

4.13 NOISE

The following setting and impact discussion is based, in part, on the *Noise Impact Assessment for Dana Reserve Specific Plan* prepared for the project (AMBIENT 2022; EIR Appendix I). The Noise Impact Assessment includes an in-depth assessment of potential sources of noise generated by the project and the potential for existing sources of noise to disturb proposed land uses. The following setting information also includes applicable noise standards and thresholds established by the *County of San Luis Obispo General Plan Noise Element* and the County's LUO.

4.13.1 Existing Conditions

4.13.1.1 Overview of Environmental Noise

Noise is generally defined as sound that is loud, disagreeable, or unexpected. The general definition of sound includes the mechanical energy transmitted in the form of a wave because of a disturbance or vibration and is described in terms of the loudness (amplitude) and pitch (frequency) of the sound.

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is interpreted by the ear as corresponding to different degrees of loudness and is measured in decibels (dB) on a logarithmic scale. Therefore, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, a 65-dB source of a sound, such as a truck, when joined by another 65-dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Further, under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB. Laboratory measurements correlate a 10-dB increase in amplitude with a perceived doubling of loudness and establish a 3-dB change in amplitude as the minimum audible difference perceptible to the average person.

Frequency is the number of fluctuations in the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to the sound of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all, and the ear is more sensitive to sound in the higher portion of this range than in the lower. To approximate this sensitivity, the environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA (AMBIENT 2022).

4.13.1.1.1 SOUND PROPAGATION AND ATTENUATION

Propagation is defined as the way noise is spread from the source and attenuation is defined as the rate which sound is reduced as it propagates from the source. The sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates at a rate of approximately 6 dB for each doubling of distance from a point source.

A line source consists of several localized noise sources on a defined path (i.e., highways). Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, depending on ground surface characteristics. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between a line source and the receiver, such as soft dirt, grass, or scattered bushes and trees), an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the

cylindrical spreading, the excess ground attenuation for soft surfaces results in an overall attenuation rate of 4.5 dB per doubling of distance from a line source.

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills, dense woods) and human-made features (e.g., buildings, walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in an approximate 5 dB of noise reduction. Further, taller barriers provide increased noise reduction (AMBIENT 2022).

4.13.1.1.2 NOISE DESCRIPTORS

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the sound-pressure level in that range. Typically, people are most sensitive to the frequency range of 1,000 to 8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies, and is referred to as the “A-weighted” sound level (dBA). The A-weighting network approximates the frequency response of the average ear when listening to most ordinary sounds. Other weighting networks have been devised to address high noise levels or other special problems (e.g., B, C, and D scales), but these scales are rarely used in conjunction with environmental noise.

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are typically used. Common noise descriptors used for the evaluation of environmental noise include energy-equivalent noise level (Leq), day-night average noise level (Ldn), and community noise equivalent (CNEL). Leq is a measure of the average energy content (intensity) of noise over any given period. Additionally, many communities use 24-hour descriptors of noise levels to regulate noise, including Ldn and CNEL. Ldn is the 24-hour average of the noise intensity, with a 10-dBA reduction added for nighttime noise (10:00 p.m.–7:00 a.m.) to account for the greater sensitivity to noise during this period. CNEL is similar to Ldn but adds an additional 5-dBA penalty for evening noise (7:00 p.m.–10:00 p.m.) (AMBIENT 2022). Common noise descriptors are included in Table 4.13-1.

Table 4.13-1. Common Noise Descriptors

Descriptor	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to referenced sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
Energy Equivalent Noise Level (Leq)	The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value (in dBA) is calculated.
Minimum Noise Level (Lmin)	The minimum instantaneous noise level during a specific period of time.

Descriptor	Definition
Maximum Noise Level (Lmax)	The maximum instantaneous noise level during a specific period of time.
Day-Night Average Noise Level (DNL or Ldn)	The 24-hour Leq with a 10 dBA “penalty” for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is “added” to noise events that occur in the nighttime hours to account for increased sensitivity to noise during these hours.
Community Noise Equivalent Level (CNEL)	The CNEL is similar to the Ldn described above, but with an additional 5 dBA “penalty” added to noise events that occur between the hours of 7:00 p.m. to 10:00 p.m. The calculated CNEL is typically approximately 0.5 dBA higher than the calculated Ldn.

Source: AMBIENT (2022)

4.13.1.1.3 HUMAN RESPONSE TO NOISE

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

The primary way of determining a person’s subjective reaction to a new noise is the comparison of it to the existing environment, also known as the “ambient” environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans;
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference;
- A change in the level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial;
- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

For most noise-sensitive land uses, an interior noise level of 45-dB Leq and an exterior noise level of 60-dBA Leq is typically identified for the protection of speech communication. Based on this information, speech interference begins to become a problem when steady noise levels reach approximately 60 to 65 dBA.

The evaluation of potential increases in annoyance, activity interference, and sleep disruption for land use compatibility determinations are typically based on the use of the cumulative noise exposure metrics (i.e., CNEL or Ldn). Research conducted by Theodore J. Schultz identifies a correlation between the cumulative noise exposure metric and individuals who were highly annoyed by transportation noise. The Schultz Curve, which expresses the correlation between noise exposure and annoyance, indicates that approximately 13% of the population is highly annoyed at a noise level of 65 dBA Ldn. It also indicates that the percentage of people describing themselves as being highly annoyed increases between 55 and 70 dBA Ldn. A noise level of 65 dBA Ldn is a commonly referenced dividing point between lower and

higher rates of people describing themselves as being highly annoyed. The Schultz Curve and associated research became the basis for many of the noise criteria subsequently established for federal, state, and local entities. Most federal and state regulations and policies related to transportation noise sources establish a noise level of 65 dBA CNEL/Ldn as the basic limit of acceptable noise exposure for residential and other noise-sensitive land uses. Additionally, an interior noise level of 45 dB CNEL/Ldn is generally considered sufficient to protect against long-term sleep interference (AMBIENT 2022).

4.13.1.1.4 CONSTRUCTION NOISE

Noise levels generated by construction equipment may vary based on factors such as the type of equipment, the equipment model, the operation being performed, and the condition of the equipment. Typically, the dominant source of noise from most construction equipment is the engine, often a diesel engine, which usually does not have sufficient muffling. In other cases, actions such as impact pile-driving or pavement-breaking would dominate the noise area. Construction equipment is operated as a stationary noise source or a mobile noise source. Stationary equipment operates in one location for one or more days at a time with a fixed power operation (e.g., pumps, generators, compressors) or intermittent, variable noises (e.g., pile drivers, pavement breakers). Mobile equipment moves around the site or to and from the site and includes bulldozers, loaders, trucks, etc. (Federal Transit Administration [FTA] 2018). Typical equipment used for construction activities and associated noise levels are included in Table 4.13-2 below.

