

2.6 Noise

This section addresses the potential noise and vibration impacts associated with implementation of The Villages – Escondido Country Club Project (Project). It provides context with a description of noise factors and terminology, as well as the existing noise setting of the Project site, both environmental and regulatory. The analysis is based on technical data and applicable laws, regulations, and guidelines, as well as the technical report titled *Noise Assessment for Villages at Escondido Country Club* prepared by Dudek (Appendix 2.6-1 to this Environmental Impact Report (EIR)).

2.6.1 Existing Conditions

2.6.1.1 Noise Factors and Terminology

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 20,000 Hz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called “A” weighting is typically used for quieter noise levels, which de-emphasizes the low-frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the “noise level” and is referenced in units of dBA (refer to Attachment 1 of Appendix 2.6-1 for definitions of acoustical terms).

Because sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA increase in the noise level. Changes in a community noise level of less than 3 dB are not typically noticed by the human ear (Caltrans 2013). Changes from 3 to 5 dB may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dB increase is readily noticeable. The human ear perceives a 10 dB increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual’s noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. The equivalent continuous sound level (L_{eq}), also referred to as the average sound level, is a single number representing the fluctuating sound level in A-weighted decibels (dBA) over a specified period of time. It is a sound-energy average of the fluctuating level and is equal to a constant unchanging sound of that dB level. Community noise

sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed “community noise equivalent level” (CNEL) was developed. The CNEL scale represents a time-weighted 24-hour average noise level based on the A-weighted sound level. CNEL accounts for the increased noise sensitivity during the evening hours (7 p.m. to 10 p.m.) and nighttime hours (10 p.m. to 7 a.m.) by adding 5 dB to the average sound levels occurring during the evening hours and 10 dB to the sound levels occurring during nighttime hours. Additional noise definitions are provided below.

Ambient Noise Level. The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

A-Weighted Sound Level (dBA). The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with community equivalent sound level.

Community Noise Equivalent Level (CNEL). CNEL is the A-weighted equivalent continuous sound exposure level for a 24-hour period with a 10 dB adjustment added to sound levels occurring during the nighttime hours (10 p.m.–7 a.m.) and 5 dB added to the sound during the evening hours (7 p.m.–10 p.m.).

Decibel (dB). The decibel is a unit for measuring sound pressure level and is equal to 10 times the logarithm to the base 10 of the ratio of the measured sound pressure squared to a reference pressure, which is 20 micropascals.

2.6.1.2 Environmental Setting

The Project site is located west of Nutmeg Street, along the north and south sides of Country Club Lane, within the City of Escondido (City). The Project site consists of a former country club/golf course property, and is surrounded by single-family residential development that includes detached residences on a variety of lot sizes, attached residences (duplexes) of several different densities, and several common-interest developments.

To characterize existing ambient noise levels at the Project site, four short-term noise measurements were conducted on March 2, 2017, at the locations shown in Figure 2.6-1, Noise Measurement Locations. The measured average noise levels (in dBA L_{eq}) and the concurrent traffic volumes are presented in Table 2.6-1, Measured Average Sound Levels at Roadways. Measurement results are discussed in greater detail later in this section.

Traffic on Country Club Lane, Nutmeg Street, and El Norte Parkway are the primary sources of noise in the vicinity of the Project. The existing average daily traffic (ADT) volume along Country Club Lane adjacent to the Project site is approximately 5,330 ADT; Nutmeg Street carries approximately 3,120 ADT; and West El Norte Parkway carries approximately 17,880 ADT (Appendix 2.6-1).

2.6.1.3 Regulatory Setting

State

California Environmental Quality Act

Primary environmental legislation in California is found in the California Environmental Quality Act (CEQA) and its implementing guidelines (CEQA Guidelines), which require that projects with potential adverse effects (or impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

California Noise Insulation Standards (California Code of Regulations Title 24)

The State of California noise regulations are contained in the California Code of Regulations. California Code of Regulations Title 24, Noise Insulation Standards, establishes the acceptable interior environmental noise level (45 dBA L_{dn}) for multifamily dwellings (the regulation may be extended by local legislative action to include single-family dwellings). Section 1207 of Title 24 also requires that an interior acoustical study demonstrating that interior noise levels due to exterior sources will be less than or equal to 45 dBA CNEL be performed for affected multifamily structures that are exposed to exterior noise levels in excess of 60 dBA CNEL.

Local

City of Escondido Municipal Code

The City's Noise Ordinance (Municipal Code Article 12, Noise Abatement and Control; City of Escondido 1990) contains regulations restricting land use related noise-generating activities and operations, so as to avoid a noise nuisance in the community. Section 17-228 establishes the

methods for which any sound or noise measurement shall be measured within the City. These methods apply to both indoor and outdoor measurements. Section 17-229 establishes the maximum allowable exterior noise limits, based upon the classification of the receiving land use. These standards typically apply to stationary sources such as noise from mechanical equipment (including mechanical ventilation and air condition noise, pool pump noise) or event noise, as opposed to traffic noise. For instance, a school, commercial enterprise, or industrial operation must not generate noise that exceeds a certain specified noise level at any property boundary where an adjacent residential use exists. The City's exterior property-line noise standards are presented in Table 2.6-2. The pertinent portions of Section 17-229 are listed below:

- **Section 17-229c (5a):** If the noise is continuous, the L_{eq} for any hour will be represented by any lesser time period within that hour. Noise measurements of a few minutes only will thus suffice to define the noise level.
- **Section 17-229 (5b):** If the noise is intermittent, the L_{eq} for any hour may be represented by a time period typical of the operating cycle. Measurement should be made of a representative number of noisy/quiet periods. A measurement period of not less than 15 minutes is, however, strongly recommended when dealing with intermittent noise.
- **Section 17-229c (5c):** In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as a whine, screech or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits set forth in Table 2.6-2, City of Escondido Exterior Sound Limit Levels, shall be reduced by 10 dB or to the ambient noise level when such noises are not occurring.
- **Section 17-229c (5d):** If the measured ambient level exceeds that permissible in Table 2.6-2, the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violations source is not operating.
- **Section 17-229c (5e):** The sound level limit at a location on a boundary between two land use classifications is the limit applicable to the receiving land use; provided, however, that the one-hour average sound level limit applicable to extractive industries including, but not limited to, borrow pits and mines, shall be 75 dB at the property line regardless of the zone where the extractive industry is actually located. Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located (City of Escondido 1990).

Section 17-234 regulates construction noise in the City. The pertinent portions of Section 17-234 are summarized below:

- **Section 17-234(a):** It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of seven (7) a.m. and six (6) p.m. and on Saturdays between the hours of nine (9) a.m. and five (5) p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (d) of this section.
- **Section 17-234(b):** It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the president, governor or city council as public holidays.
- **Section 17-234(d):** No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of seventy-five (75) dB at any time, unless a variance has been obtained in advance from the city manager.
- **Section 17-234(e):** Persons engaged in construction for profit or as a business shall post signs at conspicuous places on a construction site, indicating hours of work as prescribed by this article or authorized by permit and the applicable noise level limits (City of Escondido 1990).

