.2.3 Local

Santee General Plan

Divided into nine elements, the Santee General Plan is a statement of intent by the City as to the future development of the community. This is accomplished through objectives and policies that serve as a long-term policy guide for physical, economic, and environmental growth.

The Noise Element of the Santee General Plan contains goals and policies to control and abate environmental noise and to protect the citizens of Santee from excessive exposure to noise. The Santee General Plan establishes an exterior ambient noise standard of 65 dBA Ldn for NSLUs. This criterion is applied at the rear yard areas of single-family residences and ground floor common areas and private patio areas for multi-family residences. For other NSLUs, such as libraries, schools, or hospitals, noise-sensitive areas shall be those areas that serve a significant function for the use that could be adversely affected by noise. For example, for schools, it is applied to outdoor teaching or discussion areas (does not include playgrounds or other active outdoor areas) (City of Santee 2003).

Table 4.12-6 presents the Noise Element guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. Normally acceptable noise levels are defined as satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Conditionally acceptable noise levels indicate that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction with closed windows and fresh air supply systems or air conditioning will normally suffice. The Santee General Plan states

that these compatibility guidelines are not prohibitive but should be used as a guide and a resource.¹ Additionally, the Santee General Plan Noise Element contains the following objectives and policies that are applicable to new development in the City (City of Santee 2003):

- **Objective 1.0.** Control noise from sources adjacent to residential, institutional and other noise-sensitive receptors.
 - **Policy 1.1:** The City shall support a coordinated program to protect and improve the acoustical environment of the City including development review for new public and private development and code compliance for existing development.
 - **Policy 1.2:** The City shall utilize noise studies and noise contour maps when evaluating development proposals during the discretionary review process.
 - **Policy 1.4:** The City shall promote alternative sound attenuation measures rather than traditional wall barrier wherever feasible; these may include glass or polycarbonate walls, berms, landscaping, and the siting of noise-sensitive uses on a parcel away from the roadway or other noise source.
 - **Policy 1.5:** The City shall review future projects with particular scrutiny regarding the reduction of unnecessary noise near noise-sensitive areas such as hospitals, schools, parks, etc.
- **Objective 2.0.** Ensure that future developments will be constructed to minimize interior and exterior noise levels.
 - **Policy 2.1:** The City shall adhere to planning guidelines and building codes which include noise control for the exterior and interior living space of all new residential developments within noise impacted areas.
 - **Policy 2.2:** The City should require new development to mitigate noise impacts to existing uses resulting from new development when: 1) such development adds traffic to existing City streets that necessitates the widening of the street; and 2) the additional traffic generated by new development causes the noise standard or significance thresholds to be exceeded.
 - **Policy 2.3:** The City should not require new development to mitigate noise impacts to existing uses when new development only adds traffic already anticipated by the City's General Plan to an existing street, but does not necessitate widening of that street.

Table 4.12-6. Santee General Plan Land Use Compatibility Guidelines (Ldn)

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50–65	65–70	70–75	75–85
Residential – Multiple Family	50–65	65–70	70–75	75–85

¹ See page 7-14 of the Santee General Plan Noise Element in Section 8.1, Local Regulations.

Table 4.12-6. Santee General Plan Land Use Compatibility Guidelines (Ldn)

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Transient Lodging – Motel, Hotels	50–65	65–70	70–80	80–85
Schools, Libraries, Churches, Hospitals, Nursing Homes ¹	50–65	65–70	70–80	80–85
Auditoriums, Concert Halls, Amphitheaters	50–60	60–70	NA	70–85
Sports Arenas, Outdoor Spectator Sports	50–65	65–75	NA	75–85
Playgrounds, Neighborhood Parks	50–70	NA	70–75	75–85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–75	NA	75–80	80–85
Office Buildings, Business Commercial, and Professional	50–70	70–75	75–85	NA
Industrial, Manufacturing, Utilities, Agriculture	50–75	75–80	80–85	NA

Source: City of Santee 2003.

Notes: Ldn = day-night Noise Level; NA = not applicable

¹ Applies to noise-sensitive areas which serve a significant function for the use which could be adversely affected by noise such as outside areas used primarily for instruction, meditation areas, rest and relaxation areas, and other areas where general peace and quiet are important.

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features must be included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

The Noise Element further states that when new development may result in the exposure of existing or future noise-sensitive uses to noise levels in excess of 65 dBA Ldn, an acoustical study will be required. If the acoustical study shows that the noise levels at any noise-sensitive area will exceed 65 dBA Ldn, the development should not be approved unless the following findings are made:

- Modifications to the development have been, or will be made, which will reduce the exterior noise levels in noise-sensitive areas to 65 dB Ldn or less, or
- If, with current noise abatement technology, it is not feasible to reduce the exterior noise levels to 65 dBA Ldn or less, then modifications to the development have been, or will be made, which reduce the exterior noise level to the maximum extent feasible and the interior noise level to 45 dB Ldn or less. Particular attention shall be given to noise-sensitive spaces such as bedrooms.
- For rooms in noise-sensitive areas which are occupied only for a part of the day (schools, libraries, or similar), the interior 1-hour average sound level during occupation, due to noise outside, should not exceed 45 dBA Leq.

Further, noise impacts shall be considered significant if any of the following occur as a result of the proposed development:

1. If, as a direct result of the proposed development, noise levels for any existing or planned development will exceed the noise levels considered compatible for that use as identified in Table 4.12-6.
2. If, as a direct result of the proposed development, noise levels which already exceed the levels considered compatible for that use are increased by 3 dB or more.

Section 8.0, Implementation, of the Noise Element lists the following measures that may be incorporated into a proposed project as mitigation measures. The following measures are not always required, and mitigation is not limited to this list:

1. The use of site design techniques, such as the provision of buffers to increase distances between the noise source and receiver, siting of buildings and parking areas, and the careful siting of noise-sensitive outdoor features to minimize noise impacts
2. Provision of berms, landscaping, and other sound barriers, without the exclusive use of walls (e.g., a combination of a small wall and a berm in concert with the overall streetscape in the area could be appropriate)
3. Insulation of buildings against noise, including thicker-than-standard glazing and mechanical ventilation
4. Improvement of traffic circulation to “smooth” flow by such measures as interconnecting traffic signals
5. Consideration of the use of innovative construction technologies and materials in constructing or reconstructing streets
6. Setting of time limits on certain noisy activities
7. Purchasing of demonstrably quiet equipment for City use

City of Santee Noise Ordinance

The City’s Noise Ordinance is found in Chapter 5.04 of the Santee Municipal Code (City of Santee 2020). Section 5.04.040, which establishes the City’s noise regulation, generally prohibits nuisance noise and states that it is unlawful for any person to make, continue, or cause to be made or continued within the City limits any disturbing, excessive, or offensive noise that causes discomfort or annoyance to reasonable persons of normal sensitivity residing in the area. This section details several specific sources of nuisance noise and outlines how it may be determined that the noise is in violation of the code. Specific sources of nuisance noise include, but are not limited to, devices for producing or reproducing sound, drums and other musical instruments, yelling, and animals.

Section 5.04.160 limits noise between 10:00 p.m. and 7:00 a.m. from sources that are not specifically addressed in the City’s Noise Ordinance, or exempted from the ordinance, to levels that do not exceed average conversational levels at a distance of 50 feet from the property line

from which the noise is being generated, or 50 feet from the source in a public area. The typical noise level for normal conversation is 65 dBA at 3 feet from the source (Caltrans 2013a).

Section 5.04.090, which specifically pertains to construction equipment, makes operation of any construction equipment outside the hours of 7:00 a.m. through 7:00 p.m., Monday through Saturday, except holidays, unlawful unless the operation is expressly approved by the Director of Development Services. Construction equipment with a manufacturer's noise rating of 85 dBA Lmax or greater may only operate at a specific location for 10 consecutive workdays. If work involving such equipment would involve more than 10 consecutive workdays, a notice must be provided to all property owners and residents within 300 feet of the site no later than 10 days before the start of construction. The notice must be approved by the City and describe the proposed project and the expected duration of work and provide a point of contact to resolve noise complaints.

The following noise sources are exempt in Section 5.04.170 of the City's Noise Ordinance:

A. Sporting, Entertainment, Public Events:

1. Reasonable sounds emanating from school band, school athletic, and school entertainment events;
2. Sporting, entertainment and public events which are conducted pursuant to a license or permit issued by the City for which noise has been a consideration;
3. Reasonable sounds emanating from a sporting, entertainment, or public event; provided, however, it is unlawful to exceed the average noise level at or within the property lines of any property which is developed and used either in part or in whole for residential purposes unless an exception has been granted allowing sounds in excess of the levels.

B. Agricultural Operations. Equipment associated with agricultural operations may not exceed the average noise level, provided that all equipment and machinery powered by internal-combustion engines is equipped with a proper muffler and air intake silencer in good working order; and provided further, that:

1. Motorized farm equipment operations do not take place between 7 p.m. and 7 a.m.;
2. Such operations and equipment are used to protect or salvage agricultural crops during periods of potential or actual frost damage or other adverse weather conditions; or
3. Such operations and equipment are associated with agricultural pest control through pesticide application, provided the application is made in accordance with all applicable laws, regulations and permits.

City of Santee Zoning Ordinance

Section 13.30.030 of the Zoning Ordinance, Performance Standards, applies to operation of land uses and states that no operation or activity is permitted which will create vibration noticeable without instruments at the perimeter of the subject property.

County of San Diego Noise Ordinance

Sensitive receptors east of the project site are in the unincorporated County. Chapter 36.404 of the County Municipal Code establishes hourly average sound level limits for non-construction noise. The daytime (7:00 a.m. to 10:00 p.m.) hourly average sound level limit for low-density residential areas is 50 dBA, and the nighttime (10:00 p.m. to 7:00 a.m.) hourly average sound limit is 45 dBA.

Section 36.409 of the County's Noise Ordinance establishes the following limit on construction: Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated that exceeds an average sound level of 75 dB for an 8-hour period between 7:00 a.m. and 7:00 p.m. when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

4.12.3 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to noise if it would:

- **Threshold 1:** 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.
- **Threshold 2:** Generate excessive groundborne vibration or groundborne noise levels.
- **Threshold 3:** 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, expose people residing or working in the project area to excessive noise levels.

4.12.4 Method of Analysis

The analysis of noise is based on the Noise Technical Report (Appendix L) for the proposed project. Impacts related to potential exposure to excessive noise levels from operation of the proposed project have been assessed based on a comparison of noise levels anticipated to be generated by the proposed project land uses (see Figure 3-4, Conceptual Land Use Plan, in Chapter 3, Project Description) to the applicable City noise standard for existing off-site receptors. Estimated noise levels are based on a variety of sources, including noise technical reports for similar facilities. Noise levels at a particular receptor from a stationary noise source are based on an attenuation rate of 6 dBA for every doubling of distance. The compatibility of the proposed land uses with existing ambient noise levels is based on a comparison of the results of the ambient noise survey and existing traffic noise calculations to the Santee General Plan Land Use Compatibility Guidelines and the proposed project land uses.

The potential for implementation of the proposed project to permanently increase ambient noise levels as a result of increased traffic was assessed using standard noise modeling equations adapted

from the Federal Highway Administration (FHWA) noise prediction model. The modeling calculations take into account the posted vehicle speed, ADT volume, and the estimated vehicle mix. The noise model assumes that roadways would experience a decrease of approximately 3 dBA for every doubling of distance from the roadway. Traffic data is provided in the project-specific traffic study prepared by LLG(Appendix N). Noise modeling for construction and operation assumes the Fanita Ranch Specific Plan (City of Santee 2020) design speed of 50 miles per hour for Fanita Parkway from Mast Boulevard to Ganley Street and for Cuyamaca Street from Mast Boulevard to Woodglen Vista Drive. This assumption is conservative because the posted speed limits of 40 miles per hour on Fanita Parkway and 35 miles per hour on Cuyamaca Street may be maintained by the City following project implementation.

Impacts related to temporary increases in ambient noise levels from construction of the proposed project were assessed using estimates of sound levels from typical construction equipment provided by the FHWA in the Roadway Construction Noise Model (RCNM) (FHWA 2008), assuming an attenuation rate of 6 dBA per doubling of distance from the source. Impacts related to rock crushing and blasting activities resulting from construction were assessed using reference noise levels provided by noise analyses for similar equipment use (Shasta County 2011; FHWA 2006).

Groundborne vibration impacts were assessed based on the FTA vibration impact criteria listed in Table 4.12-5 and typical vibration source levels provided by the FTA (2018).

Impacts related to aircraft noise were assessed based on a review of published noise contours and planning documents for area airports (SDCRAA 2010, 2011).

4.12.5 Project Impacts and Mitigation Measures

4.12.5.1 Threshold 1: Exceedance of Noise Standards

Would implementation of the proposed project 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?

Impact: The proposed project would have the potential to generate substantial temporary noise during construction and permanent increases in ambient noise levels during operation.

Mitigation: Construction Access Road Speed Limitations (NOI-1), Vendor Trip Route Limitations (NOI-2), Roadway Construction Notification (NOI-3), Nighttime Noise Sound Management Plan (NOI-4), Special Use Area Noise Measures (NOI-5), Noise Barrier Installation (NOI-6), On-Site Ambient Noise Exposure (NOI-7)

Significance Before Mitigation: Potentially significant.

Significance After Mitigation: Significant and unavoidable (permanent increase in traffic noise levels); less than significant (construction and project operation).

Impact Analysis

The proposed project would have the potential to generate excessive noise levels as defined in Table 4.12-3, as a result of increases in traffic volumes, developing new stationary sources of noise, and by increasing human activity throughout the project site. Proposed potential noise-generating land uses on site include commercial uses, agricultural uses, and public uses, including parks. The proposed project would also have the potential to result in temporary increases in noise levels during construction.

This analysis focuses on the potential for existing off-site sensitive receptors to be exposed to noise or vibration levels in excess applicable thresholds. CEQA is intended to protect the existing environment from impacts that would result from the proposed project. Generally, CEQA does not consider impacts of the existing environment on a proposed land use to be significant (see Section 15126.2 of the CEQA Guidelines). Likewise, sensitive receptors proposed as part of the proposed project are not part of the existing environment, and impacts to these receptors from implementation of other project components are not addressed. The exception is the analysis of consistency with the Santee General Plan. The Santee General Plan Noise Element specifically states that a significant impact would occur if noise levels at any planned development site would exceed the noise levels considered compatible for that use as identified in Table 4.12-6. Therefore, the potential for ambient noise levels to impact the proposed project is addressed in the context of demonstrating consistency with the Santee General Plan.

Construction Impacts

Construction of the proposed project would have the potential to result in temporary noise level increases as a result of increased traffic volumes and the operation of heavy equipment. The potential for these sources to result in a significant temporary noise increase is addressed below.

Construction Traffic Noise

Construction of the proposed project would have the potential to temporarily increase ambient noise levels as a result of increased traffic noise. Existing traffic volumes without construction, and Near-Term volumes without construction, are provided in the traffic impact analysis prepared by LLG (Appendix N). In addition, traffic construction volumes are provided by the Air Quality Analysis prepared by LSA (Appendix C1). Grading cut and fill would be balanced on the project site. Construction equipment would remain on the site once it has arrived. Therefore, off-site truck noise during these activities would be minimal. However, daily worker trips and vendor truck trips would be required and would have the potential to temporarily increase ambient noise levels.

The highest volumes of construction vehicle trips are anticipated during building construction activities. During building construction, approximately 1,099 worker trips and 312 vendor trips are estimated daily for Phase 1. These volumes are assumed as the worst-case scenario for Phase 1 construction. Following Phase 1, when operation and construction would potentially overlap, the worst-case scenario for building construction trips would occur during Phase 4. The worst-case construction traffic scenario was determined based on daily truck traffic because truck trips are the primary noise concern for vehicle noise impacts. Approximately 838 worker trips and 235 vendor trips are estimated daily during building construction activities in Phase 4. Worker trips and vendor trips calculated by the California Emissions Estimator Model for the Air Quality Analysis are based on the amount of building construction required (residential units or square footage) during each phase (Appendix C1). These estimates are anticipated to be conservative. For example, calculations based on projected material requirements provided by the applicant estimate that daily vendor trips on certain days would be less than 20 one-way trips per day (Appendix L).

During the other construction activities (e.g., grading, paving, coating) during all phases, a maximum of 150 worker trips and no vendor trips are anticipated. A substantial temporary increase would occur if construction trips would result in an ambient noise level that would exceed the applicable exterior land use compatibility criteria, or would result in an increase of more than 3 dBA if the roadway already exceeds the standard without the addition of construction traffic. During Phase 1 of construction, all construction trips would access the project site via Fanita Parkway because the extensions to Cuyamaca Street and Magnolia Avenue would not be completed prior to this phase. Therefore, the existing analysis does not include the off-site segments of Cuyamaca Street and Magnolia Avenue north of Mast Boulevard that are anticipated to serve the proposed project's operational traffic. The analysis of Near-Term conditions assumes that the Cuyamaca Street and Magnolia Avenue extensions would be accessible following Phase 1 and that construction trips may use any roadway. Following Phase 1, the analysis conservatively assumes 100 percent of construction traffic on each segment of Fanita Parkway, Cuyamaca Street, and Magnolia Avenue. This represents a worst-case scenario for Cuyamaca Street and Magnolia Avenue because construction traffic is anticipated to primarily access the site from Fanita Parkway.