Table 4.13-2. Typical Construction Equipment Noise Levels

Equipment Type	Typical Noise Level (dBA) ¹ 50 feet From Source	
	Maximum Noise Level (Lmax)	Average-Hourly Noise Levels (Leq)
Backhoe	78	74
Bulldozer	82	78
Compressor	78	74
Cranes	81	73
Concrete Pump Truck	81	74
Drill Rigs	79	72
Dump Trucks	77	73
Excavator	81	77
Generator	81	78
Gradall	83	79
Grader	85	81
Hydraulic Break Ram	90	80
Front End Loader	79	75
Pneumatic Tools	85	82
Pumps	81	78
Roller	80	73
Scraper	84	80
Tractor	84	80

Source: Federal Highway Administration (FHWA) (2008)

¹ Based on measured instantaneous noise levels (Lmax), average equipment usage rates, and calculated average hourly (Leq) noise levels derived from the FHWA Road Construction Noise Model (FHWA 2008).

4.13.1.2 Groundborne Vibration

Groundborne noise occurs when vibration radiates through the ground and creates a low-frequency sound, often described as a “rumble.” Groundborne vibration can be a concern for nearby neighbors of a fixed rail transit system route or maintenance facility. However, groundborne vibration is not commonly perceived as an environmental problem because it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Construction activities can result in varying degrees of groundborne vibration, depending on the equipment, model, and methods employed. Operation of construction equipment causes groundborne vibrations that spread through the ground and diminish in strength with distance (FTA 2018).

The threshold at which there is a risk to normal structures from continuous events is peak particle velocity (PPV) of 0.3 inches per second (in/sec) for older residential structures and 0.5 in/sec PPV for newer building construction. No existing historic or fragile structures were identified in the project area. With regard to human perception, vibration levels would begin to become distinctly perceptible at levels of 0.04 in/sec PPV for continuous events. Continuous vibration levels are considered potentially annoying for people in buildings at levels of 0.2 in/sec PPV. Table 4.13-3 identifies the level at which groundborne vibration is perceptible.

Table 4.13-3. Groundborne Vibration Levels and Potential Effects

Vibration Level (in/sec PPV) ¹	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of “architectural” damage to normal buildings.
0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relatively short periods of vibrations).	Threshold at which there is a risk of “architectural” damage to fragile buildings.
0.3–0.6	Vibrations become distinctly perceptible at 0.04 in/sec PPV and considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Potential risk of “architectural” damage may occur at levels above 0.3 in/sec PPV for older residential structures and above 0.5 in/sec PPV for newer structures.

Source: Caltrans (2020)

¹ The vibration levels are based on PPV in the vertical direction for continuous vibration sources, which includes most construction activities.

4.13.1.3 Existing Ambient Noise Environment

4.13.1.3.1 SENSITIVE NOISE RECEPTORS

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses (AMBIENT 2022). The nearest sensitive receptor

locations are residential dwellings located adjacent to the western, southern, and northern boundaries of the DRSP area.

4.13.1.3.2 AMBIENT NOISE ENVIRONMENT

The DRSP area is surrounded by residential land uses to the north along Cherokee Place, to the west along Pomeroy Road, and to the south along Sandysdale Drive. Additionally, the eastern boundary of the DRSP area is bordered by US 101. Ambient noise levels in the vicinity of the DRSP area are predominantly influenced by vehicle traffic on US 101 and other local roadways. Based on a short-term survey of the project area, the existing ambient noise environment within the vicinity of the DRSP is summarized in Table 4.13-4.

Table 4.13-4. Existing Ambient Noise Levels

Monitoring Location ¹	Existing Noise Level (dBA)	
	Average-Hourly Noise Level (Leq)	Maximum Noise Level (Lmax)
Southeast corner of the DRSP area, approximately 33 yards (99 feet) from the median of US 101	70.3	77.4
Southern boundary of the DRSP area on Cory Way, approximately 212 yards (636 feet) north of Sandysdale Drive	41.3	57.9
West side of the DRSP area, on Hetrick Avenue, approximately 56 yards (168 feet) north of Pomeroy Road	56.6	66.6
North side of the DRSP area, on Cherokee Place, approximately 306 yards (918 feet) south of Willow Road	44.3	65.4

Source: AMBIENT (2022)

¹ Four short-term noise measurement surveys were conducted on November 15 and November 16, 2021, using a Larson Davis Laboratories, Type I, Model 820 integrating sound-level meter positioned at a height of approximately 5 feet above ground level.

Based on Table 4.13-4, measured short-term daytime average-hourly noise levels in the project area generally range from approximately 41.3 dBA Leq to approximately 70.3 dBA Leq.

In addition to the four short-term noise measurement surveys (see Table 4.13-4), a 24-hour noise measurement was conducted near the southeastern boundary of the project site, approximately 100 feet from the median of US 101 to determine long-term ambient noise levels within the vicinity of the DRSP area. Noise levels at this location were primarily affected by vehicle traffic on US 101. Measured average-hourly noise levels ranged from approximately 57.3 dBA Leq during the nighttime hours to approximately 70.4 dBA Leq during the daytime hours (AMBIENT 2022).

4.13.1.3.3 EXISTING TRAFFIC NOISE LEVELS

Vehicle traffic on area roadways is the primary source of noise in the project area. Calculated existing traffic noise levels at 50 feet from the near-travel-lane centerline and distances to existing noise contours for area roadways are summarized in Table 4.13-5.

Table 4.13-5. Existing Traffic Noise Levels

Roadway Segment	50 feet from the Near-Travel-Lane Centerline	Existing Noise Level (dBA CNEL) ¹			
		Distance (Feet) to CNEL/Ldn Contours From Roadway Centerline			
		70	65	60	55
Willow Road, State Route 1 to Pomeroy Road	68.0	WR	88.8	191	411.2
Willow Road, Pomeroy Road to Hetrick Avenue	67.6	WR	83.5	179.4	386.3
Willow Road, Hetrick Ave. to US 101 SB Ramp	68.9	WR	101.6	218.5	470.6
Willow Road, US 101 SB Ramp to NB Ramp	65.2	WR	70.3	147.4	315.6
Pomeroy Road, Willow Road to SW Project Entry	63.4	WR	WR	93.3	200.6
Pomeroy Road, SW Project Enter to Tefft Street	64.5	WR	51.8	111	238.8
Tefft Street, Pomeroy Road to Mary Avenue	66.9	WR	96.4	202.8	434.5
Tefft Street, Mary Avenue to US 101 SB Ramp	65.6	WR	79.2	164.8	352.1
Tefft Street, US 101 SB Ramp to NB Ramp	65.3	WR	83.9	170.9	363.3
Mary Avenue, Tefft Street to Juniper Street	61.8	WR	WR	77.9	166.8
North Thompson Avenue, South of Willow Road	66.4	WR	69.4	149	320.7

Source: AMBIENT (2022)

Note: WR = Within Road Right-of-Way

¹ Traffic noise levels were calculated using the FHWA roadway noise prediction model based on traffic data obtained from the traffic analysis prepared for this project.

Based on Table 4.13-5, existing traffic noise levels along nearby roadways range from approximately 61.8 to 66.9 dBA CNEL/Ldn at 50 feet from the near-travel-lane centerline.

4.13.1.3.4 GROUNDBORNE VIBRATION

No major existing sources of groundborne vibration were identified in the project area. Vehicle traffic on area roadways, particularly heavy-duty trucks, can result in increased groundborne vibration. However, groundborne vibration levels associated with vehicle traffic is typically considered minor and would not exceed applicable criteria at the project site boundaries (AMBIENT 2022).