City of Escondido General Plan

The *City of Escondido General Plan* (General Plan) Community Protection Element (Section 5, Noise) indicates that the maximum normally acceptable noise level for new single-family and duplex residential development is a community noise equivalent level (CNEL) of 60 dBA¹ (City of Escondido 2012). The range considered by the City to be conditionally acceptable for single-family and duplex residential development is 60 to 70 dBA CNEL.² The City typically applies the noise criterion of 60 dBA CNEL within the backyards of residential parcels. The City of Escondido also requires that the interior noise level not exceed 45 dBA CNEL for new residences (City of Escondido 2012).

¹ The City classifies a “normally acceptable” noise exposure as follows: “Specified land use is satisfactory, based upon the assumption that buildings involved are of normal conventional construction, without any special requirements.”

² The City classifies a “conditionally acceptable” noise exposure as follows: “New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will usually suffice.”

Community Protection Element

5. Noise

Goal 5: Protection of the community from excessive noise exposure.

Noise Policy 5.1: Require development to meet acceptable exterior noise level standards as established in Figure VI-2 [of the General Plan], and use the future noise contour map (Figure VI-17 [of the General Plan]) as a guide for evaluating the compatibility of new noise sensitive uses with projected noise levels.

Noise Policy 5.2: Apply a CNEL of 60 dB or less for single family and 65 dB or less for multi-family as goals where outdoor use is a major consideration (back yards and single family housing developments, and recreation areas in multifamily housing developments) as discussed in Figure VI-13 [of the General Plan], and recognize that such levels may not necessarily be achievable in all residential areas.

Noise Policy 5.3: Require noise attenuation for outdoor spaces in all developments where projected incremental exterior noise levels exceed those shown in Figure VI-14 [of the General Plan].

Noise Policy 5.4: Require noise attenuation for new noise-sensitive uses which include residential, daycare facilities, schools, churches, transient lodging, hotels, motels, hospitals, health care facilities, and libraries if the projected interior noise standard of 45 dBA CNEL is exceeded.

Noise Policy 5.5: Require construction projects and new development to ensure acceptable vibration levels at nearby noise-sensitive uses based on Federal Transit Administrator criteria.

Noise Policy 5.6: Require the preparation of noise studies, as deemed necessary by the Planning Department, to analyze potential noise impacts associated with new development which could significantly alter existing noise levels in accordance with provisions outlined in Figure VI-14 [of the General Plan].

Noise Policy 5.7: Encourage use of site and building design, noise barriers, and construction methods as outlined in Figure VI-15 [of the General Plan] to minimize impacts on and from new development.

Noise Policy 5.8: Require that mixed use and multi-family residential developments demonstrate that the design of the structure will adequately isolate noise between

adjacent uses (orientation, window insulation, separation of common walls, floors, and ceilings, etc.).

Noise Policy 5.9: Require new mixed use developments to locate loading areas, parking lots, driveways, trash enclosures, mechanical equipment, and other noise sources away from the residential portion of the development, when physically feasible. Use construction standards to reduce noise between uses.

Noise Policy 5.10: Require development projects that are subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible.

Noise Policy 5.11: Limit direct access from individual properties along Major Roads and Prime Arterials in residential areas in order to minimize gaps in noise barrier sound walls.

Noise Policy 5.12: Limit “through truck traffic” to designated routes to minimize noise impacts to residential neighborhoods and other noise-sensitive uses.

Noise Policy 5.13: Limit the hours of operation for parks and active recreation uses in residential areas to minimize disturbance to residents (City of Escondido 2012).

2.6.2 Analysis of Project Effects and Determination as to Significance

2.6.2.1 Methodology

Ambient Noise Monitoring

Noise measurements were conducted on site and along vicinity roadways to characterize the existing noise levels. The measurements were made with a calibrated Rion NL-52 digital integrating sound level meter. This sound level meter meets the current American National Standards Institute standard for a Type 1 precision sound level meter. For all measurements, the sound level meter was positioned on a tripod at a height of approximately 5 feet above the ground and fitted with a windscreen.

Four short-term noise measurements were conducted on March 2, 2017, at the locations shown in Figure 2.6-1, Noise Measurement Locations. Noise measurements were conducted at three locations adjacent to existing roadways on-site. ST1 was approximately 20 feet west of the edge of pavement from Nutmeg Street, south of Country Club Lane, near future residences. ST2 was approximately 25 feet north of the edge of pavement from Country Club Lane, midway between Nutmeg and La Brea, near future residences; and ST3 was approximately 300 feet from the north

edge of pavement for Country Club Lane, near the north end of the community center parcel. Additionally, a noise measurement (ST4) was conducted near the rear yard boundary for the row of residences along the west side of David Drive, to establish baseline noise conditions for reference in the construction noise analysis. With the exception of at ST4 (because of the lack of a clear view of the roadways), traffic volumes were counted concurrently with the noise measurements in order to validate the accuracy of the subsequent traffic noise modeling. The measured average noise levels (in L_{eq}) and the concurrent traffic volumes are presented in Table 2.6-1.

Noise Modeling

Traffic noise is generally assessed using software provided by the Federal Highway Administration (FHWA), the current version of which is titled Transportation Noise Model 2.5 (TNM 2.5). The worksheets in Appendix 2 of the Technical Report (Appendix 2.7-1 to this EIR) are based on the FHWA TNM 2.5 model, but provide an easier to understand format than the full model input and output data sheets (FHWA 2008). Existing traffic counts were provided by the Project traffic engineers (Linscott, Law & Greenspan) for North Nutmeg Street and West Country Club; these traffic counts were used in the FHWA model to determine the ambient noise levels along these roadways associated with current traffic levels (see Appendix 2.7-1). Table 2.6-3, Existing Ambient Noise Levels at Noise Monitoring Locations, presents the results of the noise modeling of existing traffic noise levels, at the noise measurement locations.

2.6.2.2 Guidelines for the Determination of Significance

For purposes of this EIR, Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) will apply to the direct, indirect, and cumulative impact analyses. The proposed Project would have a significant impact on noise if it would result in:

- A. The exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- B. The exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- E. For a project located within 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, exposure of people residing or working in the project area to excessive noise levels.

- F. For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

2.6.2.3 Analysis

- A. *Would the Project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Construction Impacts

Non-Blasting Impacts

Noise levels would depend on the type of construction activity, equipment, duration of the construction, distance between the noise source and receiver, and intervening structures. The City restricts the times of day when construction may occur (i.e., 7 a.m. to 6 p.m. Mondays through Fridays, 9 a.m. to 5 p.m. on Saturdays and not at all on Sundays or on public holidays) and has a maximum 1-hour average construction noise limit of 75 dBA at noise-sensitive land uses, unless a variance has been obtained in advance from the City Manager.

The construction activities for the Project would be varied by component (i.e., roadway construction/street improvements, pad grading and foundation, and building construction) and location. Based on the assemblage of equipment needed for roadway construction, the most intensive sub-phase for street improvements (grading and aggregate base) was used to represent all road construction activity. Table 2.6-4, Construction Equipment List and Distances to Sensitive Receptors, summarizes the equipment list and distances to sensitive receptors used in the analysis of construction noise levels.