Existing + Construction Scenario

Table 4.12-7 provides the estimated traffic noise levels for Phase 1 construction activities other than building construction, including site preparation, grading, paving, utilities installation, and surface improvements. Table 4.12-8 provides estimated traffic noise levels compared to existing noise levels during the building construction period of any phase. As shown in Table 4.12-7, no significant increase in traffic noise levels would occur during construction activities other than building construction during Phase 1. However, as shown in Table 4.12-8, the additional construction traffic that would occur during the building construction phase would cause a significant increase in traffic noise levels on two segments of Fanita Parkway. Therefore, building construction would result in a temporary significant increase in traffic noise to existing receptors on two roadway segments.

Near-Term + Interim Operation + Construction Scenario

Following completion of Phase 1, area roadways would experience an increase in vehicle trips as a result of incremental increases in operational trips, as well as construction traffic through project buildout. The Near-Term + Interim Operation + Construction Scenario assumes 50 percent of traffic volumes from full operation of the proposed project to determine whether construction would result in a significant temporary increase in noise level compared to noise levels without construction. Table 4.12-9 provides the estimated traffic noise levels for interim operation and construction activities other than building construction compared to Near-Term noise levels without the proposed project. Table 4.12-10 provides estimated traffic noise levels compared to Near-Term noise levels during a building construction period and interim operation. Normal construction activities from a later phase would have the potential to overlap with normal construction or building construction from a previous phase. A scenario, that includes interim operation with a simultaneous normal construction period and building construction period was modeled and is included in Appendix L. Impacts were the same as those identified in Table 4.12-10. As such, Table 4.12-10 also represents potential impacts from potential overlap in construction phases.

As shown in Table 4.12-9 and Table 4.12-10, compared to existing conditions, noise levels on several roadways would experience a significant increase in noise level in the Near-Term + Interim Operation + Construction scenario. However, these increases would be primarily attributable to the increase in permanent operational traffic rather than construction traffic. As shown in Table 4.12-9, no significant impacts associated with construction traffic noise would occur during activities without building construction. As shown in Table 4.12-10, construction traffic noise levels during building construction would result in temporary significant noise impacts on one segment of Fanita Parkway and two segments of Magnolia Avenue.

Table 4.12-7. Existing + Construction Traffic Noise Levels (Construction Activities Other than Building Construction)

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (dBA Ldn)	Exceeds Threshold Without Construction?	Existing + Construction (dBA Ldn)	Increase in Noise Level from Existing	Significant Impact?
Mast Boulevard	SR-52 to West Hills Parkway	70	71	Yes	71	0	No
	West Hills Parkway to Medina Drive	65	70	Yes	70	0	No
	Pebble Beach Drive to Fanita Parkway	65	70	Yes	70	0	No
Mission Gorge Road	SR-125 to Fanita Drive	70	77	Yes	77	0	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	77	0	No
Fanita Parkway	On-Site Portion to Ganley Road	65	Does Not Exist	No	47	NA	No
	Ganley Road to Lake Canyon Road	65	59	No	62	+3	No
	Lake Canyon Road to Mast Boulevard	65	61	No	64	+3	No
	Mast Boulevard to Carlton Oaks Drive	65	58	No	59	+1	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	69	Yes	69	0	No
SR-52	Santo Road to Mast Boulevard	70	76	Yes	76	0	No

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level; NA = not applicable; SR- = State Route

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

The existing scenario represents conditions in 2018. Noise levels are calculated at 50 feet from roadway centerline, except SR-52 (100 feet from centerline due to roadway width). Noise levels are based upon traffic data provided by LLG (Appendix N) and LSA (Appendix C1). Traffic levels for each roadway are included in Appendix D of EIR Appendix L. Decibel levels are rounded to the nearest whole number. See Appendix D of EIR Appendix L for data sheets. Assumes 100 percent of construction traffic would access the site using Fanita Parkway; therefore, Cuyamaca Street and Magnolia Avenue are not included in the table.

Table 4.12-8. Existing + Building Construction Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (dBA Ldn)	Exceeds Threshold Without Construction?	Existing + Construction (dBA Ldn)	Increase in Noise Level from Existing	Significant Impact?
Mast Boulevard	SR-52 to West Hills Parkway	70	71	Yes	72	+1	No
	West Hills Parkway to Medina Drive	65	70	Yes	71	+1	No
	Pebble Beach Drive to Fanita Parkway	65	70	Yes	71	+1	No
Mission Gorge Road	SR-125 to Fanita Drive	70	77	Yes	78	+1	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	77	0	No
Fanita Parkway	On-Site Portion to Ganley Road	65	Does Not Exist	No	64	NA	No
	Ganley Road to Lake Canyon Road	65	59	No	67	+8	Yes
	Lake Canyon Road to Mast Boulevard	65	61	No	68	+7	Yes
	Mast Boulevard to Carlton Oaks Drive	65	58	No	64	+6	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	69	Yes	70	+1	No
SR-52	Santo Road to Mast Boulevard	70	76	Yes	76	0	No

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level; NA = not applicable; SR- = State Route

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

The existing scenario represents conditions in 2018. Noise levels are calculated at 50 feet from roadway centerline, except SR-52 (100 feet from centerline due to roadway width). Noise levels are based upon traffic data provided by LLG (Appendix N) and LSA (Appendix C1). Traffic levels for each roadway are included in Appendix E of EIR Appendix L. Decibel levels are rounded to the nearest whole number. Significant impacts shown in **bold** and **shading**. See Appendix E of EIR Appendix L for data sheets. Assumes 100 percent of construction traffic with access the site via Fanita Parkway; therefore, Cuyamaca Street and Magnolia Avenue are not included in the table.

Table 4.12-9. Near-Term + Interim Operation and Construction Traffic Noise Levels (Construction Activities Other than Building Construction)

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Interim Operation and Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Operation + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Mast Boulevard	SR-52 to West Hills Parkway	70	72	Yes	72	73	+1	No
	West Hills Parkway to Medina Drive	65	70	Yes	71	71	0	No
	Pebble Beach Drive to Fanita Parkway	65	70	Yes	71	71	0	No
Mission Gorge Road	SR-125 to Fanita Drive	70	77	Yes	78	78	0	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	77	77	0	No
Fanita Parkway	On-Site Portion to Ganley Road	65	Does Not Exist	No	63	64	+1	No
	Ganley Road to Lake Canyon Road	65	60	No	67	67	0	No
	Lake Canyon Road to Mast Boulevard	65	61	No	68	68	0	No
	Mast Boulevard to Carlton Oaks Drive	65	59	No	60	61	+1	No

Table 4.12-9. Near-Term + Interim Operation and Construction Traffic Noise Levels (Construction Activities Other than Building Construction)

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Interim Operation and Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Operation + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Cuyamaca Street	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	64	64	0	No
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	61	61	0	No
	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	61	61	0	No
	Chaparral Drive to Woodglen Vista Drive	65	54	No	65	65	0	No
	Woodglen Vista Drive to El Nopal	65	62	No	68	68	0	No
	El Nopal to Mast Boulevard	65	65	No	70	70	0	No
	Mast Boulevard to River Park Drive	65	69	Yes	69	69	0	No
	River Park Drive to Town Center Parkway	65	70	Yes	70	70	0	No
	Town Center Parkway to Mission Gorge Road	65	72	Yes	73	73	0	No

Table 4.12-9. Near-Term + Interim Operation and Construction Traffic Noise Levels (Construction Activities Other than Building Construction)

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Interim Operation and Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Operation + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	60	60	0	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	64	64	0	No
	Woodglen Vista Drive to El Nopal	65	66	Yes	68	68	0	No
	El Nopal to Mast Boulevard	65	68	Yes	69	69	0	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	69	Yes	70	70	0	No
SR-52	Santo Road to Mast Boulevard	70	76	Yes	76	76	0	No

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level; SR- = State Route

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

The existing scenario represents conditions in 2018. Noise levels are calculated at 50 feet from roadway centerline, except SR-52 (100 feet from centerline due to roadway width).

Noise levels are based upon traffic data provided by LLG (Appendix N) and LSA (Appendix C1). Traffic levels for each roadway are included in Appendix D of EIR Appendix L.

Decibel levels are rounded to the nearest whole number. See Appendix D of EIR Appendix L for data sheets. Assumes 100 percent of construction traffic with access the site via Fanita Parkway.

¹ In increase attributable to construction is the increase in noise level from Near-Term + Interim Operation to Near-Term + Interim Operation + Construction

Table 4.12-10. Near-Term + Interim Operation and Building Construction Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Project + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Mast Boulevard	SR-52 to West Hills Parkway	70	72	Yes	72	73	+1	No
	West Hills Parkway to Medina Drive	65	70	Yes	71	72	+1	No
	Pebble Beach Drive to Fanita Parkway	65	70	Yes	71	72	+1	No
Mission Gorge Road	SR-125 to Fanita Drive	70	77	Yes	78	78	0	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	77	78	+1	No
Fanita Parkway	On-Site Portion to Ganley Road	65	Does Not Exist	No	63	66	+3	Yes
	Ganley Road to Lake Canyon Road	65	60	No	67	69	+2	No
	Lake Canyon Road to Mast Boulevard	65	61	No	68	70	+2	No
	Mast Boulevard to Carlton Oaks Drive	65	59	No	60	64	+4	No

Table 4.12-10. Near-Term + Interim Operation and Building Construction Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Project + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Cuyamaca Street	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	64	66	+2	No ²
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	61	65	+4	No
	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	61	65	+4	No
	Chaparral Drive to Woodglen Vista Drive	65	54	No	65	68	+3	No ³
	Woodglen Vista Drive to El Nopal	65	62	No	68	70	+2	No
	El Nopal to Mast Boulevard	65	65	No	70	71	+1	No
	Mast Boulevard to River Park Drive	65	69	Yes	69	70	+1	No
	River Park Drive to Town Center Parkway	65	70	Yes	70	71	+1	No
	Town Center Parkway to Mission Gorge Road	65	72	Yes	73	74	+1	No

Table 4.12-10. Near-Term + Interim Operation and Building Construction Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term (dBA Ldn)	Exceeds Threshold Without Construction?	Near-Term + Interim Operation (dBA Ldn)	Near-Term + Interim Project + Construction (dBA Ldn)	Increase Attributable to Construction ¹	Significant Additional Impact?
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	60	64	+4	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	64	67	+3	Yes
	Woodglen Vista Drive to El Nopal	65	66	Yes	68	69	+1	Yes
	El Nopal to Mast Boulevard	65	68	Yes	69	70	+1	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	69	Yes	70	70	0	No
SR-52	Santo Road to Mast Boulevard	70	76	Yes	76	77	+1	No

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level; NA = not applicable; SR- = State Route

Unless otherwise noted, a substantial temporary increase in vehicle traffic noise would occur if implementation of the proposed project construction would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded without the addition of construction traffic, an increase of more than 3 dBA attributable to construction traffic would be considered significant.

Noise levels are calculated at 50 feet from roadway centerline, except SR-52 (100 feet from centerline due to roadway width). Noise levels are based upon traffic data provided by LLG (Appendix N) and LSA (Appendix C1). Traffic levels for each roadway are included in Appendix E of EIR Appendix L. Decibel levels are rounded to the nearest whole number. Significant impacts shown in **bold** and **shading**. See Appendix E of EIR Appendix L for data sheets. Assumes 100 percent of construction traffic with access the site via Fanita Parkway.

¹ In increase attributable to construction is the increase in noise level from Near-Term + Interim Operation to Near-Term + Interim Operation + Construction

² The nearest residences, located on Summit Avenue, are located more than 900 feet east of the centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

³ Existing noise wall would reduce noise to an acceptable level.

Construction Equipment Noise

Construction of the proposed project would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Sound levels from typical construction equipment range from 60 dBA to 90 dBA Leq at 50 feet from the source (FHWA 2008). Noise from construction equipment generally exhibits point source acoustical characteristics. Strictly speaking, a point source sound decays at a rate of 6 dBA per doubling of distance from the source. The rule applies to the propagation of sound waves with no ground interaction.

Temporary construction activity noise would be considered significant if it would violate the limits established in Section 5.04.090 of the City's Noise Ordinance. The ordinance prohibits operation of any construction equipment outside the hours of 7:00 a.m. through 7:00 p.m., Monday through Saturday, excluding legal holidays, without approval from the Director of Development Services. Also, construction equipment with the potential to exceed 85 dBA at the construction site shall not be operated at the same location for more than 10 consecutive workdays without notification to properties within 300 feet of the site.

Standard equipment, such as dozers, loaders, graders, backhoes, scrapers, and miscellaneous trucks would be required for most construction days. Some blasting may be required and is described separately below. Noise levels from construction on the project site were determined based on typical equipment noise levels determined by the RCNM (FHWA 2008). A semi-portable rock crushing/processing facility is anticipated to be used for aggregate plant operations during on-site grading activities so that excavated material may be used on site rather than exported. Temporary aggregate plant operations are anticipated to be stationed in the northern portion of Fanita Commons during Phase 1 and Phase 2 of construction, in approximately the middle of the eastern boundary of Vineyard Village during Phase 3, and in approximately the northeast corner of Vineyard Village during Phase 4. Based on estimated noise levels for a quarry project that would include rock crushing and processing, noise levels from these activities would be approximately 85 dBA at a distance of 100 feet from equipment (91 dBA at 50 feet) (Appendix L). The eight noisiest pieces of construction equipment (excavator, dozer, grader, dump truck, loader, scraper, rock crusher, and aggregate processing plant²) that could be required for on-site construction were assumed to operate in the same location, and would have the potential to generate noise levels up to approximately 92.7 dBA at 50 feet from the construction site. These estimates are conservative because construction equipment for a single construction activity would likely be spread out over several acres.

² The RCNM model does not include an option for rock crushing or processing. Sand blasting equipment, which is estimated to have an Lmax of 95.7 at 50 feet, is conservatively assumed to represent this equipment.

Standard construction operation would have the potential to exceed 85 dBA at the construction site for more than 10 consecutive workdays, and would require notification in accordance with the City's Noise Ordinance (City of Santee 2020). However, the bulk of construction activities would occur within the three proposed villages, which would be separated from existing development by the Habitat Preserve. The closest sensitive receptors to the villages are located approximately 850 feet east of the proposed Vineyard Village boundary along Oak Creek Drive in the unincorporated County. Construction of phases would have the potential to overlap. However, due to the distance between the villages, it would be unlikely for noise from simultaneous construction to be simultaneously audible at a given receptor. Additionally, off-site residences would continue to be located outside the 300-foot notification boundary. Therefore, typical construction activities within the villages would not require construction notification because no City receptors would be located within the 300-foot notification boundary. Additionally, at this distance, noise levels from worst-case construction with rock crushing would attenuate to 68 dBA and would not exceed the County's Noise Ordinance limit of 75 dBA for construction. Construction within the villages would take place during the allowable City Noise Ordinance hours of 7:00 a.m. to 7:00 p.m. A significant impact would not occur to off-site receptors during the on-site construction of Phase 1 (Fanita Commons and the easterly portion of Orchard Village), or during construction of Phases 2, 3, or 4. The timing of the construction of Magnolia Avenue will be tied to the certificate of occupancy of the 1,500th equivalent dwelling unit³ in the proposed project; however, the exact date of this is unknown.

However, on-site and off-site construction of Phase 1 would include development of new segments and improvements to Fanita Parkway and Cuyamaca Street, including the widening of Fanita Parkway north of Lake Canyon Drive, which would include construction adjacent to existing residential areas and near the campground at Santee Lakes Recreation Preserve. Construction of Magnolia Avenue would also be adjacent to existing residential and school areas. Additionally, dead-end roadway improvements along the southern boundary of the site in the existing neighborhood north of Mast Boulevard would potentially require some heavy construction equipment. Construction for roadway improvements would be linear and the active construction area would be much smaller than on-site land development. For roadway improvements, the four noisiest pieces of construction equipment (excavator, dozer, loader, and scraper) that are assumed for paving operations were anticipated to operate simultaneously in the same location. Construction of new segments and improvements to Fanita Parkway and Cuyamaca Street would have the potential to generate noise levels up to approximately 85 dBA at 50 feet from the construction area (Appendix L).

³ Equivalent dwelling unit is a unit of measure that defines impact relative to a typical single-family residence. For the purposes of the Traffic Impact Analysis (Appendix N), every 8.91 daily trips that a proposed use would generate would be its dwelling unit equivalent.

Operation of heavy equipment during roadway construction would potentially create a substantial short-term noise increase affecting residences near the construction site and notification would be required to comply with the City's Noise Ordinance. 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, and the condition of the equipment. The average sound level of the construction activity also depends upon the amount of time that the equipment operates and the intensity of the construction during the time period. Construction activities are anticipated to occur during the City's allowable hours of operation; however, some nighttime construction within roadways may be required to avoid traffic impacts. Existing residences are located within 300 feet of the construction areas along Fanita Parkway, Cuyamaca Street, and Magnolia Avenue, and dead-end roadway improvements on the southern boundary of the site. Because construction would be linear, individual receptors may not be exposed to construction noise for 10 consecutive workdays. However, operation of heavy equipment during construction would have the potential to create substantial short-term noise increases that require notification, and nighttime construction may be required that would conflict with the City's Noise Ordinance without approval from the Director of Development Services. This impact would be potentially significant.