4.13.1.4 Off-Site Improvements

Off-site transportation, water, and wastewater improvement areas would be located within previously developed areas within the community of Nipomo. Proposed off-site transportation improvements would occur at the location of proposed internal roadway connections to existing roads outside of the Specific Plan area (Willow Road, North Frontage Road, Pomeroy Road, Hetrick Avenue, and Cory Way). Proposed off-site water system improvements would occur along North Oakglen Avenue and Tefft Street and proposed off-site wastewater system improvements are anticipated to occur along North Frontage Road (see Figures 2-4 through 2-7 in Chapter 2, *Project Description*). Land uses adjacent to proposed off-site transportation improvements include residential and commercial uses. Land uses along proposed off-site wastewater improvements include commercial development and land uses along proposed off-site water system improvements include commercial, residential, and agricultural land uses. The nearest sensitive receptor locations include residential dwellings along Willow Road, Pomeroy Road, Hetrick Avenue, Cory Way, and Tefft Street, which would be located adjacent to proposed transportation and water system improvement areas. The existing ambient noise environment within the vicinity of proposed

off-site improvement areas is dominated by vehicle traffic along associated roadways, including US 101, and is also comprised of noise from residential, commercial, and agricultural land uses.

4.13.2 Regulatory Setting

4.13.2.1 Federal

4.13.2.1.1 NOISE CONTROL ACT

The Noise Control Act of 1972 establishes a national policy to promote an environment for all Americans that is free from noise that jeopardizes their health and welfare. The act also serves the following purposes (USEPA 2020):

- Establish a means for effective coordination of federal research and activities in noise control;
- Authorize the establishment of federal noise emission standards for products distributed in commerce; and
- Provide information to the public respecting the noise emission and noise reduction characteristics of such products.

4.13.2.1.2 FEDERAL TRANSIT ADMINISTRATION CRITERIA

The FTA developed methodology and significance criteria to evaluate vibration impacts from surface transportation modes (i.e., passenger cars, trucks, buses, and rail) in the *Transit Noise and Vibration Impact Assessment* (FTA 2018). This assessment provides guidance for preparing and reviewing the noise and vibration sections of environmental documents by setting forth methods and procedures for determining the level the level of noise and vibration impacts resulting from federally funded transit projects and determining appropriate and feasible mitigation.

4.13.2.1.3 FEDERAL HIGHWAY ADMINISTRATION

The Federal Highway Administration (FHWA) is the agency responsible for administering the federal-aid highway program in accordance with federal statutes and regulations. The FHWA developed noise regulations as required by the Federal-Aid Highway Act of 1970 (Public Law 91-605, 84 Stat. 1713). The Regulation 23 CFR 772 Procedures for Abatement of Highway Traffic Noise and Construction Noise applies to highway construction projects where a state department of transportation has requested federal funding for participation in the project. The regulation requires the highway agency to investigate traffic noise impacts in areas adjacent to federally aided highways for proposed construction of a highway on a new location or the reconstruction of an existing highway to either significantly change the horizontal or vertical alignment or increase the number of through-traffic lanes. If the highway agency identifies impacts, it must consider abatement. The highway agency must incorporate all feasible and reasonable noise abatement into the project design (FWHA 2011).

4.13.2.1.4 U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

U.S. Department of Housing and Urban Development (HUD) guidelines for the acceptability of residential land use are included in the 24 CFR Part 51. These guidelines establish that noise exposure of 65 dBA CNEL/Ldn, or less, is acceptable and between 65 and 75 dBA CNEL/Ldn noise exposure is considered normally acceptable provided appropriate sound-reduction measures are provided. Above 75 dBA CNEL/Ldn noise exposure is generally considered unacceptable. The guidelines also identify the recommended interior noise levels of 45 dBA CNEL/Ldn. These guidelines apply only to new construction supported by HUD grants and are not binding on local communities.

4.13.2.2 State

4.13.2.2.1 STATE OF CALIFORNIA GUIDELINES FOR THE PREPARATION AND CONTENT OF NOISE ELEMENT OF THE GENERAL PLAN

These guidelines reference land use compatibility standards for community noise environments as developed by the California Department of Health Services, Office of Noise Control. Sound levels up to 70 Ldn or CNEL are determined in these guidelines to be normally acceptable for office building and professional land uses and 75 Ldn or CNEL are determined in these guidelines to be normally acceptable for industrial uses.

4.13.2.2.2 CALIFORNIA BUILDING STANDARDS CODE

The State of California's noise insulation standards are codified in 24 CCR Part 2 – California Building Code and the California Building Standards Code. These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are developed near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans for noise-sensitive land uses must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

4.13.2.2.3 CALIFORNIA GREEN BUILDING STANDARDS

The *2019 California Green Building Standards* (24 CCR Part 11, Section 5.507) requires that the wall and roof-ceiling assemblies making up a building envelope to have a minimum Sound Transmissions Class (STC) of 50, and exterior windows to have a minimum STC of 40 or equivalent for any of the following building locations:

- Within 65 CNEL noise contour of an airport
- Within the 65 CNEL of Ldn noise contour of a freeway or expressway, railroad, industrial source, or fixed-guideway source as determined by the Noise Element of the General Plan.

The above standards do not apply to buildings with few or no occupants or where occupants are not likely to be affected by exterior noise (as determined by the enforcement authority), such as factories, stadiums, storage, enclosed parking structures, and utility buildings. This section also identifies a minimum STC of 40 for interior walls and floor-ceiling assemblies that separate tenant spaces and public spaces (CBSC 2019).

4.13.2.2.4 CALIFORNIA ADMINISTRATIVE CODE TITLE 24, NOISE INSULATION STANDARDS

Interior noise levels for habitable rooms are regulated also by Title 24 of the CCR, California Noise Insulation Standards. In the CBC, 24 1207.4 requires that interior noise levels attributable to exterior sources not exceed 45 CNEL in any habitable room within a residential structure. A habitable room is a room used for living, sleeping, eating, or cooking. Bathrooms, closets, hallways, utility spaces, and similar areas are not considered habitable rooms for this regulation (24 CCR 1207).

4.13.2.3 Local

4.13.2.3.1 COUNTY OF SAN LUIS OBISPO GENERAL PLAN

Noise Element

The *County of San Luis Obispo General Plan Noise Element* provides a policy framework for addressing potential noise impacts in the planning process. The purpose of the Noise Element is to minimize future noise conflicts. The Noise Element identifies the major noise sources in the county (highways and freeways, primary arterial roadways and major local streets, railroad operations, aircraft and airport operations, local industrial facilities, and other stationary sources) and includes goals, policies, and implementation programs to reduce future noise impacts. Among the most significant policies of the Noise Element are numerical noise standards that limit noise exposure within noise-sensitive land uses and performance standards for new commercial and industrial uses that might adversely impact noise-sensitive land uses.

As shown in Table 4.13-6, Ldn/CNEL noise levels for outdoor activity areas range from 60 to 70 dB. Interior spaces have an Ldn/CNEL standard of 45 dB for residences, hotels, motels, hospitals, and nursing facilities. Interior spaces for public assembly and entertainment-type land uses have a 35 Leq dB standard and office, places of worship, and school-type land uses have a 45 Leq dB standard.

