

## 4.7 NOISE

This section evaluates the proposed project's potential impact on existing local noise conditions. Both temporary construction noise and long-term noise generated by operation of the proposed project are evaluated.

### 4.7.1 Setting

**a. Overview of Sound Measurement.** Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

The sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dB change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from point sources such as industrial machinery. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dB per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dB per doubling of distance.

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the daytime. Two commonly used noise metrics – the Day-Night average level (Ldn) and the Community Noise Equivalent Level (CNEL) – recognize this fact by weighting hourly Leqs over a 24-hour period. The Ldn is a 24-hour average noise level that adds 10 dB to actual nighttime (10:00 PM to 7:00 AM) noise levels to account for the greater sensitivity to noise during that time period. The CNEL is identical to the Ldn, except it also adds a 5 dB penalty for noise occurring during the evening (7:00 PM to 10:00 PM).



**b. Sensitive Receptors.** Noise sensitive receptors are land uses that are considered more sensitive to noise than others. Residences, hospitals, schools, guest lodging, and libraries are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than manufacturing or industrial uses that are not subject to effects such as sleep disturbance. The nearest sensitive uses are single-family residences located approximately 320 feet southwest of the project site; senior housing and assisted living uses located adjacent to and within 75 feet of the project site; institutional uses such as the Peninsula Community Church (including preschool) located directly across Crestridge Road approximately 100 feet from the project site, the Congregation Ner Tamid (including preschool) located directly adjacent to and approximately 25 feet from the project site’s northwestern boundary, and the Rancho Palos Verdes Preschool and Kindergarten located approximately 175 feet east of the project site; and the Vista Del Norte Ecological Preserve (an undeveloped open space recreational use) located directly adjacent to the project site to its north.

**c. Fundamentals of Groundborne Vibration.** Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the U.S., is referenced as vibration decibels (VdB).

The background vibration velocity level in residential and educational areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The general human response to different levels of groundborne vibration velocity levels is described in Table 4.7-1.

**Table 4.7-1  
 Human Response to Different Levels of Groundborne Vibration**

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: Federal Railroad Administration, 1998.



**c. Regulatory Setting.** The Sensory Environment section of the Urban Environment Element of the City of Rancho Palos Verdes General Plan (1975) contains a Noise section that provides a description of existing noise levels and sources. The Noise section includes a Noise Level Contour and several policies on noise and acceptable noise levels. The project site is not within the 60 dBA arterial roadway noise contour (the closest of which is along Crenshaw Boulevard, which is located approximately 215 feet southeast of the project site) or the 45 dBA recreational facility contour. Although the City has not adopted a Noise Ordinance, to implement the City’s noise policies, the City’s Municipal Code contains a number of separate provisions that regulate or limit noise production in the City. Table 4.7-2 identifies the section and noise topic included in the City’ Municipal Code.

**Table 4.7-2  
City of Rancho Palos Verdes  
Existing Noise Regulations**

<b>Code Section</b>	<b>Topic</b>
6.04.060	Prohibition on persistent animal noises that disturb the peace.
8.20.120	Noise Controls applicable to solid waste collection
9.24	Unruly Parties and Gathering; recovery of law enforcement expenses
10.04.040	Limitation on Off-road vehicle operation that disturbs the peace
17.08.030 C.	Home occupation standards prohibiting activities injurious to neighboring properties for reasons of noise
17.12.030 F.	Limitation on commercial uses regarding deliveries, trash pick-up, parking lot trash sweepers, operation of machinery or mechanical equipment can exceed sixty-five (65) dBA, as measured from the closest property line shall only be allowed on commercial properties which abut a residential district, between the hours of seven a.m. and seven p.m., Monday through Sunday.
17.48.030 E.3. b	65 DB limitation on minor structures and mechanical equipment
17.56.020	Restricts the hours of operation for construction equipment to between the hours 7 a.m. and 7 p.m. Monday through Saturday. No work is allowed to occur on Sunday. A Special Construction Permit could be obtained to allow work on Federal holidays and Sundays during the permitted hours stated above.
17.60.050	Conditional Use Permit Standards and conditions to protect against noise impacts
17.62.060	Special Use Permit Standards and conditions to protect against noise impacts
17.60.040 G. 4.	Grading Permits – conditions of approval to address noise impacts of grading activities