Blasting Operation

Blasting may be required at locations in the development area (Hunsaker & Associates 2020). Construction blasting generates a maximum noise level of approximately 94 dB at a distance of 50 feet that is very short in duration (FHWA 2006). Drilling would also be necessary to bore holes for the blasting materials. Rock drills generate noise levels of approximately 85 dBA at a distance of 50 feet (FHWA 2006) and may be in operation for several hours in a day. It is anticipated that no more than one blast would occur in one area per day. However, even if more than one blast would occur in any one area per day, several hours would pass between blasts because of the time required to drill the holes and insert and connect the blasting materials.

Drilling and blasting are not anticipated to occur in the same area for more than 10 consecutive workdays. Additionally, the residences closest to village development are approximately 850 feet east of the proposed Vineyard Village boundary near Oak Creek Drive in the unincorporated County. At this distance, noise levels from blasting would be reduced to 69 dBA and would not exceed the County's Noise Ordinance limit of 75 dBA for construction noise. There are no existing City receptors within the 300 feet notification boundary for construction noise impacts. Additionally, drilling and blasting would occur during daytime hours. Therefore, temporary noise impacts as a result of drilling and blasting in the village development area would be consistent with the Noise Ordinance, and impacts would be less than significant.

Operational Impacts

The proposed project would include a range of uses that have the potential to generate noise that may affect existing noise-sensitive receptors. These uses include commercial and retail development, residential development, agricultural operations, special events, recreational facilities, maintenance activities, a school, a fire station, Special Uses, and on-site infrastructure. Figure 4.12-3, Noise Receptors and Sources, summarizes the potential on-site noise sources and distance to the nearest NSLUs that are addressed below.

Commercial Development

Proposed commercial development would be located primarily in the areas designated as Village Center on the eastern side of Fanita Commons and in the middle of Vineyard and Orchard Villages. The Village Center component would comprise a total of approximately 36.5 acres across the site. The approximately 28-acre Village Center in Fanita Commons would accommodate commercial uses to serve the entire proposed development. The smaller Village Center areas in Vineyard and Orchard Villages would consist of smaller-scale mixed-use retail, service, or office spaces to serve the residents of the surrounding villages. Allowable uses would include retail stores, offices, retail nursery, restaurants, live entertainment establishments, craft breweries or other gourmet food shops, studios and galleries, pet services, business or trade schools, civic uses, health and wellness services, private recreation facilities, religious or spiritual facilities, daycare, tutoring facilities, museums or cultural facilities, and education or event facilities associated with the Farm.

The future mix of retail and office uses is currently unknown, along with the specific noise producing equipment associated with each use. The noise level generated by commercial uses on site would vary depending upon the specific types of commercial uses that would occupy available space. The exact noise level generated cannot be specifically quantified at this time because of many variables involved. These include the specific land use type, size of equipment, location and orientation of equipment, number and location of loading docks, and parking areas. Therefore, it is not possible to determine the level of noise impact of individual commercial uses at specific locations at this time. Thus, this analysis focuses on typical noise produced from commercial development including heating, ventilation, and air conditioning (HVAC) equipment; commercial truck deliveries at loading docks; parking lots; and evening or nighttime noise from dining or entertainment uses at worst-case distances from NSLUs. These noise sources are addressed below.

The specifications and locations of the HVAC systems that would be installed at commercial or mixed-use buildings are unknown at this time. Therefore, for the purposes of this analysis, it is assumed that the HVAC systems of a mixed-use commercial and residential project would be typical of a community-serving retail and office building (Appendix L). HVAC units not installed within an enclosure would have the potential to generate a noise level of up to 79 dBA Leq at the unit (approximately 3 feet). A single HVAC unit could have the potential to generate noise that may exceed

typical conversation noise levels of 65 dBA up to 15 feet from the unit. As shown on Figure 4.12-3, the nearest existing NSLUs to the proposed Village Center areas on the project site are the off-site single-family residences located off Oak Creek Drive, approximately 2,090 feet east of the Village Center planned for Vineyard Village. Due to distance and intervening structures and topography, noise from HVAC units in the proposed Village Centers would not be audible at existing, off-site receptors and impacts would be less than significant.

In addition to HVAC systems, commercial land uses also have the potential to generate noise from truck deliveries, such as engines idling and beeping from back up warning signals at commercial loading docks. Truck trips to the proposed project site would involve deliveries of supplies and products to commercial uses. State law (13 CCR 2485) currently prohibits heavy-duty diesel delivery trucks from idling more than 5 minutes. Therefore, noise from idling would be limited to 5 minutes during truck deliveries. Noise levels measured at a typical loading dock registered 78 dBA Leq at a distance of 5 feet outside an open loading dock (Appendix L). A loading dock that generates a noise level of 78 dBA at 5 feet would have the potential to generate noise that may exceed typical conversational noise levels of 65 dBA up to 25 feet from the unit. Noise levels would be reduced on the project site because the Land Use and Development Regulations in Chapter 3 of the Fanita Ranch Specific Plan require loading areas to be designed and located to minimize impacts on adjoining properties, including use of sound baffling. Additionally, as previously stated, the nearest existing NSLUs to a proposed Village Center are residences approximately 2,090 feet east of the Village Center planned for Vineyard Village. Due to design guidelines, distance, and intervening structures and topography, impacts to off-site NSLUs related to truck deliveries and loading would be less than significant.

Noise sources from parking areas include car alarms, door slams, radios, and tire squeals. These sources typically range from about 51 to 66 dBA at a distance of 10 feet (Appendix L), and are generally short-term and intermittent. Parking lots have the potential to generate noise levels that are audible above ambient levels depending on the location of the source; however, noise sources from a parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect noise-sensitive receptors at the same time. Similar to truck delivery noise, due to distance and intervening structures and topography, impacts to the nearest off-site NSLUs related to parking areas would be less than significant.

Noise from human activity within outdoor seating areas, restaurants, and public gathering places would be limited to normal conversation noise levels, which would generally be consistent with the City's Noise Ordinance and Santee General Plan Noise Element compatibility standards for surrounding land uses. However, the proposed project would accommodate restaurant uses and live entertainment venues that would have the potential to result in intermittent noise that could exceed Noise Ordinance standards. This may include bars or nightclubs that operate into late night hours (10:00 p.m. to 2:00 a.m.). Section 4.12.090 of the Santee Municipal Code prohibits music at dancehalls between 2:00 a.m. and 11:00 a.m. If these establishments would include outdoor areas,

nighttime use could result in loud conversation or amplified music that would be annoying or disturbing to nearby residents. Section 3.2.11.10(B) of the Fanita Ranch Specific Plan establishes performance standards for the sale of alcohol on the project site. These standards require that all alcoholic beverages sales, offerings, and consumption be conducted completely within an enclosed building on premises, except for permitted outdoor seating areas. Nighttime uses would mostly be located within enclosed buildings, although permitted patios may result in crowds or amplified sound that would exceed normal conversation levels. As shown on Figure 4.12-3, the nearest existing off-site NSLUs to a proposed Village Center are residences approximately 2,090 feet away in the unincorporated County. Reference noise levels for loud conversation and amplified music are available for indoor noisy restaurants (85 dBA) and school dances (100 dBA) (Center for Hearing and Communication 2020). Based on these reference noise levels, noise levels from loud conversation and amplified music in the proposed Village Center would be reduced to approximately 28 dBA and 43 dBA, respectively, at 2,090 feet away at the nearest off-site NSLUs. These noise levels would not exceed normal conversation levels at City receptors and would not exceed the County's nighttime hourly average sound level limit of 45 dBA at residences along Oak Creek Drive. Impacts would be less than significant.

Residential Development

A variety of residential densities would be accommodated in all three development villages. Noise generated from residential uses is generally described as nuisance noise. Nuisance noise is defined as intermittent or temporary neighborhood noise from sources such as amplified music, barking dogs, and landscape maintenance equipment that may be disturbing to receptors. Nuisance noise impacts are more likely to occur in higher density areas (such as Village Center and Medium Density Residential areas). Section 5.04.040 of the City's Noise Ordinance prohibits nuisance noise. Specific sources of nuisance noise covered by the City's Noise Ordinance include, but are not limited to, devices for producing or reproducing sound, drums and other musical instruments, yelling, and animals. Compliance with the City's Noise Ordinance would limit exposure to excessive nuisance noise. The County Sheriff's Department enforces the nuisance noise provisions of the City's Noise Ordinance, in accordance with Section 5.04.180 of the City's Noise Ordinance, Enforcement. Nuisance noises would also be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect receptors at the same time. Nuisance noise would be a less than significant impact.

Residences may include HVAC units. As described previously for commercial uses, a single HVAC unit would generally not exceed typical conversation noise levels of 65 dBA beyond 15 feet from the unit. The nearest existing off-site receptors to a proposed residential area are the existing residences along Crazy Horse Drive in the County, approximately 700 feet east of Vineyard Village. Therefore, due to distance and the intermittent nature of noise sources, HVAC noise from proposed residential neighborhoods would not result in significant impact to existing receptors.

Agricultural Operations

The Farm is a central feature of the proposed land use plan. The working farm is planned to include terraced vegetable fields, pasture lands, limited housing for employees, raised gardens, and small-scale animal husbandry. Regular agricultural-related events would be hosted at the Farm, including commercial and educational events. Other special events at the proposed event barn on the Farm are addressed below. The 27.3-acre Farm would be located along the eastern border of Fanita Commons near the center of the proposed development. Additional agricultural areas are designated at the entrances to Vineyard Village on either side of Street “V” and Street “W.” Community gardens and community-supported agriculture are allowable land uses in all proposed development areas except the Special Use area. Orchards, vineyards, and crops are allowed in the Open Space designation.

Based on the noise survey conducted on March 5, 2019, and discussion with the farm operations manager (Farmer D Consulting, pers. comm. 2018), the primary sources of noise associated with agricultural use would be use of one or two tractors in agricultural fields and approximately two utility task vehicles (UTVs) across the Farm site. Fans, pumps, and generators may also be required. The proposed community-scale Farm would not require the use of industrial farm equipment for harvesting or processing. As observed at the Coastal Roots Farm in Encinitas, hand tools would generally be used on the Farm and would not generate noise. Equipment used in agricultural spaces outside the Farm, such as community gardens, would be limited to hand tools.

Regular events at the Farm would include farmers markets and farm-based education in the form of tours, volunteer opportunities, camps, workshops related to gardening and farmer training, nutrition, cooking, herbal medicines, home preservation of food, and more. Farmers market and educational activity hours would be limited of 7:00 a.m. and 7:00 p.m. on weekdays and 7:00 a.m. and 10 p.m. on weekends and are anticipated to be similar to nearby commercial uses in the Village Center. With the exception of farm equipment, noise associated with orchards and vineyards, regular events, and limited employee housing would be generally limited to normal conversation and occasional nuisance noise, similar to noise anticipated from surrounding proposed residential development, described previously.

The design plan for the Farm includes a condition of operation that the use of mechanical equipment such as tractors, exhaust fans, circulating pumps, or generators, and other exterior noise-generating operations that result in a 1-hour average sound level of 50 dB or more, as measured at the nearest adjacent on-site residential property line, shall be limited to the hours of 7:00 a.m. and 7:00 p.m. every day (Appendix L). Noise barriers shall be installed around any stationary noise-generating equipment if necessary to meet the required limitations. A tunnel would be constructed under Street “W” to connect the two sections of the Agricultural Overlay to allow for the movement of agriculture equipment to and from the Farm. Because conditions of

operation would limit noise from farm equipment to less than nuisance levels on the project site, noise levels would be less than significant levels at existing sensitive receptors.

The use of UTVs and tractors are anticipated to generate the highest equipment noise levels from farm operation. The average noise level for UTVs for farm use is 86 dBA and the average noise level for a tractor is 92 dBA (Appendix L). Noise level is reported at the driver's seat. Noise levels from UTVs would be reduced to below normal conversation levels of 65 dBA approximately 35 feet from the source, and tractors approximately 70 feet from the equipment. Additionally, when UTVs are in use, they would be in motion across the Farm and individual receptors would only be exposed to UTV noise briefly during any given pass-by. Due to the modest size of the orchards and vineyards, duration of tractor use would be limited to a portion of a day, when needed. Therefore, use of farm equipment would not result in a significant impact.

The Farm would primarily be cultivated with crops but may include limited livestock, such as poultry, sheep, goats, or aquaponics (fish). Livestock would not exceed five animals per acre. Livestock noise would include intermittent animal noises that may occasionally be a source of nuisance noise. Intermittent poultry noise was observed during the March 5, 2019, noise survey at Coastal Roots Farm in Encinitas. Poultry activity consisted of several chickens roaming the property and was similar to the level anticipated for the proposed Farm. Noise levels with poultry noise did not exceed 54 dBA. However, poultry at the Farm may also include roosters. Rooster crowing can produce sound levels up to 100 dBA at 1 meter (3.3 feet) (Claes et al. 2018). The nearest existing receptors to the Farm are along Summit Avenue, approximately 2,290 feet from the Farm (see Figure 4.12-3). At this distance, noise from rooster crowing would be reduced to 43 dBA and would not exceed typical ambient noise levels. Due to the limited number of animals allowed, and because animals would be spread out across the pasture area throughout the day, intermittent animal noise would not be anticipated to exceed average ambient community noise levels. Regular Farm operations are not anticipated to be audible off site. A significant impact would not occur from Farm operation.

Special Events

The Farm is planned to include a large iconic barn that would set the architectural theme of the community and provide a venue for special events and farm operations. The Farm would allow for a range of special events including farm-to-table events, community harvests, weddings, and other celebrations and festivals, such as pumpkin patches. Special events would potentially involve the use of amplified noise or crowds that would result in noise levels above typical conversation levels. As a condition of operation, events would be permitted between the hours of 7:00 a.m. and 7:00 p.m. on weekdays and 7:00 a.m. and 10:00 p.m. on weekends. Therefore, weekday events would not result in nighttime noise impacts, and weekend events would not extend into late night hours. The event barn and associated outdoor event areas would be located directly east of the Village Center, approximately

3,090 feet from the nearest existing residences, located along Summit Avenue (see Figure 4.12-3). Activity hours for events would be similar to the commercial uses in the Village Center.

Special and temporary event attendance would be limited to a maximum of 300 attendees. The reference noise level for the events anticipated to occur at the Farm is taken from a noise analysis conducted for the Point View Master Plan Project in the City of Rancho Palos Verdes, which included a similar venue for hosting public and private events. The event area was an existing outdoor ceremony area with the capacity for 300 guests, including weddings, corporate parties, conferences, and charity events (Appendix L). Therefore, the analysis for the similar event venue is considered representative of weddings or other special events proposed at the Farm. To determine the impact of the event venue on the community, the representative noise analysis for the Point View Master Plan project recreated a maximum capacity event at the venue and recorded noise levels. The study determined that crowd noise from 300 guests could generate noise levels of up to 101 dBA at approximately 10 feet from the source. Crowd noise would be intermittent, such as at the end of speeches during a ceremony. The Initial Study/Mitigated Negative Declaration for the Point View Master Use Plan Project determined that crowd noise would generally not exceed 15 minutes in a 60-minute period (City of Rancho Palos Verdes 2013).

Based on the results of the analysis for the similar event venue, and conservatively assuming the existing measured ambient noise level is approximately 41 dBA in the Farm area, events attended by 300 guests would have the potential to result in a 1-hour average noise level of 95 dBA at 10 feet from the source. Event noise would have the potential to exceed the average conversation noise level of 65 dBA up to 315 feet from the event. As shown on Figure 4.12-3, the nearest existing NSLUs to the event area are the residences along Summit Avenue, approximately 3,090 feet south of the event area. Therefore, event noise would not exceed the noise level limits at off-site NSLUs. This impact would be less than significant.

Recreational Facilities

The proposed project would provide a variety of recreational opportunities, including the Community Park, Neighborhood Parks, Mini-Parks, and trails throughout the project site. According to the Santee Municipal Code, Section 8.08.150, parks are permitted to operate dawn to dusk or such alternative hours as designated by the Director of the Community Services Department. Therefore, it is assumed that all proposed recreational facilities would have similar operating hours from dawn to dusk, with the exception of trails. Trails would be available at all hours for transportation and access in the development area; however, nighttime use of open space primitive trails would be limited because lighting is not proposed. Recreational facilities are addressed by type below.