Table 4.13-6. County of San Luis Obispo Maximum Allowable Noise-Exposure Standards for Transportation Noise Sources

Land Use	Outdoor Activity Areas ¹	Interior Spaces	
	Ldn/CNEL (dB)	Ldn/CNEL (dB)	Leq (dB) ²
Residential (except temporary dwellings and residential accessory uses)	60 ³	45	--
Bed and Breakfast Facilities, Hotels and Motels	60 ³	45	--
Hospitals, Nursing and Personal Care	60 ³	45	--
Public Assembly and Entertainment (except Meeting Halls)	--	--	35
Offices	60 ³	--	45
Churches, Meeting Halls	--	--	45
Schools: Preschool to Secondary, College and University, Specialized Education, Training Libraries and Museums	--	--	45
Outdoor Sports and Recreation	70	--	--

Source: County of San Luis Obispo (1992)

¹ Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

² As determined for a typical worst-case hour during periods of use.

³ For other than residential uses, where an outdoor activity area is not proposed, the standard shall not apply. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

As shown in Table 4.13-7, the maximum allowable noise exposure standards vary depending on the duration of exposure and time of day. During the daytime hours of 7:00 a.m. to 10:00 p.m., average-hourly noise levels are limited to 50 dBA Leq at the property line of the receiving noise-sensitive land use. Daytime maximum instantaneous noise levels associated with non-transportation noise sources are limited to 70 dBA Lmax and impulsive noise levels are limited to 65 dBA Lmax at the property line of

noise-sensitive land uses. These daytime noise standards are reduced by 5 dBA for events occurring during the more noise-sensitive nighttime hours (10:00 p.m.–7:00 a.m.).

Table 4.13-7. County of San Luis Obispo Maximum Allowable Noise-Exposure Standards for Stationary Noise Sources

Descriptor ¹	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Leq, dB	50	45
Maximum level, dB	70	65
Maximum level, dB-Impulsive Noise	65	60

Source: County of San Luis Obispo (1992)

¹ As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures. Applies only where the receiving land use operates or is occupied during nighttime hours.

4.13.2.3.2 COUNTY OF SAN LUIS OBISPO INLAND LAND USE ORDINANCE (TITLE 22)

County LUO Section 22.10.120 provides the County’s noise standards. Per this section of the County’s LUO, construction activities would be limited to daytime hours between 7:00 a.m. and 9:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on weekends. This section of the County’s LUO also includes maximum allowed interior and exterior noise level standards, shown in Table 4.13-8.

Table 4.13-8. Maximum Allowable Interior and Exterior Noise Level Standards

Sound Levels	Interior		Exterior ¹	
	Daytime 7 a.m.–10 p.m.	Nighttime ²	Daytime 7 a.m.–10 p.m.	Nighttime ²
Hourly Equivalent Sound Level (Leq, dB)	40	35	50	45
Maximum level (dB)	60	55	70	65

Source: LUO (Title 22 of the County Code)

¹ When the receiving noise-sensitive land use is outdoor sports and recreation, the noise level standards are increased by 10 db.

² Applies only to uses that operate or are occupied during nighttime hours.

4.13.2.4 Applicable State, Regional, and Local Land Use Plans and Policies Relevant to Noise

Table 4.13-9 lists applicable state, regional, and local land use policies and regulations pertaining to noise that were adopted for the purpose of avoiding or mitigating an environmental effect and that are relevant to the proposed project. A general overview of these policy documents is presented in Section 4.13-2, *Regulatory Setting*, and Chapter 3, *Environmental Setting*. Also included in Table 4.13-9 is an analysis of project consistency with identified policies and regulations. Where the analysis concludes the proposed project would potentially conflict with the applicable policy or regulation, the reader is referred to Section 4.13-5, *Project-Specific Impacts and Mitigation Measures*, and Section 4.11, *Land Use and Planning*, for additional discussion.

Table 4.13-9. Consistency Analysis for Noise

Goals, Policies, Plans, Programs and Standards	Intent of the Policy in Relation to Avoiding or Mitigating Significant Environmental Impacts	Preliminary Consistency Determination
County of San Luis Obispo General Plan		
Noise Element		
<p>Policy 3.3.1. The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation.</p>	<p>The intent of this policy is to minimize noise exposure and noise generation.</p>	<p>Potentially Consistent. The DRSP has been prepared to be consistent with the goals and policies of the General Plan. DRSP policies and standards related to noise include design guidelines to screen and/or enclose outdoor mechanical equipment and to allow for walls up to 8 feet in height for noise buffers around loading areas and areas adjacent to residential and educational uses.</p>
<p>Policy 3.3.2. New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB L_{DN} or CNEL (70 L_{DN} or CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified for the given land use.</p>	<p>The intent of this policy is to limit exposure of noise-sensitive uses to existing and future transportation-related noise sources.</p>	<p>Potentially Consistent. DRSP policies and standards related to noise would be applicable to future development. Mitigation Measure N/mm-1.2 would require site-specific acoustical analyses to ensure that noise does not exceed thresholds for outdoor activity areas and for interior spaces of proposed residential, educational, hotel, and commercial land uses.</p>
<p>Policy 3.3.3. Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as to not exceed the established noise levels within the outdoor activity areas or interior spaces of existing noise sensitive land uses.</p>	<p>The intent of this policy is to limit exposure of noise-sensitive uses to future transportation-related noise sources.</p>	<p>Potentially Consistent. DRSP policies and standards related to noise would be applicable to future development. Mitigation Measure N/mm-1.2 would require site-specific acoustical analyses to ensure that noise does not exceed thresholds for outdoor activity areas and for interior spaces of proposed residential, educational, hotel, and commercial land uses.</p>
<p>Policy 3.3.4. New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below established levels.</p>	<p>The intent of this policy is to avoid overexposure of new noise-sensitive land uses to noise generated by stationary sources.</p>	<p>Potentially Consistent. DRSP policies and standards related to noise would be applicable to future development. Mitigation Measure N/mm-1.2 would require site-specific acoustical analyses to ensure that noise does not exceed thresholds for outdoor activity areas and for interior spaces of proposed residential, educational, hotel, and commercial land uses.</p>
<p>Policy 3.3.5. Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated as follows and shall be the responsibility of the developer of the stationary noise source:</p> <ol style="list-style-type: none"> a. Noise from agricultural operations conducted in accordance with accepted standards and practices is not required to be mitigated. b. Noise levels shall be reduced to or below noise level standards where the stationary noise source will expose an existing noise-sensitive land use to noise levels which exceed established standards. 	<p>The intent of this policy is to mitigate potential conflict between noise-sensitive uses and noise generated by stationary sources.</p>	<p>Potentially Consistent. DRSP policies and standards related to operational noise would be applicable to future development. Mitigation Measure N/mm-1.2 would require site-specific acoustical analyses to ensure that stationary noise sources, such as HVAC and back-up generators, would not exceed thresholds for outdoor activity areas and for interior spaces of proposed residential and educational land uses.</p>