*Source: Rancho Palos Verdes Municipal Code*

For the most part existing noise regulations have no numerical standards, but restrict unnecessary or excessive noise within the City limits. As recommended by the General Plan Noise Element, the maximum “normally acceptable” noise level for residential areas is 60 dBA CNEL and 70 dBA CNEL for recreational areas (See Table 4.7-3). A “normally acceptable” noise level means that the specified land use would be compatible based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



**Table 4.7-3  
 Land Use Compatibility for Noise Environments**

Land Use Category	Community Noise Exposure Level			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Low Density, Single-Family, Duplex, Mobile Homes	50-60	55-70	70-75	75-85
Residential – Multiple Family	50-65	60-70	70-75	70-85
Transient Lodging – Motel, Hotels	50-65	60-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	NA	50-70	NA	65-85
Sports Arenas, Outdoor Spectator Sports	NA	50-75	NA	70-85
Playgrounds, Neighborhood Parks	50-70	NA	67.5-75	72.5-85
Golf Courses, Riding Stable, Water Recreation, Cemeteries	50-75	NA	70-80	80-85
Office Buildings, Business Commercial and Professional	50-70	67.5-77.5	75-85	NA
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	NA

Source: Office of Noise Control, California Department of Health

Notes: NA - Not Applicable

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

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

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

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

Federal Railway Administration. The Federal Railway Administration has developed vibration impact thresholds for noise-sensitive buildings, residences, and institutional land uses. These thresholds are 80 VdB at residences and buildings where people normally sleep (e.g., nearby residences) and 83 VdB at institutional buildings (e.g., schools and churches). These thresholds apply to conditions where there are an infrequent number of events per day.<sup>1</sup>

**d. Existing Noise Conditions and Sources.** The most common sources of noise in the project vicinity are transportation-related, such as automobiles, trucks, and motorcycles. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to areas sensitive to noise exposure. The primary sources of roadway noise near the project site are Crestridge Road, adjacent to the south side of the project site, and Crenshaw Boulevard, located approximately 215 feet southeast of the project site. Weekday afternoon 20-minute noise

<sup>1</sup> “Infrequent events” is defined by the Federal Railroad Administration as being fewer than 70 vibration events per day.



measurements were taken using an ANSI Type II integrating sound level meter on June 22, 2012. Results of the noise monitoring are shown in Table 4.7-4 and locations of noise measurements are shown on Figure 4.7-1. Complete noise monitoring data can be found in Appendix F.

**Table 4.7-4  
Existing Noise Monitoring Results**

Measurement Identification Number	Measurement Location	Primary Noise Source	Approximate Distance to Primary Noise Source	Leq (dBA)	Nearest Sensitive Receptor
1	Southern project site boundary near existing residences at Belmont Village Senior Living Facility	Traffic on Crestridge Road	35 feet from center line	68.4	Preschool
2	Southern central portion of the project site facing Crestridge Road	Traffic on Crestridge Road	170 feet from center line	62	Preschool
3	Southeast project site boundary near existing residences at Mirandela Senior Apartments	Traffic on Crestridge Road	45 feet from center line	65.9	Multiple family residences