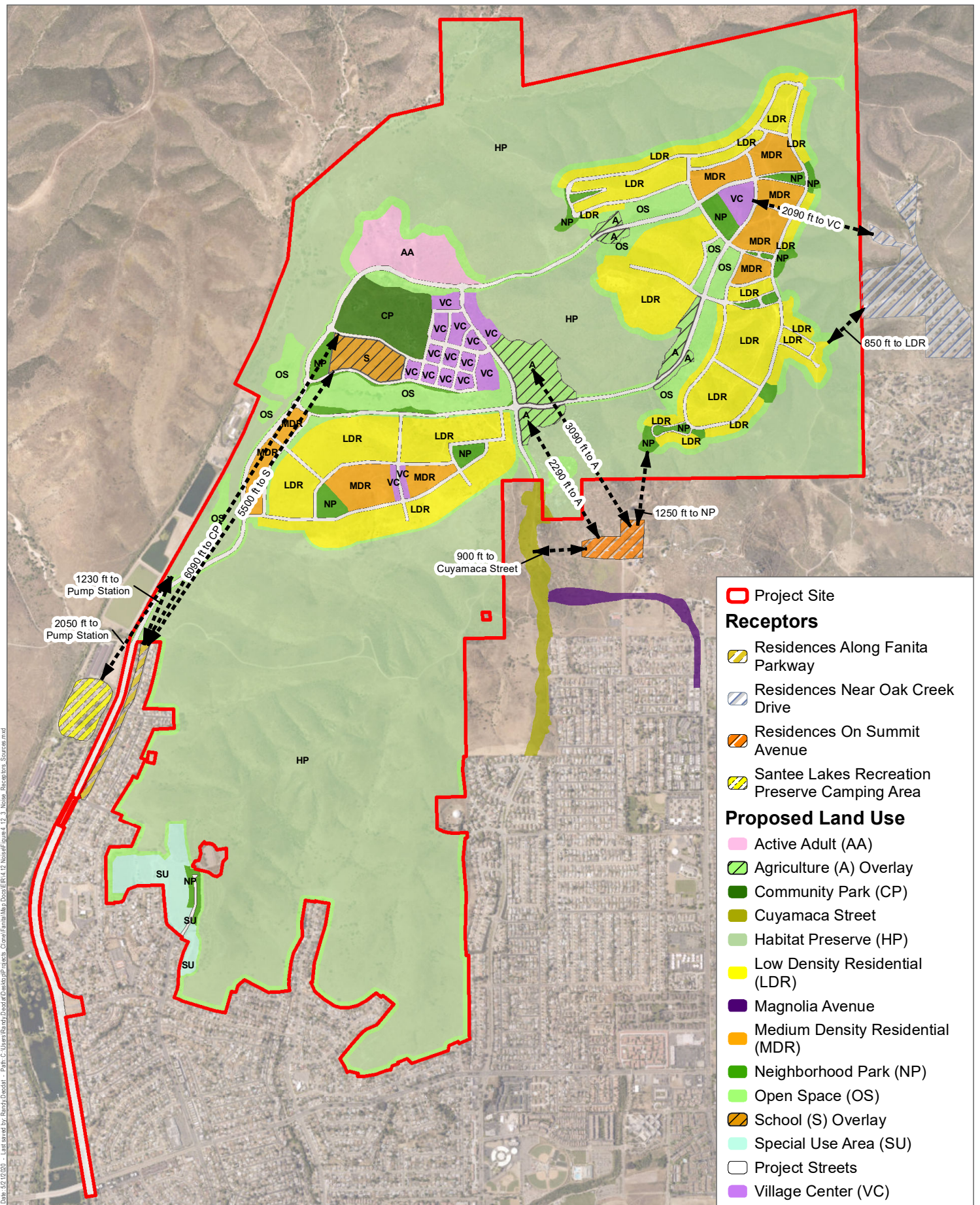
Community Park. Visitors to the Community Park in the center of Fanita Commons would participate in active and passive recreational activities. The Community Park would include two

multipurpose ballfields, sport courts, restrooms, parking, playground, open play areas, and passive picnicking areas, and may include an aquatic element, community gathering plaza, and a dog park. Within the Community Park, a community center would provide multipurpose, flexible spaces to support recreation, learning, arts and crafts, social, and service functions. The community center would also provide support spaces such as staff offices, reception area, restroom, and storage areas. The park is designed so that passive uses would occupy the eastern portion of the Community Park, adjacent to the Village Center. The northern edge of the park would be bordered by a designated Open Space riparian area. Active uses would be concentrated in the southwestern portion of the park, including lighted sports fields adjacent to the proposed school.

Recreational activity participants are expected to generate a range of noise levels typical of recreational activities. Active uses such as playgrounds and sports fields typically generate incidental recreational noise such as cheering for sports activities or children at play. Passive recreational activities such as walking, reading, and dining in open turf and picnic areas typically generate lower noise levels as compared to active sports play.

Noise levels typically generated by multipurpose fields, one of the most active proposed uses, are assumed to be representative of worst-case noise levels from daily use of the Community Park. The noise impact analysis for the City of Lake Forest Sports Park and Recreation Center, which proposed a similar mix of active and passive uses, including multiple sports fields and play areas, determined that noise levels from simultaneous use of the sports fields would generate noise levels of 47 dBA at approximately 400 feet from the fields, or 59 dBA at 100 feet (City of Lake Forest 2010). Similarly, the noise analysis for a new 4-acre sports field complex in San José determined that average noise levels resulting from active use of the fields would be approximately 60 dBA at a distance of 100 feet from the center of the field, with maximum noise levels from shouting as high as 67 dBA (Illingworth & Rodkin 2016). The active Community Park uses would be located at the far west edge of development on the project site, and active uses would be located more than 6,000 feet from existing residences on Strathmore Drive, which are the nearest existing NSLU (see Figure 4.12-3). Due to distance, activity at the park would be reduced to below an audible level at the nearest existing receptors. Impacts would be less than significant.

Electronic amplification equipment would not be permanently installed at any of the parks, but temporary systems may be used in conjunction with permitted active sports leagues or events. Public events may also occur that require temporary permitted amplified noise. Activities that require permitted amplified noise would be limited to normal park operation hours in compliance with the Santee Municipal Code, Section 8.08.150. Additionally, amplified noise would not be a constant source of noise. Activities would occur on various dates and times and at varied locations, and would typically not occur after dusk, in conformance with the Santee Municipal Code. Therefore, use of amplified noise from permitted uses would not result in a significant impact.



Source: Fanita Ranch Specific Plan 2020; SanGIS Imagery 2017.



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Future uses at the community center are unknown; however, activities would be enclosed within the center and would not be anticipated to generate excessive noise outside the facility. It can be reasonably assumed that the community center would require an HVAC unit. As described under the discussion of commercial development, HVAC equipment would have the potential to generate noise that may exceed conversational noise levels up to 15 feet from the unit. Due to distance, operation of the HVAC system at the community center would not be audible at the nearest off-site NSLUs located along Fanita Parkway, more than 6,000 feet from the proposed Community Park (see Figure 4.12-3). Additionally, the Community Park would be separated from off-site receptors by on-site development that would provide a noise barrier to further attenuate noise levels. This impact would be less than significant.

Neighborhood Parks. Eight Neighborhood Parks are proposed throughout all three villages, as shown on Figure 3-6, Conceptual Park, Trails, and Open Space Plan. Specifically, Neighborhood Parks 1 and 2 would be located between Medium Density Residential and Low Density Residential development in Orchard Village. Neighborhood Park 3 would be located adjacent to the riparian open space feature between Fanita Commons and Orchard Village. Neighborhood Park 4 would be located along the western edge of Vineyard Village. Parks 5 and 6 would be located on either side of the Village Center in Vineyard Village. Neighborhood Park 7 would be located at the southern edge of Vineyard Village, and 8 would be located adjacent to the School Overlay in Fanita Commons. Neighborhood Parks may be active-recreation oriented, or non-sports use oriented with more passive uses. Sports-oriented Neighborhood Parks would include amenities similar to the Community Park, but at a smaller scale, including open play fields, playgrounds, sport courts, gardens, picnic facilities, and restrooms. Neighborhood Park 5 adjacent to the Village Center in Vineyard Village would be a sports-oriented park, while Neighborhood Park 3 adjacent to the riparian area along Street “A” in Orchard Village would be a passive Linear Park. It is unknown which of the remaining Neighborhood Parks would be sports-oriented. Passive Neighborhood Parks would not be expected to generate noise other than general conversational levels and would not be expected to be audible outside of the park. However, noise levels for use of sports-oriented Neighborhood Parks are conservatively assumed to be 47 dBA at approximately 400 feet, as estimated for the Community Park described previously. The nearest off-site receptors to a Neighborhood Park are the residences located at the northern terminus of Summit Avenue, approximately 1,250 feet south of the proposed Neighborhood Park at the southwestern boundary of Vineyard Village. Due to distance, noise from the use of the Neighborhood Parks would not be audible off site. Noise impacts from Neighborhood Parks would be less than significant.

Other Recreational Facilities. Additional parks and trails would be located throughout the site, including Mini-Parks and trails such as the AgMeander circuit. The proposed trails would be used for walking and bicycling. Mini-Parks, with the exception of the Village Green discussed below, would include passive recreation features, such as seating, trail connections, and interpretive stations. These amenities would generally not support activities that generate noise levels higher than normal

conservation. Therefore, these facilities would not generate noise levels that would result in excessive noise levels. Impacts from the trails and Mini-Parks would be less than significant.

Village Green. The Village Green would be a special Mini-Park located directly west of the Farm in Fanita Commons that would provide a public gathering and event space. The park would provide a large open turf area, with possible shade trellises and seating along the perimeter. When not in use for community events, the Village Green would provide passive use space for Fanita Commons residents and would not generate excessive noise levels, similar to the other Mini-Parks in the proposed project. However, the turf area would also serve as a multipurpose space to accommodate events such as performances, art fairs, outdoor movies, and other social functions. In addition, it would potentially provide a focal point for larger community festivals and concerts, with connections to the Farm and farmers markets east of Cuyamaca Street, the mixed-use Village Center, and Community Park.

Similar to events at the Farm, regular ongoing events such as community gatherings, farmers markets, and art shows would generally not result in noise levels higher than normal conservation and would be similar to ongoing activity in the Village Center. It is not anticipated that the Village Green would be able to accommodate events with a larger capacity than events at the Farm event area. As discussed previously, special events at the Farm with up to 300 guests, such as weddings, would not result in noise levels that would exceed the City's Noise Ordinance limit of normal conversation levels (65 dBA) during the evening at any off-site NSLUs. Development in the Village Center would also provide a noise buffer between events in the Village Green and development outside the Village Center. As such, because events in the Village Green would be smaller and located farther from off-site receptors than the Farm, events would not be expected to exceed noise level limits at existing off-site NSLUs. This impact would be less than significant.

Trash Collection

Commercial and residential trash hauling would be provided by Waste Management, Inc., under a contractual franchise agreement with the City. Single-family residences would have individual trash and recycling bins subject to weekly pickup. Commercial and multi-family residences would be expected to have on-site garbage and recycling dumpsters that may require multiple pickups per week. As trash service would be provided by Waste Management, Inc., noise associated with operation of refuse collection vehicles is beyond the control of the proposed project. However, Waste Management, Inc., currently operates in Santee and is subject to Section 5.04.130 of the City's Noise Ordinance, Loading and Unloading Operations, which prohibits waste collection vehicles from operating between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance within or adjacent to a residential district. Additionally, individual pickup events would be short in duration and occur at most a few times per week in the vicinity of an individual receptor. Due to its intermittent nature, short duration, and compliance with the City's Noise Ordinance limitations, waste collection in the proposed project would not generate excessive noise levels at the nearest off-site NSLUs. This impact would be less than significant.

Landscape Equipment

Scheduled maintenance would occur on a regular basis across the proposed project, including maintenance of proposed recreational facilities, decorative landscaping, and private residences. Maintenance activities would potentially include the use of gasoline-powered mowers, trimmers, blowers, and edgers resulting in intermittent short-term temporary noise increases. Maintenance equipment would not be operating at any one location for more than a few minutes, and all equipment would not be operating simultaneously. Due to the limited amount of time equipment would be operating in one location, and distance to off-site receptors, operation of landscape equipment would generally not exceed average community ambient noise levels at a particular existing receptor. Therefore, landscape maintenance would result in a less than significant impact.

School

A school site land use overlay is proposed for the western portion of Fanita Commons, south of the proposed Community Park. If acquired by the Santee School District, the site could accommodate up to 700 students. A school would potentially generate amplified noise such as bells and loudspeaker announcements. Bells or other announcements would typically be brief and intermittent throughout the school day. Speaker volume would be audible above typical activity on the campus but not to a level that would be a nuisance or uncomfortable to staff and students on-site in the immediate vicinity of the speakers. As such, the use of the school announcement and bell system would not generate noise levels that would violate the City's Noise Ordinance by exceeding conversational noise levels at the nearest off-site NSLUs.

If developed, a school would also likely include recreational facilities such as playgrounds and play fields. The level of activity during recess and afterschool activities is assumed to be similar to active use of the sports fields at the Community Park, and no amplified speakers would be installed. Therefore, the proposed school would have the potential to generate noise levels up to 47 dBA at approximately 400 feet. Similar to the Community Park, the school site would be located at the western edge of development in the proposed project, approximately 5,500 feet north of the nearest sensitive receptors, located along Strathmore Drive (see Figure 4.12-3). Additionally, the school would be separated from off-site receptors by on-site development that would provide a noise barrier to further attenuate noise levels. Due to distance, activity at the school would not be audible off site at the nearest existing NSLUs. This impact would be less than significant.

Fire Station

A new fire station is proposed in the Village Center in Fanita Commons, although the precise location is currently unknown. Routine operations such as vehicle maintenance and periodic training activities would occur during daytime hours and would not be expected to generate noise levels above ambient noise levels in the active Village Center. Potential nuisance noise impacts of the Fire Station would primarily be limited to on-site emergency address systems and sirens from vehicles leaving the station, although not all emergency calls would require a siren, depending on traffic

conditions. Similar to the school alarm or announcement system, the fire station address system would be set at a volume loud enough to be clear and noticeable to fire station personnel, but not so loud to be harmful or an unnecessary nuisance to neighboring land uses. Additionally, the fire station would be located more than 0.5 mile from any off-site noise-sensitive uses and would not be expected to be audible off-site. Emergency vehicle sirens typically generate a noise level of 124 dBA at 10 feet (Appendix L). As such, individual emergency sirens would be a potential noise nuisance, if required for a particular emergency, but would be short-term and intermittent in nature. Sirens would be less likely to be required at night, when receptors would be more sensitive to siren noise, due to lighter traffic conditions. However, off-site receptors are currently served by emergency services and occasional emergency sirens are an existing part of the ambient noise environment in the City. The occasional response of emergency service vehicles originating from the project site would be similar to existing conditions throughout the City and would not be a significant impact.

Off-Site Improvements

The infrastructure improvements associated with the proposed project include roadway improvements that would not generate operational noise themselves. However, these improvements would accommodate higher traffic volumes associated with the proposed project. The potential noise impacts associated with changes in traffic volume and roadway configuration are addressed under Operational Traffic Noise. Additionally, construction of these improvements was previously addressed.

Special Use Area

The Special Use area is adjacent to an existing residential area on Carlton Hills Boulevard, Swanton Drive, Las Lomas Drive, and Settle Road. The specific use of the Special Use area in the southern area of the project site would be limited to primarily passive uses such as a solar farm, recreational vehicle (RV) and boat storage, aboveground agriculture without irrigation, or other similar uses not exceeding a height of 35 feet. As such, utilization of this area would not be anticipated to generate noise levels at surrounding land uses in excess of average conversation noise levels. Any use of the site would likely include an automatic gate system for access. Newer model gates may generate minimal noise, 56 dBA or below, that would generally not be noticeable to surrounding existing residences (Appendix L). However, because gate specifications are currently unknown and existing receptors are located within 50 feet of the boundary of the Special Use area, this impact is considered potentially significant.

Likely uses for the Special Use area include vehicle or boat storage or a solar facility. RV storage would generate intermittent noise from vehicle loading and unloading. Similar to a parking lot, noise sources would be different from each other in kind, duration, and location. It is unlikely that existing residences in the neighborhood surrounding the Special Use area would be exposed to regular noise in excess of normal conversational levels. A noise analysis for a proposed RV facility in the City of Wildomar included noise monitoring at existing storage facilities. Measured noise sources from vehicle loading and unloading included RV idling, air brake operation, and vehicle movements. The reference measurement results showed a noise level of 62.4 dBA Leq at 50 feet, which is below normal conversation levels (Appendix L). However, due to the close proximity of off-site NSLUs

(within 50 feet of the project site boundary), activities at the Special Use area would be considered a potential nuisance if access would occur during nighttime hours in close proximity to sensitive receptors. Noise levels would have the potential to exceed 65 dBA within approximately 40 feet of pickup and drop-off activities. Assuming a 10 dBA penalty to account for nighttime sensitivity to noise, consistent with Ldn methods, pickup and drop-off noise would have the potential to exceed 55 dBA up to 125 feet from the source. This impact would be potentially significant.

Solar panels are passive; however, the associated inverters or transformers typically generate some noise. The noise is typically described as buzzing or humming white noise. The exact specifications of solar panels, if installed, at the Special Use area are unknown at this time. However, a similar project that proposed solar panels on an over 300-acre site in the County determined that noise levels from inverters and transformers would generate noise levels of up to 60 dBA at 5 feet (County of San Diego 2016). As such, operation of a solar facility on a smaller (approximately-32 acre) site would not be expected to generate noise levels that exceed 65 dBA at existing residences located adjacent to the Special Use area. A more conservative estimate of 70 dBA at 3 feet for transformer noise has also been reported (Appendix L); however, noise levels would still be expected to attenuate to below 65 dBA less than 6 feet from the transformer. The limited impact of solar panels is further evidenced by the County's requirements for solar panels in residential zones; only a 3-foot setback from the property line is required for solar panels (Appendix L). This impact would be less than significant.