Goals, Policies, Plans, Programs and Standards	Intent of the Policy in Relation to Avoiding or Mitigating Significant Environmental Impacts	Preliminary Consistency Determination
<p>c. Noise levels shall be reduced to or below the noise level standards where the stationary noise source will expose vacant land in the Agriculture, Rural Lands, Residential rural, Residential Suburban, Residential Single-Family, Residential Multi-Family, Recreation, Office and Professional, and Commercial Retail land use categories to noise levels which exceed the established standards.</p>	<p>The intent of this policy is to rectify existing noise conflicts and avoid new noise conflicts between land uses.</p>	<p>Potentially Consistent. DRSP policies and standards related to noise would be applicable to future development. Mitigation Measure N/mm-1.2 would require site-specific acoustical analyses to ensure that potential contributions from buildout of the DRSP would not result in substantial cumulative increases to ambient noise levels at outdoor activity areas and in interior spaces of proposed residential, educational, hotel, and commercial land uses.</p>
<p>Policy 3.3.6. San Luis Obispo County shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise-sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.</p>	<p>The intent of this policy is to rectify existing noise conflicts and avoid new noise conflicts between land uses.</p>	<p>Potentially Consistent. DRSP policies and standards related to noise would be applicable to future development. Mitigation Measure N/mm-1.2 would require site-specific acoustical analyses to ensure that potential contributions from buildout of the DRSP would not result in substantial cumulative increases to ambient noise levels at outdoor activity areas and in interior spaces of proposed residential, educational, hotel, and commercial land uses.</p>

4.13.3 Thresholds of Significance

The determinations of significance of project impacts are based on applicable policies, regulations, goals, and guidelines defined by CEQA and the County. Specifically, the project would be considered to have a significant effect on noise if the effects exceed the significance criteria described below:

- a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- b. Generation of excessive groundborne vibration or groundborne noise levels.

Each of these thresholds is discussed under Section 4.13.5, *Project-Specific Impacts and Mitigation Measures*, below.

As discussed in the IS/NOP, the project site is not located within an airport land use plan or within 2 miles of a public airport or public use airport and would not result in impacts related to exposure of people to excessive aircraft-related noise levels. Therefore, issues related to the following threshold of significance is not discussed further in the EIR.

- c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

See EIR Appendix B, *Notice of Preparation for the Draft Environmental Impact Report and Comment Letters*, for more information related to this topic.

4.13.4 Impact Assessment and Methodology

The following impact assessment is based, in part, on the Noise Impact Assessment prepared for the DRSP (AMBIENT 2022), the Noise Element, and the County's LUO. A significant impact related to noise would occur if the proposed project would result in an increase in short- or long-term environmental noise within the vicinity of the project or if the proposed project would generate groundborne noise or vibration in a manner that could cause disturbance to historic buildings or humans.

4.13.5 Project-Specific Impacts and Mitigation Measures

WOULD THE PROJECT RESULT IN THE GENERATION OF A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES?

Specific Plan Area

N Impact 1: The project would generate a substantial temporary or permanent increase in ambient noise levels in excess of established standards. Impacts would be less than significant with mitigation (Class II).

CONSTRUCTION

The proposed project would generate a short-term, intermittent increase in ambient noise during the construction phase of the project from initial site improvements, vehicle and equipment movement, and future construction of residential and commercial land uses. The exact timing of buildout of the DRSP area is currently not known; however, the anticipated buildout schedule is assumed to occur over a span of 6 years beginning in 2024 (see Table 2-11 in Chapter 2, *Project Description*). Construction activities would be limited to daytime hours between 7:00 a.m. and 9:00 p.m. on weekdays and 8:00 a.m. and 5:00 p.m. on weekends per County LUO Section 22.10.120.

As identified in Table 4.13-2 included in Section 4.13.1.1.4, *Construction Noise*, typical maximum construction noise levels range from approximately 77 to 90 dBA L_{max} at 50 feet from the noise source and average-hourly noise levels associated with construction equipment generally range from approximately 72 to 82 dBA Leq at 50 feet. Based on these equipment noise levels, equipment commonly associated with community development projects, and assuming the two loudest pieces of equipment operating simultaneously in close proximity, predicted average-hourly noise levels occurring during the loudest phases of construction generally range from approximately 78 to 84 dBA Leq at 50 feet (AMBIENT 2022).

The County has not adopted noise standards that apply to short-term construction activities. However, based on screening noise criteria commonly recommended by federal agencies, construction activities would generally be considered to have a potentially significant impact if average daytime noise levels would exceed 90 dBA Leq when averaged over a 1-hour period (Leq), or 80 dBA Leq when averaged over an 8-hour period (Leq) (AMBIENT 2022). The nearest sensitive receptor locations are residential dwellings located adjacent to the western, southern, and northern boundaries of the DRSP area. Noise attenuation rate describes the rate at which a noise level is reduced from the source to surrounding areas. Assuming a minimum noise attenuation rate of 6 dB per doubling of distance from the source, construction-related noise levels could reach 80 dBA Leq at roughly 50 feet from on-site activities. Therefore, depending on the construction activities being conducted, noise levels at adjacent sensitive

receptor locations have the potential to exceed 80 dBA Leq when more intensive activities, such as site grading, occur near the western, southern, and northern boundaries of the DRSP area (AMBIENT 2022).

Due to the proximity of the nearest sensitive receptor locations, there is potential for short-term construction-related noise to increase ambient noise levels during the anticipated 6-year buildout phase that may result in disturbance. Mitigation Measure N/mm-1.1 has been included to reduce short-term construction noise through implementation of construction noise best management practices (BMPs). Following implementation of noise BMPs included in Mitigation Measure N/mm-1.1, average-hourly construction noise levels would be reduced to less than 80 dBA Leq at nearby noise-sensitive land uses (AMBIENT 2022). Therefore, potential impacts related to a temporary increase in ambient noise would be *less than significant with mitigation*.

OPERATION

Buildout of the DRSP area would result in the construction of 831 new residential single-family units, 458 new residential multi-family units, 152 ADUs, and approximately 203,000 square feet of land dedicated to commercial and light industrial development. Commercial and light industrial areas may include retail, hotel, and/or educational land uses. Full buildout of the DRSP area is anticipated to generate a total population of 4,554 residents and 272 new employees (4,826 people). In addition, buildout of the DRSP area includes development of a new 10-acre public park, a 1-acre equestrian staging area, and 8.5 to 12 acres of neighborhood pocket parks.

Residential Uses

Operation of up to 1,441 proposed residential units would expose existing and proposed residential dwellings within the vicinity of the project to minor increases in long-term ambient noise levels. Noise typically associated with such development includes lawn and garden equipment, voices, air conditioning equipment, and amplified music. Noise generated by these land uses would result in only minor increases in ambient noise levels, primarily during the day and evening hours and less frequently at night. Air conditioning units for residential uses typically generate noise levels of approximately 60 dBA Leq at 3 feet during operation. Typical operational cycles for residential air condition units occur for periods of approximately 10 minutes in 20- to 30-minute intervals. When averaged over an approximate 1-hour period and assuming a setback distance of 5 feet, predicted average-hourly noise levels at nearby residential land uses would not be anticipated to exceed the County's noise standards. As a result, increased noise levels associated with proposed residential land uses would be *less than significant*.