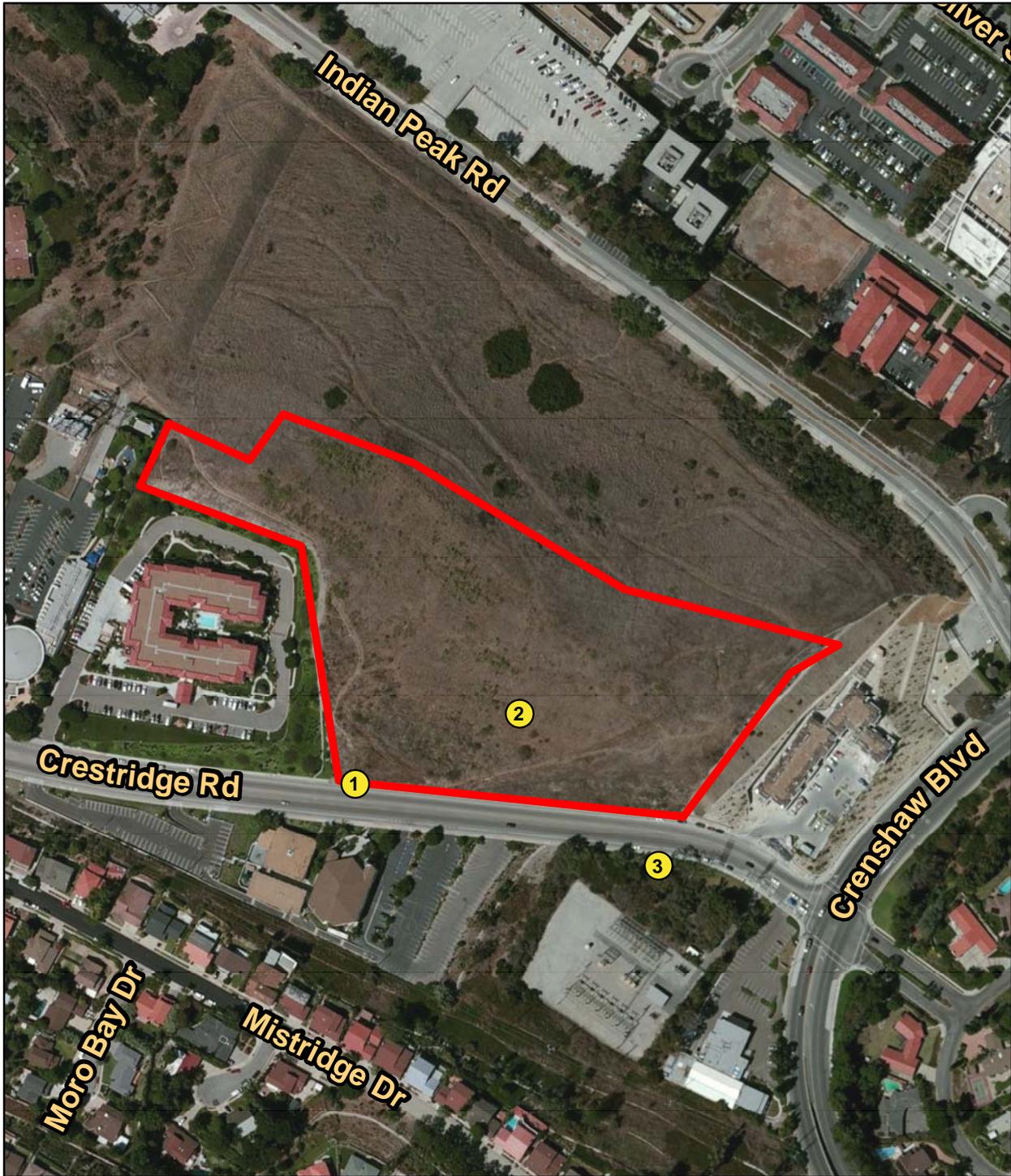
*Source: Field measurements using ANSI Type II Integrating sound level meter. See Appendix F for noise monitoring data sheets*

## 4.7.2 Impact Analysis

**a. Methodology and Significance Thresholds.** Noise levels associated with existing and future traffic along area roadways were calculated using standard noise modeling equations adapted from the Federal Highway Administration Traffic Noise Model (TNM) Lookup Table software (version 2.0) noise prediction model (noise modeling data sheets can be viewed in Appendix F). The model calculations are based on traffic data from the traffic study completed for the proposed project (see Appendix G). Cumulative conditions consider pending development within the City as indicated in Section 3.0, *Environmental Setting*, Table 3-1.

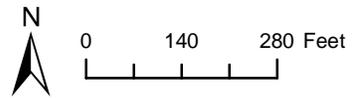
For traffic-related noise, impacts are considered significant if project-generated traffic results in exposure of sensitive receptors to unacceptable noise levels based on the May 2006 Transit Noise and Vibration Impact Assessment guidelines created by the Federal Transit Administration (FTA). Table 4.7-5 shows the FTA recommendations for identifying significant changes in noise. These thresholds apply to both the noise generated by the project alone and cumulative noise increases. If sensitive receptors would be exposed to traffic noise increases exceeding the criteria below, impacts would be considered significant.





Bing Maps Aerial: (c) 2010 Microsoft Corporation and its data suppliers. Parcel data from Los Angeles County Assessor, August, 2010.