As noted, uses in the Special Use area are anticipated to be passive, and daytime impacts from the Special Use area would be less than significant. However, potential nuisance noise from nighttime access at the Special Use area is considered a potentially significant impact.

On-Site Water Infrastructure

Development of the proposed project would involve construction of water infrastructure improvements, including pipelines, storage tanks, and pump stations. Following construction, proposed underground pipelines and aboveground storage tanks would be passive and would not generate operational noise. However, two pump stations are proposed to provide potable water to the project site. One pump station would be located along Fanita Parkway, adjacent to the Santee Lakes Recreation Preserve. The second pump station would be located at the eastern edge of Fanita Commons at Street "W." The size and specifications of the pump stations are currently unknown. A review of a variety of pump stations proposed by PDMWD and other local jurisdictions indicate that typical pump station equipment generates a noise level of approximately 90 dBA at 3 feet (Appendix L). The proposed pump stations would be installed in a masonry enclosure to provide noise shielding to surrounding land uses. A typical equipment enclosure can provide 40 dBA or more of noise reduction (Appendix L). As such, noise levels at each pump station would be approximately 50 dBA. The nearest pump station to existing NSLUs would be approximately 1,230 feet north of residences on Strathmore Drive and approximately 2,050 feet north of the Santee Lakes Recreation Preserve camping area. Even without shielding, at this distance, noise levels would be reduced to 40 dBA or below and impacts would be less than significant.

Open Space Preserve Area

The proposed project would retain 256 acres of Open Space and approximately 1,650.4 acres of Habitat Preserve, primarily along the perimeter of the project site, separating the proposed development area from off-site uses. These areas would be primarily passive, but would include existing and new trails for pedestrians and bicycles. Noise from these activities would be limited to normal conversation levels. Occasional maintenance activities would be required along the trails at the edge of development, such as vegetation and sediment removal; however, these activities would not require heavy construction equipment that would generate excessive noise. Occasional maintenance vehicle trips would not result in a substantial increase in noise levels. Therefore, impacts would be less than significant.

Permanent Increase in Traffic Noise Levels from Project Operation

This section addresses the potential for the proposed project to permanently increase ambient noise levels as a result of increased traffic noise and is based on traffic data provided in the project-specific traffic study prepared by LLG (Appendix N). A substantial permanent increase would occur if implementation of the proposed project were to result in an ambient noise level at 50 feet from the roadway centerline that exceeds the land use compatibility limits (Table 4.12-6) established in the Santee General Plan, including 65 dBA Ldn at the property line for residential properties and schools and 70 dBA Ldn for commercial uses and Neighborhood Parks. For conditions where the roadway exceeds the standard without project implementation, a significant impact would occur if the project would result in an increase of 3 dBA or greater at 50 feet from the roadway centerline. The following presents a conservative analysis since actual noise levels at nearby receptors would decrease based on their distance from the roadway and would vary based on each individual receptor's location.

The potential for the proposed project to permanently increase traffic noise is addressed under the following traffic impact analysis scenarios: Existing + Project Buildout, Near-Term + Project Buildout, and Year 2035 + Project Buildout. The Near-Term scenario assumes development of the proposed project and cumulative development projects. Traffic levels for each roadway are provided in Appendix B of EIR Appendix L.

Existing + Project Scenario

Existing noise levels and future increases in traffic with implementation of the proposed project are provided in Table 4.12-11. As shown in this table, 12 of the 24 existing roadway segments currently generate noise levels at 50 feet from the roadway centerline that exceed applicable thresholds. A significant project-related traffic noise impact would occur on one of these already impacted segments, Magnolia Avenue from Woodglen Vista to El Nopal, because there would be an increase in noise level of 3 dBA Ldn. An additional five roadway segments would be significantly impacted because the project-related traffic noise would cause the existing noise level to exceed the applicable threshold. Therefore, a total of six segments would be significantly impacted.

Table 4.12-11. Existing + Project Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (dBA Ldn)	Exceeds Threshold Without Project?	Existing + Project (dBA Ldn)	Increase in Noise Level from Existing	Significant Impact?
Mast Boulevard	SR-52 to West Hills Parkway	70	71	Yes	72	+1	No
	West Hills Parkway to Medina Drive	65	70	Yes	71	+1	No
	Pebble Beach Drive to Fanita Parkway	65	70	Yes	71	+1	No
Mission Gorge Road	SR-125 to Fanita Drive	70	77	Yes	78	+1	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	77	0	No
Fanita Parkway	On-Site Portion to Ganley Road	65	Does Not Exist	No	66	NA	Yes
	Ganley Road to Lake Canyon Road	65	59	No	69	+10	Yes
	Lake Canyon Road to Mast Boulevard	65	61	No	70	+9	Yes
	Mast Boulevard to Carlton Oaks Drive	65	58	No	61	+3	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	69	Yes	70	+1	No
Cuyamaca Street	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	67	NA	No ¹
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	64	NA	No
	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	64	NA	No
	Chaparral Drive to Woodglen Vista Drive	65	54	No	68	+14	No ²
	Woodglen Vista Drive to El Nopal	65	62	No	69	+7	No ²

Table 4.12-11. Existing + Project Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (dBA Ldn)	Exceeds Threshold Without Project?	Existing + Project (dBA Ldn)	Increase in Noise Level from Existing	Significant Impact?
	El Nopal to Mast Boulevard	65	65	No	71	+6	Yes
	Mast Boulevard to River Park Drive	65	68	Yes	70	+2	No
	River Park Drive to Town Center Parkway	65	70	Yes	71	+1	No
	Town Center Parkway to Mission Gorge Road	70	72	Yes	73	+1	No
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	63	NA	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	66	+6	Yes
	Woodglen Vista Drive to El Nopal	65	66	Yes	69	+3	Yes
	El Nopal to Mast Boulevard	65	68	Yes	69	+1	No
SR-52	Santo Road to Mast Boulevard	70	76	Yes	76	0	No

Source: Appendix L.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level; NA = not applicable; SR- = State Route. Unless otherwise noted, a substantial permanent increase in vehicle traffic noise would occur if implementation of the proposed project would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded without project implementation, an increase of more than 3 dBA would be considered significant.

The existing condition represents conditions in 2018. Noise levels are calculated at 50 feet from roadway centerline, except SR-52 (100 feet from centerline due to roadway width).

Noise levels are based upon traffic data provided by LLG (Appendix N). Traffic levels for each roadway are included in Appendix B of EIR Appendix L. Decibel levels are rounded to the nearest whole number. Significant impacts shown in **bold** and **shading**. See Appendix B of EIR Appendix L for data sheets.

¹ The nearest residences, located on Summit Avenue, are more than 900 feet east of the centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

² Existing noise wall would reduce noise to an acceptable level.

Table 4.12-11 also identifies three segments that exceed applicable thresholds but are not identified as significant. The segment of Cuyamaca Street from the project site to Magnolia Avenue currently does not exist. It would be constructed as part of the proposed project, and noise levels with project operation at 50 feet from the roadway would exceed the applicable threshold of 65 dBA Ldn with implementation of project. However, actual noise levels at the nearest receptors to the impacted segments of Cuyamaca Street would be reduced by distance compared to the estimated noise level in Table 4.12-11. The nearest residences, located on Summit Avenue, are located more than 900 feet east of the centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn and a significant impact would not occur to this segment. Noise levels on Cuyamaca Street from Chaparral Drive to El Nopal would exceed 65 dBA with operation of the proposed project. However, the existing residential subdivision on Cuyamaca Street north of El Nopal was constructed with masonry and glass barriers along the edge of development on Cuyamaca Street that would likely reduce noise levels compared to the estimated noise level in Table 4.12-11. At a minimum, noise barriers that break the line of sight to the source, such as the existing barriers, typically provide at least 5 dBA noise reduction (Caltrans 2013a). Therefore, the existing noise barriers at residences along Cuyamaca Street would reduce the estimated roadway noise level of 68 dBA Ldn on Cuyamaca Street from Chaparral Drive to Woodglen Vista Drive to the acceptable noise level of 63 dBA Ldn and the estimated roadway noise level of 69 dBA Ldn from Woodglen Vista Drive to El Nopal to the acceptable noise level of 64 dBA Ldn. Impacts to these segments would be less than significant.

In summary, as shown in Table 4.12-11, with the addition of project-related traffic, six roadway segments would result in a potentially significant noise impact under the Existing + Project scenario.

Near-Term Scenario

The Near-Term scenario includes development of the proposed project and 55 cumulative projects (Appendix N). Near-Term traffic noise levels, with and without the proposed project, are provided in Table 4.12-12. As shown in this table, 12 of the 24 study area roadway segments would exceed applicable thresholds without implementation of the proposed project.

Significant impacts are identified in Table 4.12-12 for project-related traffic noise increases that would cause noise along a total of five roadway segments on Fanita Parkway, Magnolia Avenue, and Cuyamaca Street to exceed the applicable threshold. A significant impact is also identified for project-related traffic noise that would result in an increase in noise levels of 3 dBA Ldn along one roadway segment of Cuyamaca Street (Woodglen Vista Drive to El Nopal) that would exceed the applicable threshold without project implementation.

Table 4.12-12 also identifies three segments that exceed applicable thresholds but are not identified as significant. Cuyamaca Street from the project site to Magnolia Avenue currently does not exist and would exceed the applicable threshold of 65 dBA Ldn at 50 feet with implementation of project. However, due to distance, the actual noise levels at the nearest receptors to the proposed

Cuyamaca Street alignment would be reduced compared to the noise level shown in Table 4.12-12. The nearest residences, located along Summit Avenue, would be located more than 900 feet east of the proposed centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn and a significant impact would not occur. As previously described, the existing barriers constructed at the subdivision on Cuyamaca Street north of El Nopal would reduce the estimated roadway noise level of 68 dBA Ldn from Chaparral Drive to Woodglen Vista Drive to the acceptable noise level of 63 dBA Ldn and the estimated roadway noise level of 69 dBA Ldn from Woodglen Vista Drive to El Nopal would be reduced to the acceptable noise level of 64 dBA Ldn. Therefore, impacts to these segments would be less than significant.

In summary, six roadway segments would result in a potentially significant noise impact under the Near-Term scenario.

Year 2035 Scenario

The Year 2035 scenario compares buildout of the adopted Santee General Plan and buildout of the Santee General Plan with the proposed project. Year 2035 traffic noise levels, with and without the proposed project, are provided in Table 4.12-13. As shown in this table, 17 of the 24 study area roadway segments would exceed applicable thresholds without implementation of the proposed project.

Table 4.12-13 identifies significant impacts from project-related traffic noise on three segments of Fanita Parkway.

Table 4.12-13 also identifies two segments that would exceed applicable thresholds but are not ultimately identified as significant. Traffic noise on Cuyamaca Street from the project site to Magnolia Avenue would exceed 65 dBA Ldn with project implementation. However, actual noise levels at the nearest receptors to the proposed Cuyamaca Street extension would be reduced compared to the noise level in Table 4.12-13 by distance. These residences along Summit Avenue would be located more than 900 feet from the proposed centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn and a significant impact would not occur to this segment. Project-related traffic noise would result in an increase in noise levels of 3 dBA Ldn along one segment of Cuyamaca Street. As previously described, the existing barriers constructed at the subdivision on Cuyamaca Street north of El Nopal would reduce the estimated roadway noise level of 66 dBA Ldn from Princess Joann Road to Chaparral Drive, and from Chaparral Drive to Woodglen Vista, to the acceptable noise level of 61 dBA Ldn. Therefore, impacts to this segment would be less than significant. Three roadway segments of Fanita Parkway would result in a potentially significant noise impact under the Year 2035 scenario.

Table 4.12-12. Near-Term Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term No Project (dBA Ldn)	Exceeds Threshold Without Project?	Near-Term + Project (dBA Ldn)	Increase in Noise Level from Near-Term No Project	Significant Impact?
Mast Boulevard	SR-52 to West Hills Parkway	70	72	Yes	73	+1	No
	West Hills Parkway to Medina Drive	65	70	Yes	72	+2	No
	Pebble Beach Drive to Fanita Parkway	65	70	Yes	72	+2	No
Mission Gorge Road	SR-125 to Fanita Drive	70	77	Yes	78	+1	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	78	+1	No
Fanita Parkway	On-Site Portion to Ganley Road	65	Does Not Exist	No	66	NA	Yes
	Ganley Road to Lake Canyon Road	65	60	No	70	+10	Yes
	Lake Canyon Road to Mast Boulevard	65	61	No	70	+9	Yes
	Mast Boulevard to Carlton Oaks Drive	65	59	No	62	+3	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	69	Yes	70	+1	No
Cuyamaca Street	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	67	NA	No ¹
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	64	NA	No
	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	64	NA	No
	Chaparral Drive to Woodglen Vista Drive	65	54	No	68	+14	No ²
	Woodglen Vista Drive to El Nopal	65	62	No	69	+7	No ²

Table 4.12-12. Near-Term Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Near-Term No Project (dBA Ldn)	Exceeds Threshold Without Project?	Near-Term + Project (dBA Ldn)	Increase in Noise Level from Near-Term No Project	Significant Impact?
	El Nopal to Mast Boulevard	65	65	No	71	+6	Yes
	Mast Boulevard to River Park Drive	65	69	Yes	70	+1	No
	River Park Drive to Town Center Parkway	65	70	Yes	71	+1	No
	Town Center Parkway to Mission Gorge Road	70	72	Yes	73	+1	No
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	63	NA	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	66	+6	Yes
	Woodglen Vista Drive to El Nopal	65	66	Yes	69	+3	Yes
	El Nopal to Mast Boulevard	65	68	Yes	69	+1	No
SR-52	Santo Road to Mast Boulevard	70	76	Yes	77	+1	No

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level; NA = not applicable; SR- = State Route

Unless otherwise noted, a substantial permanent increase in vehicle traffic noise would occur if implementation of the proposed project would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded without project implementation, an increase of more than 3 dBA would be considered significant.

Noise levels are calculated at 50 feet from roadway centerline, except SR-52 (100 feet from centerline due to roadway width). Noise levels are based upon traffic data provided by LLG (Appendix N). Traffic levels for each roadway are included in the Appendix B of EIR Appendix L. Decibel levels are rounded to the nearest whole number. Significant impacts shown in **bold** and **shading**. See Appendix B of EIR Appendix L for data sheets.

¹ The nearest residences, located on Summit Avenue, are located more than 900 feet east of the centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

² Existing noise wall would reduce noise to an acceptable noise level.

Table 4.12-13. Year 2035 Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Year 2035 No Project (dBA Ldn)	Exceeds Threshold Without Project?	Year 2035 + Project (dBA Ldn)	Increase in Noise Level from Year 2035 No Project	Significant Impact?
Mast Boulevard	SR-52 to West Hills Parkway	70	72	Yes	72	0	No
	West Hills Parkway to Medina Drive	65	71	Yes	72	+1	No
	Pebble Beach Drive to Fanita Parkway	65	71	Yes	72	+1	No
Mission Gorge Road	SR-125 to Fanita Drive	70	78	Yes	78	0	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	78	+1	No
Fanita Parkway	On-Site Portion to Ganley Road	65	64	No	66	+2	Yes
	Ganley Road to Lake Canyon Road	65	65	No	70	+5	Yes
	Lake Canyon Road to Mast Boulevard	65	66	Yes	70	+4	Yes
	Mast Boulevard to Carlton Oaks Drive	65	61	No	62	+1	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	70	Yes	70	0	No
Cuyamaca Street	On-Site Portion to Magnolia Avenue	65	65	No	67	+2	No ¹
	Magnolia Avenue to Princess Joann Road	65	64	No	65	+1	No
	Princess Joann Road to Chaparral Drive	65	65	No	66	+1	No ²
	Chaparral Drive to Woodglen Vista Drive	65	68	Yes	69	+1	No

Table 4.12-13. Year 2035 Traffic Noise Levels

Roadway	Segment	Applicable Threshold (dBA Ldn)	Year 2035 No Project (dBA Ldn)	Exceeds Threshold Without Project?	Year 2035 + Project (dBA Ldn)	Increase in Noise Level from Year 2035 No Project	Significant Impact?
	Woodglen Vista Drive to El Nopal	65	70	Yes	70	0	No
	El Nopal to Mast Boulevard	65	71	Yes	71	0	No
	Mast Boulevard to River Park Drive	65	70	Yes	70	0	No
	River Park Drive to Town Center Parkway	65	71	Yes	71	0	No
	Town Center Parkway to Mission Gorge Road	70	73	Yes	74	+1	No
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	61	No	63	+2	No
	Princess Joann Road to Woodglen Vista Drive	65	66	Yes	68	+2	No
	Woodglen Vista Drive to El Nopal	65	68	Yes	69	+1	No
	El Nopal to Mast Boulevard	65	71	Yes	71	0	No
SR-52	Santo Road to Mast Boulevard	70	77	Yes	77	0	No

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level; NA = not applicable; SR- = State Route

Unless otherwise noted, a substantial permanent increase in vehicle traffic noise would occur if implementation of the proposed project would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded without project implementation, an increase of more than 3 dBA would be considered significant.