Construction is anticipated to occur in four phases lasting between 8 and 13 months apiece, followed by buildout of individual residential structures, which could be spread over approximately 4 years (resulting in a total construction duration of up to 66 months), and would result in temporary increases in noise levels in the Project area on an intermittent basis.

Construction noise levels are anticipated to exceed the applicable City noise restrictions when equipment is operating less than approximately 200 feet from existing residences in the Project vicinity. Consequently, short-term construction noise would result in a **significant impact (Impact N-1)**.

Blasting Impacts

The construction of the Project will include blasting of hard rock areas, which is a major source of potential noise and vibration impacts to nearby residential receivers. At the time this noise study was prepared, the exact blasting locations were unknown. However, areas within the Project site with known hard-rock conditions that could require blasting are illustrated on Figure 2.6-2, Potential Blasting Locations.

The intensity of the noise and vibration impacts associated with rock blasting depends on location, size, material, shape of the rock, and the spacing of the charges determined to be necessary for successful fracturing. The noise produced by blasting activities is referred to as an air blast, or a pressure wave that is generated when explosive energy in the form of gases escape from the exploding blast holes. Sound from an air blasts behaves as a point source, radiating outward in a spherical pattern and attenuating at a rate of 6 dB with each doubling of distance from the blast location.

Blasting activities generally include the pre-drilling of holes in the hard rock area; preparation and placement of the charges in the drilled holes; a pre-blast horn signal; and the blast itself. The noise from the blast starts with a cracking sound from the detonator, and ends with the low crackling sound from each charge as they explode. No other construction equipment would be operating during the blast in the immediate area, but would commence once the blasting contractor indicates it is safe to do so.

At the time of this analysis, blasting materials were not yet specified. Worst-case assumptions are therefore used based on reference noise level measurements taken at a blasting site using bulk heavy ammonium nitrate/fuel oil (ANFO). The explosive ANFO charges are placed in multiple holes to fragment the rocks into smaller, crushable pieces. Further, the blasts will be single-event noise sources which occur over a few seconds, with multiple small blasts in each hole occurring milliseconds apart from each other. Once the blast is completed, normal construction activities would resume.

Noise measurements performed of blasting operations at a similar residential construction project in Chatsworth (Urban Crossroads 2017) were used as a reference noise level to characterize blasting for the Project. At a reference distance of 370 feet, the blasting noise levels reached 81.5 dBA L_{max} for 1 second over a total duration of 7 seconds for all blasts included in the event. The reference blast measurement was for an extensive blast program which probably used a greater amount of ANFO explosive material than what would be needed at the Project site. Therefore, the reference noise level measurement may conservatively overstate the noise levels of the Project site blasting activities. The shortest distance between potential blast locations and existing residences is approximately 100 feet (property lines are as close as 50 feet, but the

OSMRE standard is based upon distance to residence, rather than property line). This distance was used in determining the blast noise levels at the worst-case residential locations. Table 2.6-5, *Blasting Noise Levels at Closest Residences*, summarizes the noise level for blasting activity at the nearest residential structures to the potential blast areas.

The Escondido General Plan and Municipal Code do not identify specific construction noise level limits for blasting activities. Therefore, the OSMRE and CFR lowest maximum *Air Blast Limit* (30 CFR 816.67(b)) of 129 dBA L_{max} at nearby sensitive uses is used in this analysis as an acceptable threshold for noise levels due to blasting activity at the Project site (refer to Section 1.4.2). Based on the reference blasting noise level, the closest residential receiver will experience noise levels approaching 93 dBA L_{max} over the course of the blast, which will likely occur for only a few seconds. As required to comply with the more general construction noise limit of 75 dBA $L_{eq\ 1-HOUR}$, blasting would be limited to no more than 3 minutes within any given hour. Although some blasting noise may be noticeable to nearby residents, the single-event, temporary noise levels generated by the blast will not exceed the OSMRE and the CFR standards for air blasts, and therefore noise impacts due to blasting would be **less than significant**.

Operational Impacts

Project-Generated Noise Levels

Once operational, the Project would primarily include residential dwellings and distributed open space areas, with associated landscape maintenance that could generate limited daytime noise consistent with residential neighborhood ambient levels. However, the former ECC clubhouse would be replaced by a new resort-style Village Center and an on-site professionally managed community farm. The Village Center would have special events on occasion with guests reaching up to 300 people. Additionally, the Project would feature an on-site contemporary restaurant and bar featuring local farm-to-table produce. The Village Center would have two operating restrictions designed to limit nuisance noise that are part of the Project's Specific Plan; these are included as project design features (PDFs):

- PDF-N-1** No outdoor amplified entertainment or announcements shall be allowed after 9 p.m. on weeknights or after 10 p.m. on weekend or holiday nights.
- PDF-N-2** Maximum occupancy for special events at the meeting and banquet facilities and event courtyard shall be 300 people.

The Village Center would be separated from residences on the west by a 30-foot vegetated buffer; from residences on the east by a 20-foot road and 30-foot vegetated buffer; and from proposed new residences on the north by a 20-foot road and 30-foot vegetated buffer. Thus,

sensitive residential uses could be as close as 30 to 50 feet from noise-generating activities within the Village Center.

Potential operational noise sources associated with the Village Center include heating, ventilation, and air-conditioning (HVAC) equipment, and exterior sound amplification (e.g., public address systems).

Mechanical HVAC equipment located on the ground or on rooftops of new buildings have the potential to generate noise levels which average 64 dBA CNEL at a distance of 50 feet. 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 under “hard-surface” conditions typical of a developed commercial site. Therefore, it is assumed that HVAC equipment would generate noise levels that exceed 50 dBA within approximately 250 feet of the equipment (50 dBA is the daytime limit (7 a.m. to 10 p.m.) for residential land uses). The distance from the middle of the Village Center site to the adjacent residences to the west, north, and east is approximately 250 feet. The exact location of buildings and HVAC equipment within the Village center is unknown, but it is possible HVAC equipment could be located closer than 250 feet from existing or proposed residences, which could result in a **significant** impact (**Impact N-2**). Shielding of individual HVAC equipment with noise barriers (screen walls) would be feasible to address this impact.

Noise levels from amplified sound systems vary considerably, and depend upon the size of the area intended to be served, the crowd size, and the nature of the amplified sound (e.g., music versus voice announcements). For voice announcements, a typical speaker level is 65 dBA L_{eq} at 21 feet; for gatherings such as weddings, where dancing is included, it is assumed sound levels could reach up to 85 dBA L_{eq} at 21 feet from the speakers, which would address reasonable amplification for a general dance function (JBL 1999). Amplified sound for a wedding/dance would attenuate to 82 dBA L_{eq} at 30 feet, 77 dBA L_{eq} at 50 feet, and 63 dBA L_{eq} at 250 feet directly in front of the speakers. The location of proposed speakers, and their orientation, is not known at this time, but the potential exists for loudspeaker operation to exceed the 50 dBA L_{eq} limit at existing residences, constituting a **potentially significant** impact (**Impact N-3**). Proper placement and orientation of speakers and/or noise barriers between the loudspeaker use areas and adjacent residential properties are feasible measures to address this impact.