-  Project Site
-  Noise Measurements Location



Noise Measurements Locations

Figure 4.7-1

**Table 4.7-5  
 Significance of Changes in Operational  
 Roadway Noise Exposure**

Ldn or Leq in dBA	
Existing Noise Exposure	Allowable Noise Exposure Increase
45-50	7
50-55	5
55-60	3
60-65	2
65-70	1
75+	0

*Source: Federal Transit Administration (FTA), May 2006  
 These thresholds apply to exposure of noise sensitive receivers  
 to the specified noise level increases.*

Operational Activities – Long Term. Given that the City of Rancho Palos Verdes does not have an adopted quantitative noise ordinance to control noise levels associated with project operations, the thresholds contained herein are based on the Rancho Palos Verdes Municipal Code (RPVMC) sections that limit certain activities and the noise compatibility matrix identified above in Table 4.7-3. According to Section 17.48.030 E.3. b of the RPVMC, as identified above in Table 4.7-2, the proposed residential project would be subject to the 65 dB limitation on minor structures and mechanical equipment as measured at the closest residential property line. Additional noise associated with operation of the project would mainly be generated by additional vehicular trips generated by the project. There are no quantitative thresholds available for the amount of noise these activities may produce. Therefore, for this analysis, significant impacts would occur if noise associated with the operation of the project would create, maintain, or cause the sound level, measured on any other property, to exceed the “normally acceptable” levels outlined in the noise compatibility matrix on Table 4.7-3 of 60 dBA CNEL for single family residential uses, 65 dBA CNEL for multiple family residential receptors, and 75 dBA CNEL for recreational receptors.

Construction Activities – Short Term. Construction noise was estimated based on noise level estimates from the Federal Highway Administration (FHWA) Construction Noise Handbook (Updated May 2010). Although the City does not have established quantitative thresholds for construction noise, for this analysis project-related construction would result in significant impacts if it occurred outside of the hours identified in the City’s Municipal Code (17.56.020), which are 7:00 a.m. to 7:00 p.m., Monday through Saturday, or substantially exceeded typical maximum construction noise levels of approximately 85 dBA at sensitive receptors.

Groundborne Vibration. The City of Rancho Palos Verdes has not adopted specific thresholds for groundborne vibration impacts. Therefore, this analysis uses the Federal



Railway Administration's vibration impact thresholds for sensitive buildings to determine whether groundborne vibration would be "excessive." A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Therefore, the Federal Railway Administration recommends an 80 VdB threshold at residences and buildings where people normally sleep (e.g., nearby residences) and 83 VdB at institutional buildings (e.g., the Peninsula Community Church and the Congregation Ner Tamid).

**b. Project Impacts and Mitigation Measures.**

**Impact N-1** Project construction would intermittently generate high noise levels on and adjacent to the site. However, the project would be required to comply with the City's regulations pertaining to the allowable timing of construction activities, and construction noise would not be expected to exceed typical levels associated with grading and construction. Therefore, impacts would be Class III, less than significant.

Nearby noise-sensitive land uses would be exposed to temporary construction noise during development of the proposed project. Such uses include single-family residences located approximately 320 feet southwest of the project site; multiple family uses located adjacent to and within 75 feet of the project site; institutional uses such as the Peninsula Community Church (including preschool) located directly across Crestridge Road approximately 100 feet from the project site, the Congregation Ner Tamid (including preschool) located directly adjacent to and within 25 feet of the project site's northwestern boundary, and the Rancho Palos Verdes Preschool and Kindergarten located approximately 175 feet east of the project site; and the Vista Del Norte Ecological Preserve (an undeveloped open space recreational use) located directly adjacent to the project site to its north. While the preschool at Congregation Ner Tamid is 25 feet from the project site boundary, this part of the project site would be subject to only minor earth moving and construction with small equipment in order to construct the community gardens proposed on this part of the site. This sensitive receptor would be approximately 365 feet from the nearest major on-site grading or construction. Noise impacts are a function of the type of activity being undertaken and the distance to the receptor location.

As indicated in Section 2.0, *Project Description*, the proposed project would involve the development of a senior-restricted (55+ years of age or older) for-sale residential community. The proposed project would include 60 attached residential units at an overall density of 6.15 units per acre. Construction of the project would require grading and building activities with the potential to affect nearby receptors. The existing slope would be excavated to accommodate flat building pads stepping gradually upward, and much of the ridge itself would be removed and graded generally flat.