Noise levels are calculated at 50 feet from roadway centerline except SR-52 (100 feet from centerline due to roadway width). Noise levels are based upon traffic data provided by LLG (Appendix N). Traffic levels for each roadway are included in the Appendix B of EIR Appendix L. Decibel levels are rounded to the nearest whole number. Significant impacts shown in **bold** and **shading**. See Appendix B of EIR Appendix L for data sheets.

¹ The nearest residences, located on Summit Avenue, are located more than 900 feet east of the centerline of Cuyamaca Street. At this distance, noise levels would be reduced to less than 65 dBA Ldn.

² Existing noise wall would reduce noise to an acceptable level.

Land Use Plan Without School

If the proposed school that is the preferred land use plan analyzed in this EIR is not developed on the project site, the school site would be developed with 59 additional single-family units. Traffic noise levels for the land use plan without school have been analyzed to the same extent as the proposed project and are provided in Appendix C in EIR Appendix L. Traffic noise level impacts under the land use plan without school would be identical to the preferred land use plan with school, with the exception of two segments:

- **Fanita Parkway from Ganley Road to Lake Canyon Road:** Noise levels under the land use plan without school are estimated to be 70 dBA Ldn under the Existing + Project scenario compared to 69 dBA Ldn under the preferred land use plan with school. Long-term noise levels under either land use plan are estimated to be 70 dBA Ldn. A potentially significant impact would occur under either land use plan.
- **Magnolia Avenue from Cuyamaca Street to Princess Joann Road:** Noise levels under the land use plan without school are estimated to be 64 dBA Ldn under the Year 2035 + Project scenario compared to 63 dBA Ldn under the preferred land use plan with school. A significant impact would not occur under either land use plan.

The potentially significant impacts identified previously for the preferred land use plan with school would also occur under the land use plan without school, and no additional significant impacts have been identified for this scenario.

On-Site Exposure to Ambient Noise Levels

This section addresses the potential for on-site sensitive receptors to be exposed to ambient noise levels in excess of the 65 dBA Ldn standard established in the Santee General Plan Noise Element. CEQA is intended to protect the existing environment from impacts that would result from the proposed project. Generally, CEQA does not consider impacts of the existing environment on a proposed land use to be significant (see Section 15126.2 of the CEQA Guidelines). However, the Santee General Plan Noise Element states that a significant impact would occur if noise levels at any planned development site would exceed the noise levels considered compatible for that use as identified in Table 4.12-6. Therefore, the potential for ambient noise levels, primarily from vehicle traffic, to impact the proposed project is addressed below.

As shown in Table 4.12-3, the results of the ambient noise survey reflect daytime noise levels that range between 40 dBA and 60 dBA Leq on the project site. As described previously in Table 4.12-6, a normally acceptable ambient community noise level of up to 65 dBA Ldn is considered compatible with residential developments as specified in the Santee General Plan and is the applicable threshold of significance for NSLUs (City of Santee 2003). An ambient community noise level of up to 70 dBA Ldn is the applicable significance threshold for Neighborhood Parks and commercial buildings. Based on these compatibility guidelines, existing ambient noise levels across the site are compatible with the proposed land uses.

Following development, vehicle noise is anticipated to be the dominant source of ambient noise on the project site. Table 4.12-13 shows future noise levels on the major proposed on-site roadways, including Fanita Parkway (on-site portion to Ganley Road) and Cuyamaca Street (on-site portion to Magnolia Avenue). As shown in Table 4.12-13, traffic noise levels along major roadways would be approximately 66 dBA Ldn at 50 feet from the centerline of Fanita Parkway and 67 dBA Ldn at 50 feet from the centerline of Cuyamaca Street. Ambient noise levels would be compatible with parks and commercial buildings. Noise levels at Fanita Parkway and Cuyamaca Street would attenuate to acceptable levels of 65 dBA Ldn beyond approximately 65 feet of the centerline of Fanita Parkway and 75 feet from the centerline of Cuyamaca Street. Noise levels on other roadways on the project site would serve fewer vehicles and would generate lower noise levels. Additionally, masonry and glass walls are proposed along roadways throughout neighborhoods that would provide additional noise attenuation at receptors. Therefore, noise levels throughout the project site more than 75 feet from Fanita Parkway and Cuyamaca Street would be compatible with the proposed development. However, development within 75 feet of these roadways would be potentially exposed to noise levels in excess of 65 dBA Ldn.

Low Density Residential units proposed along Cuyamaca Street in Orchard Village would be separated from Cuyamaca Street by more than 75 feet and would not be exposed to noise levels above acceptable limits from Cuyamaca Street. However, the Low Density Residential units and Active Adult units that would be located adjacent to Fanita Parkway, and multi-family residential units located adjacent to Cuyamaca Street in the Village Center in Fanita Commons, would potentially be exposed to conditionally compatible noise levels. According to the Santee General Plan, conventional construction with closed windows is typically sufficient for compatibility. However, noise insulation features would potentially be required for these residences for consistency with the Santee General Plan. This on-site impact would be potentially significant.

Mitigation Measures

Implementation of the proposed project would have the potential to result in excessive noise levels as a result of construction activities, potential nighttime nuisance noise at the Special Use area, temporary and permanent increases in ambient noise level, and exposure of proposed NSLUs to noise levels in excess of Santee General Plan compatibility standards.

Construction Noise Mitigation Measures

Temporary Construction Vehicle Noise

The proposed project would result in potentially significant temporary vehicle noise impacts on Fanita Parkway and Magnolia Avenue that would occur during project construction prior to mitigation. Table 4.12-14 provides a summary of the noise levels on the impacted roadways and during which scenarios these impacts would occur.

Mitigation Measure NOI-1 would limit the speed on construction access routes. However, a limit on the maximum number of truck trips on Fanita Parkway during this phase would also be required.

The anticipated increase in noise levels on Fanita Parkway and Magnolia Avenue during interim operation and construction would primarily be a result of the increase in vendor truck trips during building construction. Mitigation Measure NOI-2 would prohibit medium- and heavy-duty truck trips on Magnolia Avenue and require all truck traffic to use Fanita Parkway and Cuyamaca Street only for site access. Vendor truck trips would be allowed but limited on Fanita Parkway. Worker vehicle trips would be allowable on all roadways. Diversion of truck trips from Fanita Parkway and Magnolia Avenue to Cuyamaca Street would not result in an impact to Cuyamaca Street because, as shown in Table 4.12-10, use of Cuyamaca Street for 100 percent of all construction traffic would not result in a significant increase in ambient noise levels. As shown in Table 4.12-15, implementation of Mitigation Measures NOI-1 and NOI-2 would reduce temporary noise impacts to Fanita Parkway and Magnolia Avenue to a less than significant level during building construction.

NOI-1: Construction Access Road Speed Limitations. As a condition of approval for the proposed project, the applicant shall not seek to increase the posted speed limit on Fanita Parkway south of Ganley Road from the existing posted speed limit of 40 miles per hour to the post-project improvement design speed of 50 miles per hour until the building construction phase of Phase 1 is complete. The speed limit for construction-related traffic shall be stipulated in project construction documents, including the grading plans and the contract with the construction contractor. Construction-related traffic shall not exceed existing posted speed limits.

NOI-2: Vendor Trip Route Limitations. During building construction activities, the construction contractor shall prohibit the use of Magnolia Avenue for medium-duty and heavy-duty truck trips. During building construction activities, all trucks shall access the site via Fanita Parkway and Cuyamaca Street only. Additionally, medium- and heavy-duty truck trips shall be limited on Fanita Parkway. Truck trips shall be limited to 170 one-way trips (85 two-way trips) on Fanita Parkway during Phase 1 building construction activities and to a maximum of 140 one-way trips (70 two-way trips) on Fanita Parkway during simultaneous building construction activities and project operation. These requirements shall be included in project construction documents, including the grading plan and the contract with the construction contractor. Prior to issuance of a grading permit, temporary signage prohibiting proposed project truck access shall be installed at the Magnolia Avenue and Mast Boulevard intersection.

Table 4.12-14. Interim Traffic Noise Impacts (Unmitigated)

Roadway	Segment	Scenario When Impact Would Occur	Maximum Noise Level at 50 Feet (dBA Ldn)
Fanita Parkway	On-Site Portion to Ganley Road	• Near-Term + Interim Operation + Building Construction (see Table 4.12-10)	66
	Ganley Road to Lake Canyon Road	• Existing + Building Construction (see Table 4.12-8)	67
	Lake Canyon Road to Mast Boulevard	• Existing + Building Construction (see Table 4.12-8)	68
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	• Near-Term + Interim Operation + Building Construction (see Table 4.12-10)	67
	Woodglen Vista Drive to El Nopal	• Near-Term + Interim Operation + Building Construction (see Table 4.12-10)	69

Source: Appendix L.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Table 4.12-15. Mitigated Interim Traffic Noise Impacts (NOI-1 and NOI-2)

Roadway	Segment	Applicable Threshold (dBA Ldn)	Conditions without Construction (dBA Ldn)	Conditions Exceed Threshold Without Construction?	Mitigated Construction Noise Level (dBA Ldn)	Increase in Noise Level	Significant Impact?
Fanita Parkway	On-Site Portion to Ganley Road (NOI-2)	65	Does Not Exist	No	65	—	No
	Ganley Road to Lake Canyon Road (NOI-1 and NOI-2)	65	59	No	64	+5	No
	Lake Canyon Road to Mast Boulevard (NOI-1 and NOI-2)	65	61	No	65	+4	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive (NOI-2)	65	64	No	65	+1	No
	Woodglen Vista Drive to El Nopal (NOI-2)	65	68	Yes	68	0	No

Source: Appendix L.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

Noise levels are calculated at 50 feet from roadway centerline. Noise levels are based upon traffic data provided by LLG (Appendix N) and LSA (Appendix C1). Traffic levels for each roadway are included in Appendix E of EIR Appendix L. Decibel levels are rounded to the nearest whole number. See Appendix E of EIR Appendix L for data sheets.

Temporary Construction Equipment Noise

Implementation of Mitigation Measures NOI-3 and NOI-4 would reduce temporary construction noise from operation of heavy equipment to a less than significant level.

NOI- 3: Roadway Construction Notification. In accordance with Section 5.04.090 of the Santee Municipal Code, the construction contractor shall provide written notification to any existing uses within 300 feet of roadway construction activities. The notification shall be provided no later than 10 days before the start of construction activities. The notice shall describe the nature of the construction activities, including the expected duration, and provide a point of contact to resolve noise complaints. If a complaint is received, construction noise shall be monitored by a qualified acoustical consultant at the nearest affected receptor for the duration of a normal day of construction. If the hourly average monitored noise level from construction exceeds a normal conversation level (65 A-weighted decibels) at the nearest sensitive receptor or the ambient noise level at the receptor if the ambient noise level exceeds 65 A-weighted decibels, construction activities in the immediate area of the affected receptor shall cease. Construction shall not resume until activities can be adjusted or noise reduction measures are implemented to reduce noise at the affected receptor to below normal conversation levels (65 A-weighted decibels) or the ambient noise level at the receptor if the ambient noise level exceeds 65 A-weighted decibels. Measures to reduce noise shall include but not be limited to the following:

- Stationary construction noise sources, such as temporary generators, shall be located as far from nearby noise-sensitive receptors as possible.
- Trucks shall be prohibited from idling along streets serving the construction site where noise-sensitive residences are located.
- Construction equipment shall be outfitted with properly maintained, manufacturer-approved or recommended sound abatement tools on air intakes, combustion exhausts, heat dissipation vents, and the interior surfaces of engine hoods and power train enclosures.
- Construction laydown and vehicle staging areas shall be positioned (to the extent practical) as far from noise-sensitive land uses as feasible.
- Simultaneous operation of construction equipment shall be limited, or construction time within an hour shall be limited, to reduce the average noise level.
- Temporary noise barriers, such as noise blankets, shall be implemented around the perimeter of the construction area to minimize construction noise at affected receptors.

NOI- 4: Nighttime Noise Sound Management Plan. The construction contractor shall be required to obtain authorization from the Director of Development Services for any construction activities that would occur between 7:00 p.m. and 7:00 a.m. As part of the authorization

process, the construction contractor shall prepare a Sound Management Plan to be included in construction documents, including the grading plan and construction contract. The Sound Management Plan shall include all or a combination of the measures listed in Mitigation Measure NOI-3, as deemed necessary by a qualified acoustical engineer, to minimize noise at nearby receptors. In addition to the measures listed in Mitigation Measure NOI-3, construction activities that must take place between 7:00 p.m. and 7:00 a.m. that could generate high noise levels at residences shall be scheduled during times that would have the least impact on sensitive receptor locations, such as the evening hours between 7:00 p.m. and 10:00 p.m. rather than the nighttime hours between 10:00 p.m. and 7:00 a.m.

Operational Noise Mitigation Measures

Noise Exposure from Special Use Area

The following mitigation measure would eliminate commercial nighttime access in the Special Use area and reduce impacts to a less than significant level.

NOI-5: Special Use Area Noise Measures. The following requirements for the Special Use area shall be included as conditions of approval in the development review permit between the applicant and the City of Santee:

- Any electronic or automatic gate installed at Special Use area access points shall not generate noise levels that exceed 65 A-weighted decibels at the access point. The site operator shall provide specifications from the manufacturer prior to gate installation, and the site operator agreement shall include proper maintenance of the gate. Proper maintenance shall include response within 1 business day to complaints received by the site operator from residents or received from the City as a result of a complaint regarding nuisance noise as a result of disrepair. The response shall detail measures that the site operator will take to address the complaint and a timeline, such as a scheduled maintenance appointment.
- Use of the Special Use area as a storage facility shall limit access to the site to the hours of 7:00 a.m. to 7:00 p.m., with the exception of a special after-hours pickup and drop-off location. Stored property shall be relocated to or from the after-hours location during normal business hours because access to the regular storage facilities shall be restricted to 7:00 a.m. to 7:00 p.m. The after-hours location shall be secured with an additional access gate that can only be opened with a temporary gate code provided through pre-arrangement with the site operator. The after-hours location shall be more than 125 feet from the nearest existing receptors and shall be screened from existing receptors by the regular storage facilities.

Permanent Increase in Vehicle Noise

The proposed project would have the potential to result in significant vehicle noise impacts due to project operation. Table 4.12-16 provides a summary of the permanent vehicle impacts and where they would occur.

Table 4.12-16. Significant Permanent Vehicle Noise Impact Summary

Roadway	Segment	Scenario When Impact Would Occur	Maximum Noise Level at 50 Feet (dBA Ldn)
Fanita Parkway	On-Site Portion to Ganley Road	<ul style="list-style-type: none"> Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable 	66
	Ganley Road to Lake Canyon Road	<ul style="list-style-type: none"> Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable 	70
	Lake Canyon Road to Mast Boulevard	<ul style="list-style-type: none"> Existing + Project Near-Term + Project Year 2035 + Project Cumulatively Considerable 	70
Cuyamaca Street (Silver Country Estates)	El Nopal to Mast Boulevard	<ul style="list-style-type: none"> Existing + Project Near-Term + Project 	71
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	<ul style="list-style-type: none"> Existing + Project Near-Term + Project 	68
	Woodglen Vista Drive to El Nopal	<ul style="list-style-type: none"> Existing + Project Near-Term + Project 	69

Source: Appendix L.

Notes: dBA = A-weighted decibel; Ldn = day-night average sound level

As shown in Table 4.12-16, vehicle noise levels on Fanita Parkway and Magnolia Avenue under all scenarios would be within the conditionally compatible noise level range of 70 dBA Ldn or below for residential development but would exceed the applicable threshold of significance of 65 dBA Ldn (the normally acceptable noise level). Noise levels on the segment of Cuyamaca Street from El Nopal to Mast Boulevard would also potentially exceed the conditionally compatible noise level range. Mitigation Measure NOI-6 requires the installation of a noise barrier on some impacted segments of Fanita Parkway, Cuyamaca Street, and Magnolia Avenue, as shown on Figure 4.12-4, Noise Mitigation Locations. Noise barriers that break the line of sight between receptors and the roadway would provide at least 5 dBA in noise reduction, and additional reductions can be achieved with additional height or material selection. Typical noise barriers constructed for the purpose of reducing vehicle noise can provide 30 dBA of noise reduction (Caltrans 2013a). Appendix L includes a sample noise barrier calculation for Fanita Parkway.

Due to the difference in elevation between the proposed Fanita Parkway improvements and the sensitive receptors at the Santee Lakes Recreation Preserve campground (vertical difference of approximately 12 feet), it is calculated that a 4-foot wall at the western edge of the Fanita Parkway roadway right-of-way for the entire length of the campground would break the line of sight between the source and receptor. Taking distance, change in elevation, and barrier height into account, a 4-foot wall at the roadway right-of-way is calculated to reduce noise levels to 60 dBA Ldn at the nearest campsites (Appendix L). Noise barriers in the roadway right-of-way are anticipated to be feasible on the western side of Fanita Parkway from the project entrance to Mast Boulevard (as mentioned previously), from El Nopal to Mast Boulevard on the eastern side of Cuyamaca Street, and at individual neighborhoods north of El Nopal on Magnolia Avenue.