Future Traffic Noise Exposure at Proposed Residences

The Project would primarily be affected by traffic noise along Nutmeg Street and Country Club Lane. Internal roadways are not anticipated to carry roadway traffic volumes that would generate noise levels greater than 60 dBA CNEL at the edge of their right-of-ways. The most traffic noise

resulting from the Project would occur along Nutmeg Street adjacent to the Project, and along the segments of Country Club Lane within or adjacent to the Project boundaries.

For the segment of Country Club Lane from Golden Circle to Firestone (west segment) the closest backyard boundary is approximately 70 feet from the north roadway edge (105 feet from the center-line). For the segment of Country Club Lane from Firestone to La Brea (center segment) the closest backyard boundary is approximately 95 feet from the north roadway edge (130 feet from the center-line). For the segment of Country Club Lane from La Brea to Nutmeg (east segment) the closest backyard boundary is approximately 30 feet from the north roadway edge (65 feet from the center-line). For the segment of Nutmeg Street adjacent to the Project, the closest backyard boundary is approximately 30 feet from the west roadway edge (50 feet from the center-line). These distances were used in modeling the maximum future exterior noise exposure levels for backyards closest to these roadways. Table 2.6-6, Future Ambient Noise Levels at Residential Backyards, summarizes the future noise levels as determined from the modeling.

Traffic noise results displayed in Table 2.6-6 indicate that future traffic noise exposure levels at the closest backyard property lines would all be well under the maximum “conditionally acceptable” exterior noise level for single-family residences and duplexes of 70 CNEL dBA. However, at the closest backyard boundary in the west segment of Country Club Lane, the predicted future traffic noise level would marginally exceed the “normally acceptable” limit of 60 dBA CNEL (by 1 dB), while the closest backyards along the east segment of West Country Club Lane and along Nutmeg Street would exceed this limit by up to 5 dB CNEL. Therefore, operational impacts due to traffic noise exposure would result in a significant impact (Impact N-4). To comply with the City’s exterior noise standard for single-family and duplex rear yards, noise barriers would be required for some home lots along Country Club Way and Nutmeg Street (see Section 2.6.5 for mitigation measure). Figure 2.6-3, Noise Barrier Mitigation, provides a visual illustration of the location and height of required noise barriers.

The City and the state require that interior noise levels not exceed a CNEL of 45 dBA within residences. Typically, with the windows open, building shells provide approximately 15 dB of noise reduction, while with windows closed residential construction generally provides a minimum of 25 dB attenuation. Therefore, rooms exposed to an exterior CNEL not greater than 60 dBA would result in an interior CNEL of 45 dBA or less, even with windows open. Consequently, interior noise levels within future residences on the Project site would be expected to achieve compliance with the interior noise criterion of 45 dBA CNEL by employing standard residential construction techniques and materials. Thus, interior noise level impacts would be **less than significant**.

B. Would the Project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction Impacts

Non-Blasting Impacts

Occasional pavement-breaking activities would be performed, which would generate noise levels of 90 dBA at 50 feet from the equipment (FHWA 2006). During excavating, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks. Heavy construction equipment (e.g., bulldozer and excavator) would generate a limited amount of groundborne vibration during construction activities at short distances away from the source. Additionally, the use of this equipment would be limited to a few hours spread out over several days during demolition and/or grading activities, as to minimize any vibrational impacts, and thus would not generate excessive vibrations.

Blasting Impacts

According to the California Department of Transportation's *Transportation and Construction Vibration Guidance Manual* (Caltrans 2008), it is unusual for damage to be caused to residential structures from the vibrations caused by blasting activities, given the restrictions imposed under OSMRE (30 CFR 816.67). Steps to be followed under the OSMRE guidelines include the following:

- Identify potential problem areas surrounding the Project site.
- Determine the conditions that exist prior to commencement of construction.
- Inform the public about the Project and potential blasting-related consequences.
- Schedule the work to reduce adverse effects.
- Design the blast to reduce vibration and air over pressure.
- Use blast signals to notify nearby residents that blasting is imminent.
- Monitor and record the vibration and air overpressure effects of the blast.
- Respond to and investigate complaints.

The Caltrans *Transportation and Construction Vibration Guidance Manual* provides vibration velocity levels for various building materials susceptibility to damage. For residential structures, the threshold of damage for vibration is approximately 3.0 in/sec (PPV) for cosmetic cracking and damage. While determining the vibration levels from the blasting operations at the Project

site is difficult due to the variability of conditions (e.g., soil types) at the site, it is possible that some minor structural damage to the closest residences (i.e., within 100 feet), could occur (**Impact-N-5**). In order to prevent damage to nearby residential structures from ground vibration due to blasting, an abatement plan is required; see Section 2.6.5, Mitigation.

Operational Impacts

The Project would not have the potential to generate long-term ground-borne vibration or noise. Typical residential structures do not include equipment or activities which produce perceptible vibration levels outside the structure. Ground vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration-sensitive, although the vibrations may be felt by nearby persons in close proximity and result in annoyance (FTA 2006). As a guide, major construction activity within 200 feet and pile driving within 600 feet may be potentially disruptive to sensitive operations (Caltrans 2002). The Project construction activity would not include pile driving, and there are no sensitive operations (e.g., precision research labs) within 200 feet of the subject property boundaries. Therefore, the Project operations would not result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, and impacts would be **less than significant**.

C. Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

A “substantial” increase in ambient noise level is typically defined as a greater than 3 dB increase in the CNEL for the vicinity surrounding the Project (Caltrans 2013). Therefore, a significant impact would occur if the Project increased off-site ambient noise levels by more than 3 CNEL dBA; because it is a residential development, off-site noise impacts would be those associated with traffic related noise level increases attributable to the Project’s contribution of trips on vicinity roadways.

As discussed above, construction is anticipated to last for approximately 66 months and would result in temporary increases in ambient noise levels in the Project area on an intermittent basis. However, all impacts from construction would be temporary and would cease with completion of the Project. Therefore, the Project’s construction would not result in a substantial permanent increase in ambient noise levels. Traffic noise levels were analyzed comparing existing traffic to “existing plus project” traffic, as well as comparing Year 2035 traffic levels, without and with Project contributions. The results of the analysis are presented in Table 2.6-7, Summary of Off-Site Future Unmitigated Traffic Noise Levels. As shown in Table 2.6-7, the Project would not result in either a measurable or noticeable increase in traffic noise levels, nor would it cause or exacerbate an exceedance in City traffic noise standards. Thus, once operational the Project would not result in a substantial permanent increase in ambient noise levels, and impacts would be **less than significant**.

D. Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Construction is the most common source of temporary increases in the ambient noise levels caused by a project. The City restricts the times of day when construction may occur (i.e., 7 a.m. to 6 p.m. Mondays through Fridays, 9 a.m. to 5 p.m. on Saturdays, and not at all on Sundays or on public holidays) and has a maximum 1-hour average construction noise limit of 75 dBA at noise-sensitive land uses, unless a variance has been obtained in advance from the City manager.