Commercial, Hotel, and Retail Uses

Noise sources commonly associated with commercial, hotel, and retail uses include building mechanical systems (e.g., HVAC systems), back-up power generators, vehicle activity within parking lots, and loading dock activities. Noise levels associated with building mechanical systems, such as larger air conditioning units, can range from 60 to 79 dBA Leq at 5 feet. Back-up power generators can generate noise levels of approximately 79 dBA Leq at 50 feet. Assuming a maximum noise level of 79 dBA Leq at 50 feet, predicted operational noise levels associated with back-up power generators could potentially exceed 50 dBA Leq at approximately 1,500 feet and approximately 45 dBA Leq at 2,700 feet. Additionally, noise levels associated with loading dock operations and material-handling activities have the potential to generate noise levels of approximately 65 dBA Leq at 50 feet. Predicted operational noise levels associated with loading dock operations could potentially exceed 50 dBA Leq at approximately 150 feet and approximately 45 dBA Leq at 265 feet. Other outdoor equipment, such as commercial-use air conditioning condensers and trash compactors, and material handling activities may also result in intermittent increases in operational noise levels (AMBIENT 2022).

Depending on the specific uses proposed, site design, and hours of operation predicted noise levels associated with proposed commercial land uses could potentially exceed the County's stationary noise source standards at nearby noise-sensitive land uses. Areas where commercial and residential development would occur in close proximity, such as planned mixed-use development, would be of particular concern. Since the specific buildout schedule and development plan for the DRSP area is currently not known, Mitigation Measure N/mm-1.2 has been included to require an acoustical survey for future commercial development to determine areas where noise may exceed established county thresholds. If proposed commercial development is identified as exceeding established thresholds, long-term noise reduction features, such as setbacks, sound barriers, berms, hourly limitations, and/or equipment enclosures would be required to be included in the final design plan to ensure new noise sources do not exceed established noise thresholds. Therefore, potential impacts related to long-term increase in ambient noise levels from commercial development would be *less than significant with mitigation*.

Parking Lots

The proposed project would include multiple parking lots dispersed throughout the project site, primarily associated with proposed commercial uses and multi-family land uses located within the easternmost portion of the DRSP area. Noise levels associated with parking lots typically includes vehicle operations, the opening and closing of vehicle doors, and the operation of vehicle sound systems. Parking areas associated with commercial uses, as well as multi-family land uses, would be separated from nearby residential land uses by proposed on-site roadways; therefore, noise levels at the nearest residential land uses would not be projected to exceed county noise standards and would be largely masked by vehicular traffic on area roadways, including US 101. Potential impacts would be *less than significant*.

Outdoor Recreational and Special Event Uses

Noise typically associated with neighborhood parks, small playgrounds, trails, and open space areas are typically limited to the voices of adults and children and the occasional opening and closing of vehicle doors. Noise events are typically sporadic and limited primarily to the daytime hours of operation. Parks and open space areas are typically considered to be an accepted land use within residential developments and generally do not result in noise events that are uncharacteristic of typical residential noise environments. However, some outdoor uses, such as outdoor athletic and temporary event facilities, may incorporate the use of an amplified public address (PA) sound system. Depending on the location of the PA system and speaker orientation, the use of amplified public address systems can generate noise levels of approximately 75 dBA Leq at 100 feet. Based on this noise level, predicted operational noise levels within approximately 1,050 feet and 3,300 feet could potentially exceed the County's daytime and nighttime noise standards of 50 and 45 dBA Leq, respectively. Depending on operational characteristics and location, predicted noise levels at nearby noise-sensitive land uses could potentially exceed the County's noise standards. Since the specific buildout schedule and development plan for the DRSP area is currently not known, Mitigation Measure N/mm-1.2 has been included to require an acoustical survey for future outdoor recreational development to determine areas where noise may exceed established county thresholds. If proposed outdoor recreational development is identified as exceeding established thresholds, long-term noise reduction features, such as setbacks, sound barriers, berms, hourly limitations, and/or equipment enclosures, would be required to be included in the final design plan to ensure new noise sources do not exceed established County noise thresholds. Therefore, potential impacts related to a long-term increase in ambient noise levels from outdoor recreational development would be *less than significant with mitigation*.

Educational Land Uses

Noise generated by the proposed satellite junior college campus and childcare center would be predominantly generated by elevated children’s voices, adult voices, building mechanical equipment, parking lots, and exterior PA system speakers. Noise levels associated with small playgrounds and recreation areas can generate intermittent noise levels of approximately 55 to 60 dBA Leq at 50 feet. Noise levels associated with outdoor playgrounds would not be anticipated to exceed the County’s noise standards at nearby land uses and would be largely masked by traffic noise emanating from area roadways, including US 101. Building mechanical equipment is typically located within the structure, enclosed, or placed on rooftop areas away from direct public exposure. Noise generated by on-site noise sources would be predominantly limited to the daytime hours of operation. However, as discussed above, outdoor equipment, such as back-up power generators, trash compactors, and exterior amplified PA sound systems, may result in increases in ambient noise levels at nearby noise-sensitive land uses in excess of the County’s noise standards. As described above, Mitigation Measure N/mm-1.2 has been included to require an acoustical survey for future development to determine areas where noise may exceed established County thresholds and requires implementation of long-term noise reduction measures, such as setbacks, sound barriers, berms, hourly limitations, and/or equipment enclosures, to ensure new noise sources do not exceed established noise thresholds. Therefore, potential impacts related to a long-term increase in ambient noise levels from future development, including educational land uses, would be *less than significant with mitigation*.

Increases in Long-Term Traffic Noise Levels

Implementation of the proposed project would result in increased traffic volumes on area roadways, which is anticipated to contribute to increases in traffic noise levels within the vicinity of the DRSP area. Predicted increases in traffic noise levels, with and without implementation of the proposed project, are shown in Table 4.13-10.

Table 4.13-10. Predicted Increases in Existing Traffic Noise Levels

Roadway Segment	Predicted Community Noise Equivalent (CNEL), 50 Feet from Near-Travel-Lane Centerline			
	Existing Without Project	With Project	Predicted Change	Significant Increase
Willow Road, State Route 1 to Pomeroy Road	68.0	68.5	0.5	No
Willow Road, Pomeroy Road to Hetrick Avenue	67.6	68.1	0.5	No
Willow Road, Hetrick Avenue to US 101 SB Ramp	68.9	71.6	2.7	No
Willow Road, US 101 SB Ramp to NB Ramp	65.2	68.1	2.9	No
Pomeroy Road, Willow Road to SW Project Entry	63.4	64.4	1.0	No
Pomeroy Road, SW Project Enter to Tefft Street	64.5	66.0	1.5	No
Tefft Street, Pomeroy Road to Mary Ave.	66.9	66.9	0.0	No
Tefft Street, Mary Avenue to US 101 SB Ramp	65.6	65.5	-0.1	No
Tefft Street, US 101 SB Ramp to NB Ramp	65.3	65.3	0.0	No
Mary Avenue, Tefft Street to Juniper Street	61.8	61.6	-0.2	No
North Thompson Avenue, South of Willow Road	66.4	67.3	0.9	No

Source: AMBIENT (2022)

¹ Traffic noise levels were calculated using the FHWA roadway noise prediction model based on traffic data obtained from the traffic analysis prepared for this project.

² A significant impact is defined as a substantial increase (i.e., 3 dB, or greater) in traffic noise levels.