However, it is not feasible to construct noise barriers on all impacted segments identified in Table 4.12-16 due to existing cross streets, driveways, and differences in grade between the roadways and receptors that would make barriers installed within the roadway right-of-way ineffective. Noise walls up to approximately 20 feet in height in the roadway right-of-way would be required on the eastern side of Fanita Parkway to break the line of sight and provide noise attenuation at adjacent receptors. Noise walls up to approximately 23 feet in height would be required on the western side of Cuyamaca Street (Appendix L). At these heights, noise walls would be visually incompatible with the surrounding community and above the Caltrans maximum noise barrier height of 14 to 16 feet, depending on distance from travel lanes (Caltrans 2019). Additionally, the City's Zoning Ordinance generally limits noise walls to a maximum height of 8 feet (Santee Municipal Code, Section 13.10.050[F][2]). Therefore, noise walls are not considered feasible along these segments of Fanita Parkway and Cuyamaca Street. Additional noise barriers may be feasible on Fanita Parkway and Cuyamaca Street if barriers can be negotiated with private property owners to be installed at existing fence lines rather than in the roadway right-of-way; however, such agreements cannot be guaranteed at this time, and even if some property owners agree, the barriers would need to be continuous across multiple properties to be effective. Therefore, this is not considered to be a feasible mitigation measure. Table 4.12-17 shows project noise levels with implementation of noise barriers on either side of impacted roadways, where feasible.

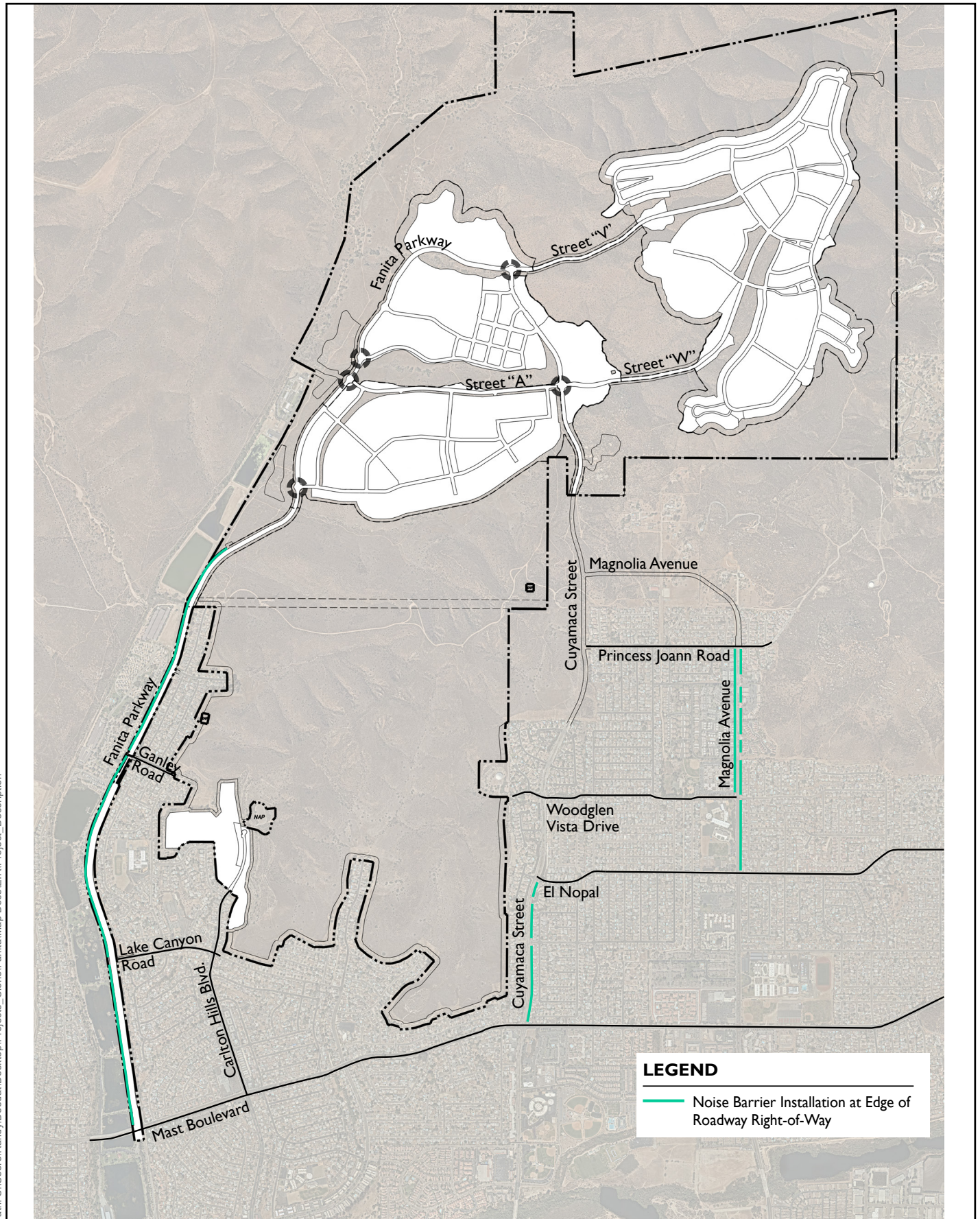
As discussed in Appendix L, the installation of asphalt rubber pavement was considered for mitigation on impacted segments where installation of a noise barrier would not be feasible. Studies have demonstrated that asphalt rubber pavement can reduce on-board sound intensity (noise level where tire meets the pavement) by 3 dBA at the time of installation, although the reduction in sound intensity varied based on material. In some instances, compared to traditional asphalt, asphalt rubber pavement has achieved community noise level reductions of 5 dBA and up to 14 dBA in several case studies. The noise-reducing properties of asphalt rubber pavement cannot be demonstrated with certainty to reduce noise levels to below the threshold of 65 dBA Ldn, and the success of asphalt rubber pavement to reduce noise level varies between available case studies. Additionally, the noise-reducing properties of asphalt rubber pavement deteriorate over time, and the effectiveness of community noise reduction cannot be guaranteed prior to installation. Based on review of available research, it is anticipated that asphalt rubber pavement would require replacement approximately every 7 to 9 years to maintain noise

reduction benefits (Appendix L). This replacement schedule would result in additional impacts compared to regular pavement, which the City currently replaces at an average of every 15 years or more. Unlike traditional pavement, the entire length of asphalt rubber would need to be removed and replaced rather than limiting maintenance to worn areas. More frequent replacement would cause nuisance impacts and disruption from more frequent street closures, additional exposure to construction noise, and additional criteria pollutant and greenhouse gas emissions. Finally, PDMWD has major water and sewer facilities within affected roadways that require frequent maintenance. PDMWD emailed comments to the City on March 10, 2020 (Mael pers comm. 2020), related to the frequency of maintenance and replacement of asphalt rubber pavement, including nuisance noise impacts to Santee Lakes Recreation Preserve campground and undue burden to PDMWD's operations and budget. Therefore, it was determined that the potential adverse impacts of asphalt rubber pavement outweigh potential benefits in this circumstance. After careful consideration, weighing all the factors for the proposed project, the use of asphalt rubber pavement as a mitigation measure to reduce traffic noise levels has been determined to be infeasible. Impacts to some segments of Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would remain significant and unavoidable.

NOI-6: Noise Barrier Installation. A permanent noise barrier shall be installed on the western side of Fanita Parkway from Mast Boulevard to the project site, on the eastern side of Cuyamaca Street from Mast Boulevard to El Nopal, and at individual neighborhoods on Magnolia Avenue north of El Nopal in conjunction with proposed improvements to these roadways. Installation of a noise barrier on Magnolia Avenue may interfere with current access from apartment buildings to the existing sidewalk. In these areas, noise barrier installation would include providing a new walkway adjacent to the wall to provide sidewalk access at existing driveways. The noise barriers shall be designed by a qualified acoustical engineer. The applicant shall submit an analysis to the Director of Development Services prior to the start of construction that demonstrates that the proposed noise barriers would reduce traffic noise exposure at residential receptors to 65-A-weighted-decibel community noise equivalent level or below on Fanita Parkway and Cuyamaca Street. The noise level on Magnolia Avenue is estimated to exceed 65 A-weighted decibels without project traffic. The barrier on Magnolia Avenue shall demonstrate a reduction in noise exposure to a 66-A-weighted-decibel day-night average sound level or below. Noise barriers shall be installed concurrently with the following proposed roadway improvements:

- Extension and widening of Fanita Parkway prior to the commencement of building construction activity on site
- Extension and widening of Cuyamaca Street prior to issuance of the first certificate of occupancy
- Extension of Magnolia Avenue prior to construction and certificate of occupancy of the 1,500th equivalent dwelling unit

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Source: Harris & Associates 2020.



Harris & Associates



0 1000 2000
Feet

Figure 4.12-4
Noise Mitigation Locations

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Table 4.12-17. Permanent Vehicle Noise Impact with Noise Barrier Installation Mitigation

Roadway	Segment	Mitigation	Unmitigated Worst-Case Noise Level (dBA Ldn)	Worst-Case + Project Noise Level with Mitigation (dBA Ldn) ¹	Significant Impact?
Fanita Parkway	On-Site Portion to Ganley Road – western side of street	Noise Barrier Installation (NOI-6)	66	61	No
	On-Site Portion to Ganley Road – eastern side of street	No feasible mitigation	66	66	Yes
	Ganley Road to Lake Canyon Road – western side of street	Noise Barrier Installation (NOI-6)	70	65	No
	Ganley Road to Lake Canyon Road – eastern side of street	No feasible mitigation	70	70	Yes
	Lake Canyon Road to Mast Boulevard – western side of street	Noise Barrier Installation (NOI-6)	70	65	No
	Lake Canyon Road to Mast Boulevard – eastern side of street	No feasible mitigation	70	70	Yes
Cuyamaca Street	El Nopal to Mast Boulevard – western side of street	No feasible mitigation	71	71	Yes
	El Nopal to Mast Boulevard – east side of street	Noise Barrier Installation (NOI-6)	71	65	No
Magnolia Avenue	Princess Joann Road to Woodglen Vista Drive	Noise Barrier Installation (NOI-6)	68	63	No
	Woodglen Vista Drive to El Nopal – residential neighborhoods	Noise Barrier Installation (NOI-6)	69	64	No
	Woodglen Vista Drive to El Nopal – schools	No feasible mitigation	69	69	Yes²

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level

Noise levels are calculated at 50 feet from roadway centerline. Noise levels are based upon traffic data provided by LLG (Appendix N). Traffic levels for each roadway are included in Appendix B of EIR Appendix L. Decibel levels are rounded to the nearest whole number. Significant and unavoidable impacts are shown in **bold** and **shading**. See Appendix B of EIR Appendix L for data sheets.

¹ Due to differences in topography between receptors and roadways along the impacted segments, required noise barrier height and design will vary. As previously stated, at a minimum, a noise reduction of 5 dBA would be achieved, and up to 30 dBA is typical. Table 4.12-17 assumes a 5 dBA reduction, or the minimum noise reduction required to mitigate impacts for the segment of Cuyamaca Street from El Nopal to Mast Boulevard (6 dBA reduction). Final barrier design may achieve higher reductions.

² Due to multiple driveway entrances, noise barriers are not considered feasible for schools located on Magnolia Avenue.

On-Site Noise Compatibility

The following mitigation measures would minimize on-site exposure to noise generated from Fanita Parkway and Cuyamaca Street to achieve Santee General Plan compatibility. According to the Santee General Plan, conventional construction with closed windows and air conditioning is normally sufficient to achieve acceptable interior noise levels. As such, Mitigation Measure NOI-7 requires a detailed analysis to demonstrate that interior noise levels would be at or below 45 dBA Ldn, in accordance with federal and state guidance. Because the design of buildings is currently unknown, this level of analysis cannot be completed at this time. However, according to Caltrans, typical building construction with closed windows reduces interior exposure to exterior noise levels by approximately 30 dBA (Caltrans 2013a). Exterior noise levels are not predicted to exceed 67 dBA Ldn; therefore, it is reasonable to assume that an interior noise level of 45 dBA Ldn could be achieved and impacts would be reduced to a less than significant level with implementation of Mitigation Measure NOI-7.

NOI-7: On-Site Ambient Noise Exposure. Prior to issuance of a building permit for any first-row Low Density Residential units or Active Adult units that would be located adjacent to Fanita Parkway and first-row multi-family residential units located adjacent to Cuyamaca Street in the Village Center, the applicant shall prepare an acoustical analysis ensuring that interior noise levels due to exterior noise sources would be at or below 45-A-weighted-decibel day-night average sound level. The analysis shall be submitted to the Director of Development Services for approval. One or a combination of the following measures shall be incorporated as necessary to ensure interior noise would be at or below 45-A-weighted-decibel day-night average sound level

1. Use non-noise-sensitive structures such as garages to shield noise-sensitive areas
2. Orient bedrooms away from noise sources
3. Limit opening and penetrations on portions of buildings impacted by noise
4. Apply noise insulation to walls, roofs, doors, windows, and other penetrations
5. Enclose patios or balconies using a clear material, such as glass
6. Install dual-paned windows

For some units, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45-A-weighted-decibel day-night average sound level. Consequently, a ventilation or air conditioning system shall be required for these units to provide a habitable interior environment with the windows closed.

4.12.5.2 Threshold 2: Excessive Groundborne Vibration or Noise

Would implementation of the proposed project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Impact: Construction activities may result in substantial temporary increase in groundborne vibration or noise levels.

Mitigation: Roadway Construction Notification (NOI-3), Nighttime Noise Sound Management Plan (NOI-4), Vibration Best Management Practices (NOI-8), Construction Vibration Notification (NOI-9).

Significance Before Mitigation: Potentially significant.

Significance After Mitigation: Less than significant.

Impact Analysis

Groundborne vibration occurring as part of the proposed project would result from construction equipment and blasting. Following construction, the proposed residential and commercial uses would not require heavy equipment anticipated to generate groundborne vibration. However, the use of tractors is anticipated to be required for the proposed Farm and is included in the analysis of heavy equipment below. The City uses the FTA groundborne vibration impact criteria, provided in Table 4.12-5 to determine whether vibration impacts would be significant.

Farm Equipment

Farm use would occur regularly in the limited Farm area; therefore, farm equipment use is subject to the frequent event FTA criteria. The project site is surrounded by residences where people normally sleep (Land Use Category 2). Therefore, operation of farm equipment would result in a significant impact if it would generate vibration levels greater than 72 VdB at the nearest existing residence.

FTA reference vibration levels are not available for the small tractor anticipated for Farm use. The typical vibration level for a small bulldozer provided in Table 4.12-18 is assumed to be representative of small tractor use. As shown in Table 4.12-18, small bulldozer use would not exceed 72 VdB at 25 feet from the source. There are no existing receptors within 25 feet of the proposed Farm area. Therefore, operational impacts from farm equipment would be less than significant.

Construction Equipment

Typical vibration levels for construction equipment required for the proposed project are provided in Table 4.12-18. Vibration levels for operation of a rock crusher are represented by drill operation because the FTA does not provide a specific reference noise level for rock crushing equipment. Construction vibration is subject to the infrequent event criteria because operation of vibration-generating equipment is anticipated to be intermittent throughout the day in the vicinity of an individual receptor. In accordance with the City's Noise Ordinance, construction would generally occur during the daytime and would not disturb sleep. However, residences may be occupied during daytime construction and construction may result in a nuisance to daily activities. Additionally, nighttime construction may be required for roadway improvements. Therefore, an

impact would occur if construction would generate vibration levels greater than 80 VdB at the nearest existing residence.

As shown in Table 4.12-18, vibration levels from all construction equipment would be reduced to 80 VdB or below beyond 75 feet from construction. The residences closest to the boundary of a village development area are approximately 850 feet east of the proposed Vineyard Village boundary near Oak Creek Drive. Therefore, due to distance to the nearest sensitive receptors, construction for on-site land development would not result in potentially significant vibration. However, some residences are located within 75 feet of the construction area for the extensions and off-site improvements to Fanita Parkway, Cuyamaca Street, and Magnolia Avenue, and dead-end roadway improvements at the southern boundary of the site. As shown in Table 4.12-18, at 45 feet from construction, only operation of equipment equal to a vibratory roller would have the potential to exceed the significance criteria of 80 VdB at surrounding land uses during typical construction. Vibration levels would have the potential to exceed the applicable FTA criteria; therefore, construction activities that would require the use of a vibratory roller would have the potential to exceed the vibration impact criteria related to human response and result in a significant impact.

In addition to human annoyance, an impact related to architectural and structural damage to buildings would occur if existing buildings were affected by a PPV in excess of 0.2 in/sec. As shown in Table 4.12-18, vibration levels from vibratory construction equipment would be reduced to below 0.2 in/sec within 45 feet of the construction area. There are no existing structures within 45 feet of construction areas requiring use of vibratory equipment. Therefore, although construction would have the potential to result in significant nuisance impacts, as described previously, project construction equipment would not result in a significant impact related to structural damage.

Blasting

Blasting during construction would be infrequent and subject to the event criteria of 80 VdB at the nearest existing residence. As shown in Table 4.12-18, vibration levels from blasting would be reduced to 80 VdB or below beyond 235 feet from the blast area. No existing receptors are within 235 feet of potential blast areas. Due to distance to the nearest sensitive receptors, blasting would not exceed the applicable FTA criteria and would not result in a potentially significant vibration impact.