Construction of the Project would take place within the hours specified in Section 17-234 of the City's Municipal Code. As illustrated in Table 2.6-8, Construction Noise Levels Summary of Results, when the entire assemblage of construction equipment is working right at the edge of the construction zone in each phase, within 50 feet of existing residences, construction noise levels are anticipated to range from 87 to 90 dBA L_{eq} . Assuming relatively steady work, this would result in an exceedance of the Escondido construction noise limit of 75 dBA L_{eq} HOUR. Thus, construction noise levels would result in a **significant** impact (**Impact N-1**); see Section 2.6.5, Mitigation

E. For a project located within 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?

F. For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

The Project is not located within an airport land use plan or within 2 miles of a public airport. The closest airport is Palomar Airport, approximately 8.75 miles southwest of the Project site. As such, impacts would be **less than significant**.

There are no private or military airports in the Project area, and there are no private airstrips within 2 miles of the Project site. Thus, impacts would be **less than significant**.

2.6.3 Cumulative Impact Analysis

The geographic scope of the cumulative impact analysis for noise is limited to areas surrounding noise-generating sources, such as roadways, because noise impacts are localized. Therefore, the functional cumulative study area chosen for assessing the Project's cumulative contribution to noise impacts was taken from the Project's Transportation Impact Assessment (Appendix 2.7-1). As described in Section 2.7, Transportation and Traffic, cumulative projects located within the City of Escondido, as well as the nearby jurisdictions of the City of San Marcos and County of San Diego, were considered as part of the analysis. In analyzing the Project's cumulative impacts, the growth rate was calculated by comparing Year 2035 forecast

volumes from the Escondido General Plan to existing (Year 2016) volumes at several locations within the Project study area. The traffic assessment includes cumulative roadway traffic evaluation within two planning horizons: Near-Term and Year 2035. To determine if the Project would contribute substantially to a potentially significant cumulative off-site noise level increase, the noise levels from Project-specific traffic generation were compared to both the Near-Term Cumulative scenario (Existing + Cumulative Projects + Project) and for the 2035 scenario (Year 2035 + Project).

Excessive Noise Levels

A cumulative noise impact would occur if development associated with cumulative projects would expose new land uses to noise levels that exceed proposed noise compatibility guidelines. Cumulative projects within the region would be subject to regulations that require compliance with noise standards, including Title 24, and the applicable Noise Ordinance and general plan policies. Under the Near-Term scenario, Project traffic noise contributions were compared to existing traffic noise levels, because this addresses the direct change from existing conditions, and is also more conservative than comparing the noise level increase against the noise levels resulting from all cumulative projects in the near term. Traffic noise levels were also analyzed for the Year 2035 cumulative scenario traffic levels, without and with Project contributions. With regard to identifying near-term traffic levels, the traffic engineer applied a growth rate to existing volumes in lieu of a specific list of projects. Per Appendix 2.7-1, a growth rate was calculated by comparing Year 2035 forecast volumes from the Escondido General Plan to existing (Year 2016) volumes at several locations within the Project study area, resulting in an average (median) growth rate of 1.9% annually. This growth rate was applied to existing volumes for a period of 5 years to reach near-term (Existing + Cumulative) volumes. The results of the noise analysis addressing the Project contribution against existing traffic noise levels, and for Year 2035, are presented in Table 2.6-7. As shown in Table 2.6-7, the Project would not result in either a measurable or noticeable increase in traffic noise levels, nor would it cause or exacerbate an exceedance in City traffic noise standards. Additionally, compliance with Title 24, the City's Noise Ordinance, and the City's General Plan policies, would ensure that the Project in combination with other cumulative projects would **not result in a cumulatively considerable impact** associated with noise levels.

Excessive Groundborne Vibration

A cumulative groundborne vibration impact would occur if one or more projects in the area would result in combined groundborne vibration that would increase vibration to a level that would result in sleep disturbance or interfere with activities at vibration-sensitive land uses (e.g., precision labs, surgical facilities). Groundborne vibration impacts could result from construction operations, railroad operations, or mining. The Project's construction activity would not include

pile driving, and there are no sensitive operations (e.g., precision research labs) within 200 feet of the subject property boundaries. Consequently, the Project **would not result in a cumulatively considerable contribution** related to excessive groundborne vibration.

Permanent Increase in Ambient Noise Levels

A cumulative noise impact would occur if construction and development associated with cumulative regional land use projects, such as those identified in adjacent city and County general plans and regional transportation plans, would result in an increase in regional traffic volumes that would cause a permanent increase in ambient noise which exceeds the applicable noise standards on roadways throughout the region. Traffic noise levels were analyzed comparing Existing traffic to “Existing Plus Project” traffic, as well as for the Year 2035 traffic levels, without and with Project contributions. As shown in Table 2.6-7, the Project would not result in either a measurable or noticeable increase in traffic noise levels, nor would it cause or exacerbate an exceedance in City traffic noise standards. Thus, the proposed Project **would not result in a cumulatively considerable contribution** related to a permanent increase in ambient noise levels.

Temporary Increase in Ambient Noise Levels

A cumulative temporary noise impact would occur if one or more cumulative projects in close proximity to one another would be constructed at the same time and result in combined construction noise levels that exceed 75 dBA. With respect to construction noise, construction sites that are located within approximately 0.25 miles of one another would have the potential to cause an increase in noise exposure levels for receptors located near each of the sites, compared to a single construction project occurring at a single point in time. Based on the list of cumulative projects analyzed in this section (as taken from the traffic report Transportation Impact Assessment, Appendix 2.7-1), it is not anticipated that another project would be actively under construction within 0.25 miles of the Project site during the Project’s construction period; however, it is conservatively assumed such a circumstance may occur in the future. As illustrated in Table 2.6-8, when the entire assemblage of construction equipment is working right at the edge of the construction zone in each phase, within 50 feet of existing residences, construction noise levels are anticipated to range from 87 to 90 dBA Leq at the property line of these existing residences. This would result in a Project-specific exceedance of the City of Escondido construction noise limit of 75 dBA Leq HOUR; assuming another construction project could occur within 0.25 miles of the Project site during this timeframe, the Project would also result in a **cumulatively considerable contribution to a cumulative impact (Impact N-CUM-1)**.

Excessive Noise Exposure from Airports

Noise related to airports is generally site specific and not cumulative in nature. The placement of a structure within the noise contours of a public airport or in close proximity to a private airstrip would not affect airport noise related to the placement of another cumulative project. The Project is not within the vicinity of a public or private airport; therefore, **no cumulative impact** would occur.