As depicted in Table 4.13-10, increases in existing traffic noise levels along local roadways within the vicinity of the DRSP area would range from less than 0.1 to 2.9 dBA CNEL/Ldn. Typically, perceptible changes in ambient noise levels do not occur at levels below 3 dBA (AMBIENT 2022). Implementation of the proposed project would not result in an increase of 3 dBA or greater along any of the roadway segments; therefore, potential impacts related to increases in long-term ambient noise along roadways would be *less than significant*.

Compatibility of Proposed Land Uses with Traffic Noise Levels

The County’s noise standards for exposure to transportation noise sources are 60 dBA CNEL/Ldn for residential, commercial office, and hotel uses and 70 dBA CNEL/Ldn for outdoor sports and recreation uses. Noise exposure standards for other land uses considered to be potentially sensitive to noise, such as educational use facilities, are based on an interior noise exposure level of 45 dBA CNEL/Ldn.

As previously discussed, ambient noise levels at the project site are primarily influenced by vehicle traffic on US 101, which extends in a general north-to-south direction along the eastern boundary of the project site. Traffic noise modeling was conducted for future year 2032 conditions. Based on the traffic noise modeling, the predicted 70, 65, and 60 dBA CNEL noise contours would extend to approximately 220 feet, 468 feet, and 1,005 feet from the centerline of US 101, respectively. Predicted traffic noise levels at proposed multi-family land uses located within the easternmost portions of the project site would be projected to exceed the County’s exterior noise standard of 60 dBA CNEL/Ldn. Other land uses, such as the proposed offices or educational land uses, also have the potential to exceed the County’s interior noise standard of 45 dBA CNEL/Ldn. Predicted traffic noise levels at other future planned land uses located along proposed Collector B and proposed Collector C, including proposed residential land uses and the daycare facility, would be approximately 60 dBA CNEL/Ldn or less and would not exceed applicable County noise standards (AMBIENT 2022).

Since the specific buildout schedule and development plan for the DRSP area is currently not known, Mitigation Measure N/mm-1.2 has been included to require an acoustical survey to determine areas where transportation-related noise may exceed established County thresholds. If roadway and vehicle traffic noise is determined to exceed existing thresholds at proposed future development, long-term noise reduction features, such as setbacks, sound barriers, and/or berms, would be required to be included in the final design plan to ensure transportation noise levels do not exceed established County thresholds. Therefore, potential impacts related to a long-term increase in ambient noise levels from roadway and vehicle noise would be *less than significant with mitigation*.

N Impact 1 (Class II)	
The project would generate a substantial temporary or permanent increase in ambient noise levels in excess of established standards.	
Mitigation Measures	
N/mm-1.1	<p><i>The following mitigation measures shall be implemented to reduce exposure to short-term construction noise.</i></p> <ol style="list-style-type: none"> 1. <i>Unless otherwise provided for in a validly issued permit or approval, noise-generating construction activities should be limited to between the hours of 7:00 a.m. and 7:00 p.m. Noise-generating construction activities should not occur on Sundays or legal holidays.</i> 2. <i>Construction equipment should be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers’ recommendations. Equipment-engine shrouds should be closed during equipment operation.</i>

N Impact 1 (Class II)	
	<ol style="list-style-type: none"> 3. <i>Equipment shall be turned off when not in use for an excess of 5 minutes, except for equipment that requires idling to maintain performance.</i> 4. <i>Construction haul truck routes shall be routed away from nearby noise-sensitive land uses to the extent possible.</i> 5. <i>Staging and queuing areas shall be located at the farthest distance possible from nearby noise-sensitive land use identified in the project area at the time of construction.</i> 6. <i>Stationary equipment (e.g., generators, compressors) shall be located at the farthest distance possible from nearby noise-sensitive land use identified in the project area at the time of construction.</i> 7. <i>A public liaison shall be appointed for project construction and shall be responsible for addressing public concerns related to construction-generated noise, including excessive noise. As needed, the liaison shall determine the cause of the concern (e.g., starting too early, bad muffler) and implement measures to address the concern. Where necessary, additional measures, such as equipment repairs, equipment enclosures, or temporary barriers, shall be implemented to address local concerns.</i> 8. <i>Signage shall be placed at the project site construction entrance(s) to advise the public of anticipated dates of construction. The signage shall include the phone number of the public liaison appointed to address construction-related noise concerns.</i>
N/mm-1.2	<p><i>The following mitigation measures shall be implemented to reduce long-term exposure to transportation and non-transportation noise:</i></p> <ol style="list-style-type: none"> 1. <i>The County of San Luis Obispo shall require acoustical assessments to be prepared as part of the County development review process for future noise-sensitive land uses located within the projected 60 A-weighted decibels Community Noise Equivalent Level noise contour of U.S. Route 101 (i.e., within 1,005 feet from the centerline of U.S. Route 101, refer to Figure 4 in Environmental Impact Report Appendix I). The acoustical assessments shall address compatibility with the County of San Luis Obispo's noise standards for transportation noise sources. Where the acoustical assessments determine that transportation noise levels would exceed applicable County noise standards, noise-reduction measures shall be incorporated sufficient to reduce operational noise levels to below applicable noise standards. Such measures may include, but are not limited to, the incorporation of setbacks, sound barriers, or berms. The emphasis of such measures shall be placed upon site planning and project design. (Refer to Table 4.13-6 of this Environmental Impact Report for noise-sensitive land uses and corresponding noise standards.)</i> 2. <i>The County shall require acoustical assessments to be prepared as part of the environmental review process for future commercial land uses involving the proposed installation of exterior noise-generating equipment, including, but not limited to, back-up power generators, trash compactors, amplified public address systems, and commercial-use air conditioning condensers. The acoustical assessments shall evaluate potential noise impacts attributable to the proposed project in comparison to applicable County noise standards for stationary noise sources (refer to Table 4.13-7). The acoustical assessment shall evaluate impacts to nearby existing off-site, as well as future planned on-site, noise-sensitive land uses. Where the acoustical analysis determines that stationary-source noise levels would exceed applicable County noise standards, noise-reduction measures shall be incorporated sufficient to reduce operational noise levels to below applicable noise standards. Such measures may include, but are not limited to, the incorporation of setbacks, sound barriers, berms, hourly limitations, or equipment enclosures. The emphasis of such measures shall be placed upon site planning and project design (see Table 4.13-7 of this Environmental Impact Report for applicable County of San Luis Obispo noise standards).</i>
Residual Impacts	
<p><i>With implementation of Mitigation Measures N/mm-1.1 and N/mm-1.2, residual impacts related to the short- and long-term increase in ambient noise would be less than significant (Class II).</i></p>	

Off-Site Improvements

N Impact 2: Off-site improvements would generate a substantial temporary or permanent increase in ambient noise levels in excess of established standards. Impacts would be less than significant with mitigation (Class II).