Table 4.12-18. Vibration Source Levels for Construction Equipment

Construction Equipment	Approximate PPV/VdB at 25 Feet	Approximate PPV/VdB at 45 Feet ¹	Approximate PPV/VdB at 75 Feet ¹	Approximate PPV/VdB at 235 Feet ¹
Blasting for construction projects	0.400 ² / 109	0.166/ 101	0.077/ 95	0.014/ 80
Large bulldozer	0.089/ 87	0.037/79	0.017/73	0.003/58
Caisson drilling	0.089/ 87	0.037/79	0.017/73	0.003/58
Loaded trucks	0.076/ 86	0.031/78	0.015/72	0.003/57
Small bulldozer	0.003/58	0.001/50	0.001/44	0.0001/29
Vibratory roller	0.21/ 94	0.087/ 86	0.04/ 80	0.007/65

Source: FTA 2018.

Notes: PPV = peak particle velocity; VdB = vibration decibel

For impacts related to human annoyance, the threshold for construction equipment is 80 VdB at the nearest existing residence because use would be temporary and intermittent. Due to ongoing use, the threshold for operation of farm equipment is 72 VdB at the nearest existing residence. Vibration levels up to or that exceed the applicable threshold are in **bold**.

For impacts related to building damage, the threshold is 0.2 in/sec. Vibration levels up to or that exceed the threshold are in *italics*.

¹ Based on attenuation formulas provided by the FTA (2018)

² Source: FRA 2017.

Regarding structural damage to buildings, the details for individual project blasting operations cannot be known at this time, but would comply with applicable specifications prepared by the U.S. Bureau of Mines or Office of Surface Mining and Reclamation Enforcement. The estimated vibration from hard rock blasting for a major rail tunnel construction project has been used as a reference level for this analysis (FRA 2017). As shown in Table 4.12-18, vibration levels from blasting would be reduced to below 0.2 in/sec within 45 feet of the construction area. There are no existing structures within 45 feet of construction areas requiring blasting. Therefore, blasting would not result in a potentially significant impact related to structural damage.

Mitigation Measures

Vibration impacts would be temporary and would cease following construction. Implementation of Mitigation Measures NOI-8 and NOI-9, in addition to Mitigation Measures NOI-3 and NOI-4, would minimize temporary groundborne vibration impacts from construction activities at the nearby receptors. Therefore, impacts related to groundborne vibration during construction would be less than significant after mitigation.

NOI-8: Vibration Best Management Practices. Prior to the commencement of construction activities that would involve use of a vibratory roller (or equivalent equipment) within 75 feet of a residence, the applicant shall retain a qualified acoustician to identify best management practices to be implemented by the construction contractor to reduce vibration levels to below 80 vibration decibels at the nearest residence. The best management practices shall

be included in project construction documents, including the grading plan and contract with the construction contractor. Practices may include but are not limited to the following:

- Use only properly maintained equipment with vibratory isolators
- Operate equipment as far from sensitive receptors as possible
- Use rubber-tired vehicles as opposed to tracked vehicles

NOI-9: Construction Vibration Notification. The construction contractor shall provide written notification to receptors within 75 feet of construction activities at least 3 weeks prior to the start of any construction activities that would require the use of a vibratory roller or equivalent equipment. The notice would inform them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information warning about the potential for impacts related to vibration-sensitive equipment. The City of Santee shall provide a phone number for the affected receptors to call if they have vibration-sensitive equipment on their property. If a complaint is received, a vibration monitoring program will be implemented within 2 working days to reduce vibration to below 80 vibration decibels at the nearest receptor. The vibration monitoring plan shall be prepared and administered by a qualified vibration consultant and submitted to the Director of Development Services for approval. The vibration monitoring plan shall include the location of the vibration monitor, the vibration instrumentation used, a data acquisition and retention plan, and an exceedance notification and reporting procedures. The program shall include but not be limited to the following:

- Monitor vibration during construction activities with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration at the closest residence to the construction area
- Use equipment that includes dampeners or other modifications to reduce vibration
- Use of alternative non-vibratory equipment where available
- Limit simultaneous operation of equipment.

4.12.5.3 Threshold 3: Aircraft Noise

Would implementation of the proposed project expose people residing or working in the project site to excessive noise levels resulting from aircraft noise?

Impact: The proposed project would not expose people residing or working on the project site to excessive noise levels resulting from aircraft noise.

Mitigation: No mitigation is required.

Significance Before Mitigation: Less than significant.

Significance After Mitigation: Less than significant.

Impact Analysis

MCAS Miramar is located adjacent to the west/northwestern boundary of the project site. The runways are located approximately 6 miles west of the project site. Additionally, Gillespie Field is located

approximately 1.75 miles south of the project site. The project site is currently subject to periodic, audible overflights, particularly from MCAS Miramar. However, the proposed project site is not located within the 60 dBA CNEL noise contour of either airport (SDCRAA 2010, 2011). Additionally, the proposed project does not include any components that would increase air traffic or require changes to existing air traffic patterns. As such, overflights are anticipated to continue to be audible at the project site; however, the proposed project is not anticipated to increase exposure to excessive noise levels from airport operation. Therefore, impacts would be less than significant.

Mitigation Measures

Impacts related to aircraft noise would be less than significant; therefore, no mitigation measures are required.

4.12.6 Cumulative Impacts and Mitigation Measures

Would implementation of the proposed project have a considerable contribution to a cumulative noise impact considering past, present, and probable future projects?

Cumulative Impact	Significance	Proposed Project Contribution
Threshold 1: Exceedance of Noise Standards	Potentially significant	Cumulatively considerable and unavoidable
Threshold 2: Excessive Groundborne Vibration or Noise	Less than significant	Not cumulatively considerable
Threshold 3: Aircraft Noise	Less than significant	Not cumulatively considerable

4.12.6.1 Cumulative Threshold 1: Exceedance of Noise Standards

Construction Impacts

Construction noise impacts are localized in nature because they are limited to the construction site where construction equipment is operating. As discussed previously, noise levels from on-site construction would attenuate to 75 dBA approximately 375 feet from the active construction area, and noise from off-site construction would attenuate to 75 dBA approximately 160 feet from the construction area. Due to the length of the construction period for the proposed project, it is likely that construction of multiple cumulative projects would occur simultaneously with the proposed project.

The nearest cumulative projects to the proposed area for on-site development are proposed at the existing northern terminus of the Summit Avenue public right-of-way, approximately 1,200 feet from the nearest on-site development area. Therefore, noise from construction of these projects is unlikely to combine with noise from construction of the proposed land uses.

In addition, a cumulative project (Santee View Estates) would potentially be within 160 feet of the proposed Cuyamaca Street extension. Similar to the proposed project, construction of this

cumulative project would occur over a large area so that exposure of individual receptors to construction noise would vary depending on the location of construction activities during a certain day or phase. Construction of either project would only occur at the property line, within 160 feet of the other project, for a limited time. Due to the linear nature of the construction of the Cuyamaca Street extension, it is unlikely that the two projects' construction noise would combine simultaneously such that impacts from each project would affect the same receptors.

Additionally, cumulative projects and the proposed project would be subject to the construction limitations in the City's Noise Ordinance, which prohibits noise generated by construction activities between the hours of 7:00 p.m. and 7:00 a.m. and on Sundays and holidays without approval from the Director of Development Services. Similar to the proposed project, cumulative projects would be required to implement noise control best management practices in order to comply with the ordinance, such as those listed in Mitigation Measure NOI-4. Distance between projects and compliance with the City's Noise Ordinance would ensure that a significant cumulative construction noise impact would not occur.

Operational Impacts

Approved or planned projects within the City are considered in the cumulative analysis for the proposed project. This analysis incorporates the cumulative projects assumed in the traffic impact analysis for the proposed project (Appendix N). These approved or planned projects include multi-family and single-family residential development, commercial uses, light industrial use, and a church. Similar to the proposed project, residential land uses would generate nuisance noise that would not be considered a significant impact. However, some of the cumulative development projects would potentially include HVAC systems that would have the potential to result in significant impacts to NSLUs up to 275 feet from the source, as well as nuisance noise from parking lots and increased human activity. Industrial uses may result in localized impacts from equipment operation. The nearest cumulative projects to the proposed development area are proposed at the existing northern terminus of the Summit Avenue public right-of-way, approximately 1,200 feet from the nearest on-site development area. Therefore, noise from operation of the proposed project is unlikely to combine with noise from operation of cumulative projects. A cumulative impact would not occur related to operational noise.

Permanent Increase in Ambient Noise Levels

A cumulative permanent ambient noise impact would occur if development associated with cumulative regional land use projects would result in an increase in ambient noise that would exceed the City's noise standards. Buildout of the proposed project, along with the cumulative projects and buildout of the Santee General Plan, would result in increases in traffic that would cumulatively increase traffic noise. An individual project would result in a cumulatively considerable contribution to a significant cumulative impact if the increase in noise attributable to the proposed project would

cause a roadway to exceed the applicable noise standards or would be 3 dBA or higher on a roadway that would exceed the threshold without the proposed project. The potential noise impacts that would result from cumulative projects and regional growth are included in the Year 2035 scenario.

Table 4.12-19 compares Year 2035 traffic noise levels to existing conditions. The proposed project's contribution to cumulative noise impacts is based on the increase in traffic noise attributable to the proposed project under the Year 2035 scenario. Implementation of the proposed project would result in a cumulatively considerable noise level increase on three impacted roadways of Fanita Parkway. Specifically, the proposed project's contribution to noise level at a new roadway is enough to push the noise level over the applicable threshold compared to conditions without the proposed project. Therefore, implementation of the proposed project would result in cumulatively considerable contribution to a significant cumulative roadway noise impact.

Table 4.12-19. Cumulative Traffic Noise Impacts

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (No Project) (dBA Ldn)	Exceeds Threshold Without Project?	Year 2035 (dBA Ldn)	Year 2035 + Project (dBA Ldn)	Increase in Noise Level (Existing to Year 2035 + Project)	Significant Cumulative Impact?	Increase in Noise Level Attributable to Project (Year 2035 to Year 2035 + Project)	Cumulatively Considerable Contribution?
Mast Boulevard	SR-52 to West Hills Parkway	70	71	Yes	72	72	+1	No	0	No
	West Hills Parkway to Medina Drive	65	70	Yes	71	72	+2	No	+1	No
	Pebble Beach Drive to Fanita Parkway	65	70	Yes	71	72	+2	No	+1	No
Mission Gorge Road	SR-125 to Fanita Drive	70	77	Yes	78	78	+1	No	0	No
	Fanita Drive to Carlton Hills Boulevard	70	77	Yes	77	78	+1	No	+1	No
Fanita Parkway	On-Site Portion to Ganley Road	65	Does Not Exist	No	64	66	Does Not Exist	Yes	+2	Yes
	Ganley Road to Lake Canyon Road	65	59	No	65	70	+11	Yes	+5	Yes
	Lake Canyon Road to Mast Boulevard	65	61	No	66	70	+9	Yes	+4	Yes
	Mast Boulevard to Carlton Oaks Drive	65	58	No	61	62	+4	No	+1	No
Carlton Hills Boulevard	Carlton Oaks Drive to Mission Gorge Road	65	69	Yes	70	70	+1	No	0	No

Table 4.12-19. Cumulative Traffic Noise Impacts

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (No Project) (dBA Ldn)	Exceeds Threshold Without Project?	Year 2035 (dBA Ldn)	Year 2035 + Project (dBA Ldn)	Increase in Noise Level (Existing to Year 2035 + Project)	Significant Cumulative Impact?	Increase in Noise Level Attributable to Project (Year 2035 to Year 2035 + Project)	Cumulatively Considerable Contribution?
Cuyamaca Street	On-Site Portion to Magnolia Avenue	65	Does Not Exist	No	65	67	Does Not Exist	No ¹	+2	No
	Magnolia Avenue to Princess Joann Road	65	Does Not Exist	No	64	65	Does Not Exist	No	+1	No
	Princess Joann Road to Chaparral Drive	65	Does Not Exist	No	65	66	Does Not Exist	No ¹	+1	No
	Chaparral Drive to Woodglen Vista Drive	65	54	No	68	69	+15	No ¹	+1	No
	Woodglen Vista Drive to El Nopal	65	62	No	70	70	+18	No ¹	0	No
	El Nopal to Mast Boulevard	65	65	No	71	71	+6	Yes	0	No²
	Mast Boulevard to River Park Drive	65	68	Yes	70	70	+2	No	0	No
	River Park Drive to Town Center Parkway	65	70	Yes	71	71	+1	No	0	No
	Town Center Parkway to Mission Gorge Road	70	72	Yes	73	74	+2	No	+1	No

Table 4.12-19. Cumulative Traffic Noise Impacts

Roadway	Segment	Applicable Threshold (dBA Ldn)	Existing (No Project) (dBA Ldn)	Exceeds Threshold Without Project?	Year 2035 (dBA Ldn)	Year 2035 + Project (dBA Ldn)	Increase in Noise Level (Existing to Year 2035 + Project)	Significant Cumulative Impact?	Increase in Noise Level Attributable to Project (Year 2035 to Year 2035 + Project)	Cumulatively Considerable Contribution?
Magnolia Avenue	Cuyamaca Street to Princess Joann Road	65	Does Not Exist	No	61	63	Does Not Exist	No	+2	No
	Princess Joann Road to Woodglen Vista Drive	65	60	No	66	68	+8	Yes	+2	No ²
	Woodglen Vista Drive to El Nopal	65	66	Yes	68	69	+3	Yes	+1	No ²
	El Nopal to Mast Boulevard	65	68	Yes	71	71	+3	Yes	0	No ²
SR-52	Santo Road to Mast Boulevard	70	76	Yes	77	77	+1	No	0	No

Source: Appendix L.

Note: dBA = A-weighted decibel; Ldn = day-night average sound level; SR- = State Route

Unless otherwise noted, a cumulative impact would occur if vehicle traffic noise would result in an ambient noise level that exceeds the applicable threshold established in the Santee General Plan. If the normally acceptable standard would be exceeded in the existing condition, an increase of more than 3 dBA would be considered a cumulative impact. A cumulatively considerable contribution to a cumulative impact would be a 3 dBA or more increase attributable to the proposed project.

The existing condition represents conditions in 2018. Noise levels are calculated at 50 feet from roadway centerline, except SR-52 (100 feet from centerline due to roadway width). Noise levels are based upon traffic data provided by LLG (Appendix N). Traffic levels for each roadway are included in the Appendix B of EIR Appendix L. Decibel levels are rounded to the nearest whole number. Significant impacts shown in **bold** and **shading**. See Appendix B of EIR Appendix L for data sheets.

¹ Distance or existing noise wall would reduce noise to an acceptable level.

² Cumulative projects would result in a significant increase in noise level on this segment compared to existing conditions. However, cumulative growth would cause the roadway to exceed the threshold without project implementation. The proposed project's contribution to the increase is less than 3 dBA and is, therefore, not cumulatively considerable.

Similar to the proposed project, implementation of Mitigation Measure NOI-6 would reduce noise levels to receptors on the western side of Fanita Parkway to below the normally acceptable noise level for sensitive receptors (65 dBA Ldn). Therefore, with implementation of Mitigation Measure NOI-6, the proposed project's contribution to a significant cumulative traffic noise impact would be reduced but not to below a cumulatively considerable level. This impact would be cumulatively considerable and unavoidable.

4.12.6.2 Cumulative Threshold 2: Excessive Groundborne Vibration or Noise

Similar to noise effects, vibration is a localized phenomenon and is progressively reduced as the distance from the source increases. Therefore, the area of projects that would be considered for the vibration cumulative analysis would be only those projects close to the project site. As discussed previously, vibration levels from typical construction would attenuate to below 80 VdB approximately 75 feet from the active construction area, and blasting from vibration would attenuate to 80 VdB approximately 235 feet from the construction area. Due to the length of the construction period for the proposed project, it is likely that construction of multiple cumulative projects would occur simultaneously with the proposed project.

The nearest cumulative projects are proposed at the existing northern terminus of the Summit Avenue public right-of-way, approximately 1,200 feet from the nearest on-site development area. Therefore, vibration from on-site construction is unlikely to combine with vibration from construction of the proposed project. One cumulative project would potentially be within 235 feet of the proposed Cuyamaca Street extension: the Santee View Estates project proposed north of the existing terminus of Cuyamaca Street. Similar to the proposed project, construction of this cumulative project would occur over a large area so that exposure of individual receptors to construction vibration would vary depending on the location of construction activities during a certain day or phase. Construction would only occur within 235 feet of the proposed Cuyamaca Street extension for a limited time. Due to the linear nature of the construction of the Cuyamaca Street, it is unlikely that construction noise from the two projects would combine simultaneously such that impacts from both projects would affect the same receptor. Distance between projects would reduce impacts to a less than significant cumulative impact. Once constructed, the proposed land use would not generate a significant source of vibration during normal operation. Therefore, a significant cumulative vibration impact would not occur.

4.12.6.3 Cumulative Threshold 3: Aircraft Noise

No additional aviation uses are planned to be introduced in the immediate vicinity of the project site. In addition, the proposed project does not propose any new or air traffic patterns. No NSLUs would be exposed to excessive noise levels from aviation as a result of the proposed project. Impacts related to nuisance noise within noise contour areas are site specific and are not cumulative in nature. Therefore, a cumulative impact related to aircraft noise would not occur.

4.12.7 References

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