2.6.4 Significance of Impacts Prior to Mitigation

Based on the analyses in Sections 2.6.2 and 2.6.3, the Project would have the following significant impacts prior to mitigation:

- Impact N-1** When the entire assemblage of construction equipment is working right at the edge of the construction zone in each phase, within 50 feet of existing residences, construction noise levels are anticipated to range from 87 to 90 dBA L_{eq} . Assuming relatively steady work, this would result in an exceedance of the City's construction noise limit of 75 dBA L_{eq} HOUR.
- Impact N-2** The exact location of buildings and HVAC equipment within the Village Center is unknown, but it is possible HVAC equipment could be located closer than 250 feet from existing or proposed residences, which could result in HVAC noise levels at adjacent residences that exceed the City's daytime limit of 50 dBA L_{eq} for single-family residences.
- Impact N-3** The exact location and orientation of loudspeakers for amplified sound systems within the Village Center is unknown, but sound levels from a wedding event or dance function at adjacent residences that could exceed the City's daytime limit of 50 dBA L_{eq} for single-family residences.
- Impact N-4** At the closest backyard boundary in the west segment of Country Club Lane, the predicted future traffic noise level would marginally exceed the "normally acceptable" limit of 60 dBA CNEL (by 1 dB), while the closest backyards along the east segment of West Country Club Lane and along Nutmeg Street would exceed this limit by up to 5 dBA CNEL.
- Impact N-5** It is possible that some minor structural damage to the closest residences (i.e., within 100 feet), could occur as a result of blasting activities during construction of the Project.

Impact N-CUM-1 When all construction equipment is working at the edge of the construction zone in each phase, within 50 feet of existing residences, construction noise levels are anticipated to range from 87 to 90 dBA L_{eq} at the property line of these existing residences. This would result in a Project-specific exceedance of the City's construction noise limit of 75 dBA L_{eq} HOUR, and conservatively assuming another construction project may occur within 0.25 miles of the Project site during this timeframe, the Project would also result in a cumulatively considerable contribution to a cumulative impact.

2.6.5 Mitigation

Construction Noise

M-N-1 Construction noise levels are anticipated to exceed the applicable City of Escondido (City) noise restrictions when equipment is operating less than approximately 200 feet from existing residences in the Project vicinity. The following mitigation is required:

- Install temporary noise barriers around the construction site to minimize construction noise to 75 A-weighted decibels (dBA) as measured at the applicable property lines of the adjacent uses, unless an acoustical engineer submits documentation that confirms that the barriers are not necessary to achieve the attenuation levels.
- All construction equipment employing an internal combustion engine shall be equipped with suitable exhaust and intake silencers that are in good working order.
- Stationary construction equipment such as generators or compressors shall be located on site as far away from adjacent residential property boundaries as is practicable.
- Minimize, to the extent practical, the number of pieces of construction equipment operating simultaneously.

Operational Noise

M-N-2 Prior to issuance of building permits for the commercial structures to be located in the Village Center, an acoustical analysis shall be conducted to evaluate sound levels from proposed heating, ventilation, and air-conditioning equipment at the adjacent residential property lines, in order to ensure compliance with the City's daytime limit of 50 dBA equivalent continuous sound level (L_{eq}). Shielding of

equipment, selection of low-noise-generating equipment, or both shall be specified as necessary to achieve compliance with this standard.

M-N-3 Prior to issuance of building permits for the commercial structures that include outdoor sound amplification systems, an acoustical analysis shall be conducted to evaluate sound levels from use of the proposed amplification systems at the adjacent residential property lines, in order to ensure compliance with the City's daytime limit of 50 dBA L_{eq} . Location and orientation of the speakers, volume governors, and/or sound barriers between the areas with sound amplification use and adjacent residences shall be specified, as necessary, to achieve compliance with this standard.

Exterior Noise Exposure Levels for New Residences

M-N-4 To comply with the City's 60 dBA community noise equivalent level (CNEL) exterior noise standard for single-family and duplex rear yards, noise barriers would be required for some home lots along Country Club Way and Nutmeg Street within the Project boundaries; see Table M-N-1, Barrier Heights at Rearyard Boundaries, for specific locations. Placing a barrier between the sound source (roadway) and receiver location (backyard) is an effective means of reducing sound levels at the receiver. If the barrier blocks a direct line of site between receiver and sound source, the minimum attenuation is approximately 5 dB; with increasing height of the wall, effective attenuation rates up to approximately 15 dB can be achieved. A standard barrier attenuation calculation was performed to determine the minimum necessary barrier height to achieve compliance with the 60 dBA CNEL criterion. Noise barriers shall either be (1) solid masonry walls, or (2) tongue-and-groove walls with 1-inch-thick lumber. Based on future predicted traffic noise levels, barriers with the indicated heights would be required along the rearyard boundary of the residences identified in Table M-N-1.

**Table M-N-1
Barrier Heights at Rearyard Boundaries**

Roadway	Distance from Road	Required Barrier
West Country Club Road	Yard boundary greater than 75 feet from road edge	No barrier required
West Country Club Road	Yard boundary between 74 feet and 55 feet from road edge	5.5-foot-high barrier along yard boundary facing road
West Country Club Road	Yard boundary between 54 feet and 30 feet from road edge	6-foot-high barrier along yard boundary facing road

**Table M-N-1
Barrier Heights at Rearyard Boundaries**

Roadway	Distance from Road	Required Barrier
West Country Club Road	Yard boundary less than 30 feet from road edge	8-foot-high barrier along yard boundary facing road
North Nutmeg Street	Yard boundary between 50 feet and 25 feet from road edge	6-foot-barrier along yard boundary facing road (for the closest lot in row perpendicular to Nutmeg; other adjacent lots further away also protected)

Blasting Noise

While blasting, per se, is not specifically addressed under the General Plan or Municipal Code, it must comply with the general construction noise level restriction of 75 dBA L_{eq} . The following mitigation is required in order to ensure blasting noise is compliant with this standard:

M-N-5 Restrict blasting operations to no more than 3 minutes of any given hour during allowable construction time periods.

Adherence to the above mitigation during construction blasting would reduce potentially significant short-term blasting-related noise exposure impacts to less than significant levels.

Blasting Vibration

Blasting activity during construction could result in damage to the existing residential structures located in close proximity to the blast zone. The following mitigation is required:

M-N-6 To reduce adverse effects related to rock blasting, the following measures shall be adhered to:

- The blasting contractor shall design the blasts to reduce vibration velocity levels from each blast below the damage threshold of 3.0 inches per second at the closest nearby residences (i.e., as close as 100 feet from the blast area).
- A blast signal (e.g., air horn) shall be used to notify nearby residents that blasting is about to occur per the California Code of Regulations, Title 8, Section 5291 Firing of Explosives regulations.
- All complaints shall be responded to and investigated as they occur.

With incorporation of the above mitigation measures, and to the ability of the blasting contractor to limit the ground-borne vibration levels, blast-related vibration levels would be reduced to less than significant.

2.6.6 Significance of Impacts After Mitigation

Implementation of **M-N-1** during construction activities within 200 feet of existing residences, would reduce construction noise levels to below the City's construction noise limit of 75 dBA L_{eq} HOUR. Therefore, **M-N-1** would reduce potentially significant short-term construction noise exposure impacts (**Impact N-1** and **Impact N-CUM-1**) to less than significant levels.