Proposed off-site transportation improvements would occur at the location of proposed internal roadway connections to existing roads outside of the Specific Plan area (Willow Road, North Frontage Road, Pomeroy Road, Hetrick Avenue, and Cory Way). Proposed water system improvements are anticipated to be located along North Oakglen Avenue and Tefft Street, and proposed wastewater system improvements are anticipated to occur along North Frontage Road (see Figures 2-4 and 2-5 in Chapter 2, *Project Description*). Proposed wastewater system improvements would occur within previously developed areas and along existing commercial land uses and the US 101. Proposed transportation and water system improvements would also occur in previously developed areas and would occur along existing commercial and residential land uses. Proposed construction activities for off-site improvements would be short term, intermittent, and conducted in accordance with County LUO requirements for construction timing. However, based on the proximity of residential land uses to the proposed transportation and water system improvements, Mitigation Measure N/mm-1.1 has been included to reduce construction-related noise where feasible through implementation of construction noise BMPs. Therefore, potential impacts related to an increase in short-term ambient noise levels would be *less than significant with mitigation*.

Operation of the proposed off-site NCSD improvements would require maintenance and repair trips on an as-needed basis and would not generate an increase in ambient noise levels that may exceed established County noise standards. Therefore, impacts related to a long-term increase in ambient noise levels during operation of the proposed off-site NCSD water and wastewater system improvements would be *less than significant*.

N Impact 2 (Class II)
Off-site improvements would generate a substantial temporary or permanent increase in ambient noise levels in excess of established standards.
<i>Mitigation Measures</i>
<i>Implement Mitigation Measure N/mm-1.1.</i>
<i>Residual Impacts</i>
<i>With implementation of the identified mitigation measure, residual impacts related to the short- and long-term increase in ambient noise would be considered less than significant (Class II).</i>

WOULD THE PROJECT RESULT IN THE GENERATION OF EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS?

Specific Plan Area

N Impact 3: The project would not result in the generation of excessive short- or long-term groundborne vibration or noise levels. Therefore, impacts would be less than significant (Class III).

Typically, groundborne noise and vibration occurs as a result of the excitation of a structure or surface. Most types of typical construction equipment generally do not create groundborne noise or vibration that

is perceptible to humans. Construction equipment that has the potential to generate groundborne noise includes large bulldozers, loaded trucks, jackhammers, and small bulldozers. Proposed construction activities associated with the project would require the use of various tractors, trucks, and jackhammers that could result in intermittent increases in groundborne vibration levels. The use of major groundborne vibration-generating construction equipment/processes (i.e., blasting, pile driving) is not anticipated to be required for construction of future on-site land uses. Groundborne vibration levels generated by construction equipment would have an approximately 0.09 in/sec PPV or less at 25 feet. Therefore, predicted groundborne vibration levels would not be anticipated to exceed the minimum recommended criteria for structural damage (0.5 in/sec PPV) or human annoyance (0.2 in/sec PPV) at nearby land uses (see Table 4.13-3; AMBIENT 2022).

During operation, haul trucks traveling along project area roadways have the potential to result in perceptible increases in vibration levels. However, these vibration levels would be transient and instantaneous events, which would be typical of existing vibrations along the roadway network. Further, on-road heavy-duty trucks would not generate substantial increases in groundborne vibration that would be expected to exceed commonly applied criteria for structural damage or annoyance. In addition, based on the evaluation of existing development surrounding the project area, no major stationary sources of groundborne vibration were identified that would result in the long-term exposure of proposed on-site land uses to unacceptable levels of ground vibration (AMBIENT 2022). Construction and operation of the proposed project would not exceed the minimum recommended criteria for structural damage or human annoyance related to groundborne noise and/or vibration; therefore, potential impacts would be *less than significant*.

N Impact 3 (Class III)
The project would not result in the generation of excessive short- or long-term groundborne vibration or noise levels.
Mitigation Measures
<i>Mitigation is not necessary.</i>
Residual Impacts
<i>Residual impacts associated with the generation of excessive groundborne vibration or groundborne noise levels would be less than significant (Class III).</i>

Off-Site Improvements

N Impact 4: Off-site improvements would not result in the generation of excessive short- or long-term groundborne vibration or noise levels. Therefore, impacts would be less than significant (Class III).

Construction activities for installation of proposed off-site transportation, water, and wastewater improvements would require ground disturbance and road demolition activities that have the potential to increase groundborne noise or vibration within the vicinity of proposed improvement areas (see Figures 2-4 through 2-7 in Chapter 2, *Project Description*). As described above, groundborne vibration levels generated by typical construction equipment would have an approximately 0.09 in/sec PPV or less at 25 feet. Therefore, predicted groundborne vibration levels would not be anticipated to exceed the minimum recommended criteria for structural damage (0.5 in/sec PPV) or human annoyance (0.2 in/sec PPV) at nearby residential or commercial land uses (AMBIENT 2022). Further, off-site NCSO improvements do not include major groundborne vibration-generating construction activities, including blasting or pile

driving. Operation of proposed off-site transportation and NCSO-related improvements would require maintenance and repair trips on an as-needed basis but would not generate a significant level of groundborne noise or vibration. Therefore, construction and operation of the proposed off-site transportation, water, and wastewater system improvements would not generate excessive groundborne noise and impacts would be *less than significant*.

N Impact 4 (Class III)
Off-site improvements would not result in the generation of excessive short- or long-term groundborne vibration or noise levels.
Mitigation Measures
<i>Mitigation is not necessary.</i>
Residual Impacts
<i>Residual impacts associated with the generation of excessive groundborne vibration or groundborne noise levels would be less than significant (Class III).</i>

4.13.6 Cumulative Impacts

N Impact 5: The project would not result in a cumulatively considerable impact to noise. Impacts would be less than cumulatively considerable and less than significant (Class III).

Reasonably foreseeable projects in and around the community of Nipomo have the potential to expose people to an increase in short- and long-term ambient noise and/or groundborne vibration. Project-specific construction-related and operational noise impacts would be mitigated to a less-than-significant level with implementation of Mitigation Measures N/mm-1.1 and N/mm-1.2 and are not anticipated to permanently increase ambient noise levels within the vicinity of the DRSP area in a manner that would exceed County noise thresholds. Construction of reasonably foreseeable future projects has the potential to increase short-term ambient noise; however, construction-related noise generated by reasonably foreseeable present and future projects would be short-term, intermittent, and required to comply with County LUO Section 23.06.042 for acceptable construction hours. Reasonably foreseeable future projects would be subject to separate environmental review to determine potential sources of short- or long-term increases in ambient noise levels that may exceed established County noise standards and would be required to reduce noise impacts where feasible. Therefore, impacts related to the generation of short- and long-term ambient noise levels would be *less than cumulatively considerable*.

Project-specific impacts related to the generation of groundborne noise and vibration would be less than significant, and no mitigation is required. Typical construction activities do not generate groundborne noise or vibration in a manner that would be perceptible to humans; therefore, other reasonably foreseeable future projects are not anticipated to result in significant impacts related to the generation of groundborne noise or vibration. Nevertheless, reasonably foreseeable present and future projects would be subject to separate environmental review to determine potential sources of groundborne noise and vibration and to reduce potential impacts as necessary. Therefore, impacts related to the generation of groundborne noise and vibration and the exposure of project occupants to excessive aircraft noise would be *less than cumulatively considerable*.

N Impact 5 (Class III)
The project would not result in a cumulatively considerable impact to noise.
Mitigation Measures
<i>Mitigation is not necessary.</i>
Residual Impacts
<i>Cumulative impacts would be avoided through compliance with identified project-specific mitigation, and no additional mitigation is needed to avoid or minimize potential cumulative impacts; therefore, residual impacts would be less than significant (Class III).</i>

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