Implementation of **M-N-2** would achieve shielding and/or equipment selection to reduce HVAC noise levels from the Village Center at adjacent residential property lines, to achieve compliance with City residential exposure standards. Likewise, **M-N-3** would stipulate the location, orientation, and volume limits for outdoor amplification systems within the Village Center, along with sound barriers as necessary, to achieve compliance with the City of Escondido residential exposure standards. Consequently, **M-N-2** and **M-N-3**, as well as **PDF-N-1** and **PDF-N-2**, which include operating restrictions as part of the Specific Plan, would reduce **Impact N-2** and **Impact N-3**, respectively, to less than significant levels.

Implementation of **M-N-4** would provide noise barriers along the rear yard boundary of residences some home lots along Country Club Way and Nutmeg Street.. This would reduce exterior noise exposure (**Impact N-4**) to below the City's 60 dBA CNEL exterior noise standard for single-family and duplex rear yards by providing a barrier between construction activities and residences that would dissipate the noise before it reaches the residences. Thus, with implementation **M-N-4**, **Impact N-4** would be reduced to less than significant.

Implementation of **M-N-5** and **M-N-6** would ensure that impacts related to blasting noise and vibration (**Impact N-4**) are reduced to less than significant by implementing limits to the duration of blasting, requiring notification prior to blasting, and designing blasts to reduce vibration.

Table 2.6-1
Measured Average Sound Levels at Roadways

Site	Description	Date/Time	Leq (dBA)	Cars	MT	HT
ST1	West side of Nutmeg Street	3/2/2017 10:50 a.m. to 11:00 a.m.	61.4	48	0	1
ST2	North side of Country Club Lane	3/2/2017 11.05 a.m. to 11:15 a.m.	53.4	28	0	0
ST3	North End of Community Center Parcel	3/2/2017 10.35 a.m. to 10:45 a.m.	49.4	12	0	0
ST4 ^a	Residences on the west side of David Drive	3/2/2017 10.30 a.m. to 11:30 a.m.	56.6	n/a	n/a	n/a

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; MT = medium trucks; HT = heavy trucks; ND = not determined.

^a Vehicle counts were not conducted at this location because the view of traffic was obstructed by buildings.

**Table 2.6-2
City of Escondido Exterior Property-Line Noise Limits**

Receiving Land Use Category	Noise Level (dBA)	
	10 p.m. to 7 a.m. (Weekdays)	7 a.m. to 10 p.m. (Weekdays)
	10 p.m. to 8 a.m. (Weekends)	8 a.m. to 10 p.m. (Weekends)
All residential (except multiple dwelling)	45	50
Multiple dwelling residential	50	55
Commercial	55	60
Light industrial/industrial park zones	70	70
General industrial	75	75

dBA = A-weighted decibels.

**Table 2.6-3
Existing Ambient Noise Levels at Noise Monitoring Locations (dBA)**

Measurement Location	Noise Source	Leq Daytime	CNEL
ST-1	North Nutmeg Street	64	65
ST-2	West Country Club Lane	60	60
ST-3	West Country Club Lane	49	49

**Table 2.6-4
Construction Equipment List and Distances to Sensitive Receptors**

Roadway Construction		
<i>Equipment Needed</i>	(2) Scraper (2) Road Grader (1) Front End Loader (1) Roller (1) Dump Truck	Distances to Receivers: Closest Property Line: 50 Feet Acoustic Center to Property Line: 200 feet
Pad Earthwork / Foundation		
<i>Equipment Needed</i>	(1) Front End Loader (1) Dozer (1) Excavator (1) Compactor (2) Backhoe (1) Grader (2) Dump Truck (2) Pick-Up Trucks	Distances to Receivers: Closest Property Line: 50 Feet Acoustic Center to Property Line: 200 feet

**Table 2.6-4
Construction Equipment List and Distances to Sensitive Receptors**

Roadway Construction		
<i>Equipment Needed</i>	(2) Scissor Lifts (2) Concrete Mixer Truck (1) Concrete Pump Truck (1) Flat Bed Truck (10) Compressors (2) Pneumatic Tools (2) Pick-Up Trucks	Distances to Receivers: Closest Property Line: 50 Feet Acoustic Center to Property Line: 200 feet

**Table 2.6-5
Blasting Noise Levels Summary at Closest Residences**

Construction Activity	Blasting Noise Level @ 100 Feet (Closest Residence) dBA L _{EQ}	Blasting Noise Level @ 200 Feet (Acoustic Center) dBA L _{EQ}
Rock blasting	93	87

dBA = A-weighted decibels; L_{eq} = equivalent continuous sound level.

**Table 2.6-6
Future Ambient Noise Levels at Residential Backyards**

Receptor Location	Noise Source	Distance from Roadway	CNEL
Backyard, Country Club Lane West	West Country Club Lane	70 feet	61
Backyard, Country Club Lane Center	West Country Club Lane	95 feet	60
Backyard, Country Club Lane East	West Country Club Lane	30 feet	65
Backyard, North Nutmeg Street	North Nutmeg Street	30 feet	65

**Table 2.6-7
Summary of Off-Site Future Unmitigated Traffic Noise Levels**

Street	Segment	dBA CNEL					
		Existing	Existing with Project	Change	2035	2035 with Project	Change
Country Club Ln	El Norte to Country Club Ln	59.1	60.1	1.0	61.7	62.3	0.6
	Country Club Ln to Gary	57.6	58.2	0.6	61.0	61.2	0.2
	Gary to La Brea	58.3	59.5	1.2	61.0	61.6	0.6
	La Brea to Nutmeg St	58.4	59.4	1.0	61.4	61.9	0.5
	Nutmeg St to Centre City Pkwy	60.9	61.4	0.5	61.9	62.2	0.3

**Table 2.6-7
Summary of Off-Site Future Unmitigated Traffic Noise Levels**

Street	Segment	dBA CNEL					
		Existing	Existing with Project	Change	2035	2035 with Project	Change
El Norte Pkwy	Woodland Park to Country Club Ln	64.2	64.3	0.1	64.2	64.3	0.1
	Country Club to Bennett	63.2	63.4	0.2	63.7	63.8	0.1
	Bennett to Rees	63.7	63.8	0.1	65.3	65.3	0.0
	Rees to Nutmeg St	63.7	63.8	0.1	65.6	65.6	0.0
	Nutmeg St to I-15 Ramps	66.2	66.3	0.1	67.3	67.4	0.1
	I-15 to Morning View	65.2	65.3	0.1	66.1	66.1	0.0
	Morning View to Centre City Pkwy	65.2	65.3	0.1	66.7	66.7	0.0
	Centre City Pkwy to Broadway	65.2	65.3	0.1	66.1	66.1	0.0
Nutmeg St	North of Country Club Ln	56.1	56.1	0.0	60.8	60.8	0.0
	Country Club Ln to Via Alexander	59.9	60.2	0.3	60.8	61.0	0.2
	Via Alexander to El Norte Pkwy	59.9	60.2	0.3	61.2	61.3	0.1

dBA = A-weighted decibels; CNEL = community noise equivalent level.

**Table 2.6-8
Construction Noise Levels Summary of Results**

Construction Component	Construction Noise Level @ 50 Feet (Closest Residence) dBA L _{eq}	Construction Noise Level @ 200 Feet (Acoustic Center) dBA L _{eq}
Road building	87	75
Building pad/foundation	88	75
Residential structures	90	78

dBA = A-weighted decibels; L_{eq} = equivalent continuous sound level.

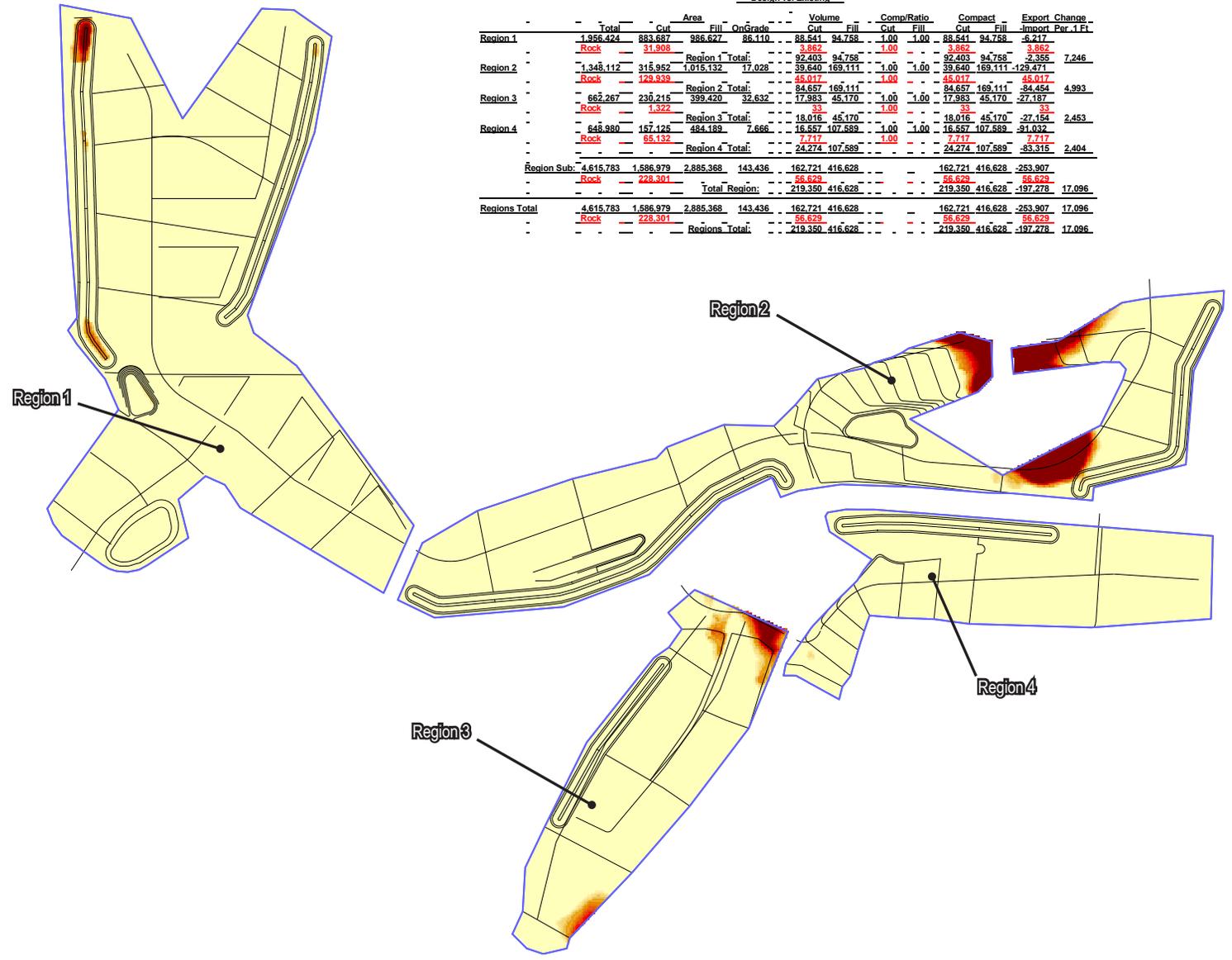


FIGURE 2.6-1
Noise Measurement Locations

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Volume Report
 Design vs. Existing

	Total	Area		Volume		Comp/Ratio		Compact		Export Change	
		Cut	Fill	OnGrade	Cut	Fill	Cut	Fill	Import	Per. 1 Ft	
Region 1	1,356,424	883,687	286,627	86,110	88,541	94,758	1.00	1.00	88,541	94,758	-6,217
Rock		31,909			3,852		1.00		3,852		3,852
Region 1 Total:					92,403	94,758			92,403	94,758	-2,355
Region 2	1,348,112	315,952	1,015,132	17,028	39,640	169,111	1.00	1.00	39,640	169,111	-129,471
Rock		129,939			45,017		1.00		45,017		45,017
Region 2 Total:					84,657	169,111			84,657	169,111	-84,454
Region 3	662,267	230,216	399,420	32,632	17,983	45,170	1.00	1.00	17,983	45,170	-27,187
Rock		1,322			33		1.00		33		33
Region 3 Total:					18,016	45,170			18,016	45,170	-27,154
Region 4	648,980	157,125	494,189	7,666	16,557	107,589	1.00	1.00	16,557	107,589	-91,032
Rock		65,132			7,717		1.00		7,717		7,717
Region 4 Total:					24,274	107,589			24,274	107,589	-83,315
Region Sub:	4,615,783	1,586,979	2,885,368	143,436	162,721	416,628			162,721	416,628	-253,907
Rock		228,301			56,629				56,629		56,629
Total Region:					219,350	416,628			219,350	416,628	-197,278
Regions Total	4,615,783	1,586,979	2,885,368	143,436	162,721	416,628			162,721	416,628	-253,907
Rock		228,301			56,629				56,629		56,629
Regions Total:					219,350	416,628			219,350	416,628	-197,278



SOURCE: J.T. Krueer & Co. (2017)



The Villages - Escondido Country Club EIR

FIGURE 2.6-2
 Potential Blasting Locations

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Land Use	Count	Area (SF)	Area (AC)
35' x 73' SFD	78	219,624	5.0
45' x 75' SFD	126	475,330	10.9
45' x 95' SFD	109	607,379	13.9
6-PAC SFD/SFA	13	277,848	6.4
Basin	9	260,760	6.0
Community Center	2	230,896	5.3
Conveyance Channel	5	337,961	7.8
Other Open Space	41	1,443,789	33.1
Private Drives	11	45,494	1.0
Public Streets	5	863,747	19.8
TOTAL:		4,762,828	109.3

5.9 (Gross)

- Legend**
- ECC Boundary
 - Lot Lines
 - 35' x 73' SFD
 - 45' x 75' SFD
 - 45' x 95' SFD
 - 6-PAC SFD/SFA
 - Basin
 - Community Center
 - Conveyance Channel
 - Other Open Space
 - Private Drives
 - Public Streets

- Proposed Sound Wall**
- 8'
 - 6'
 - 5.5'



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