Table 4.7-6 shows typical noise levels associated with activities during various phases of construction at a distance of 50 feet from the noise source. Typical construction noise levels range from about 75 to 79 dB. The grading/excavation phase of project construction tends to be the shortest in duration and create the highest construction noise levels because of the operation of heavy equipment, although it should be noted that only a limited amount of equipment can operate near a given location at a particular time. Equipment typically used during this stage



includes heavy-duty trucks, backhoes, bulldozers, excavators, front-end loaders, and scrapers. Operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings. Other primary sources of noise would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

**Table 4.7-6  
 Typical Noise Levels at Construction Sites**

Construction Phase	Type of Equipment	Average Noise Level at 50 Feet
Clearing	Rubber tired dozers Tractors/Loaders/Backhoes Water Trucks	84 dBA
Excavation and Grading	Graders Excavators Compactors Rubber tired dozers Tractors/Loaders/Backhoes Water Trucks	85 dBA
Foundation/Conditioning	Graders Rubber tired dozers Tractors/Loaders/Backhoes Water Trucks	85 dBA
Laying Subbase, Paving	Cement and Mortar Mixers Pavers Rollers Tractors/Loaders/Backhoes	81 dBA
Finishing and Cleanup	Forklifts Tractors/Loaders/Backhoes	84 dBA

Source: FHWA Highway Construction Noise Handbook, 2010.

As indicated above, construction noise generally attenuates by about 6 dB per doubling of distance. The nearest receptors are multiple family residences and institutional uses within approximately 75 feet of the limits of major grading and construction when measured from the property line, which is less than the doubling of the 50-foot distance referenced in Table 4.7-6. Therefore, the maximum noise level at both the nearby multiple family residences and institutional uses during clearing and excavation activities would be somewhat lower than 85 dBA, but higher than 79 dBA.

Construction impacts would be reduced by being restricted to daytime hours when ambient noise levels (as shown in Table 4.7-4) are higher than at night and construction noise would not typically interfere with sleep. The City's Municipal Code Section 17.56.020 allows construction,



grading, or landscaping activities, or the operation of heavy equipment, to occur only between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, and prohibits them any other time and on legal holidays and Sundays. The proposed project would be required to comply with these regulations, which would reduce this impact to a less than significant level. However, mitigation measures are recommended to further reduce construction noise impacts on nearby sensitive receptors.

Mitigation Measures. Impacts would be less than significant; nonetheless, the following recommended mitigation measures would reduce the temporary noise levels associated with project construction.

**N-1(a) Noise Mitigation and Monitoring Program.** The applicant shall provide, to the satisfaction of the Community Development Director, a Noise Mitigation and Monitoring Program that requires all of the following:

- Construction contracts that specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- That property owners and occupants located within 0.25 miles of the project site shall be sent a notice, at least 15 days prior to commencement of construction of each phase, regarding the construction schedule of the project. All notices shall be reviewed and approved by the Community Development Director prior to the mailing or posting and shall indicate the dates and duration of construction activities, as well as provide a contact name and telephone number where residents can inquire about the construction process and register complaints.
- That prior to issuance of any Grading or Building Permit, the Applicant shall demonstrate to the satisfaction of the City's Building Official how construction noise reduction methods such as shutting off idling equipment and vehicles, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging and parking areas and occupied residential areas, and electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- That during construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

**N-1(b) Construction Vehicle Idling.** During demolition, construction and/or grading operations, trucks shall not park, queue and/or idle at the



project site or in the adjoining public rights-of-way before 7:00 am, Monday through Saturday, in accordance with the permitted hours of construction.

- N-1(c) Staging Area.** The construction contractor shall provide staging areas onsite to minimize off-site transportation of heavy construction equipment. These areas shall be located to maximize the distance between activity and sensitive receptors (neighboring residences and institutional uses). This would reduce noise levels associated with most types of idling construction equipment.
- N-1(d) Diesel Equipment Mufflers.** All diesel equipment shall be operated with closed engine doors and shall be equipped with factory-recommended mufflers.
- N-1(e) Electrically-Powered Tools and Facilities.** Electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.
- N-1(f) Restrictions on Excavation and Foundation/Conditioning.** Excavation, foundation-laying, and conditioning activities shall be restricted to between the hours of 10:00 AM and 3:00 PM, Monday through Friday and located to maximize the distance between activity and sensitive receptors (neighboring residences and institutional uses).
- N-1(g) Additional Noise Attenuation Techniques.** For all noise-generating construction activity on the project site, additional noise attenuation techniques shall be employed to reduce noise levels to the maximum extent feasible. Such techniques may include, but are not limited to, the use of sound blankets on noise generating equipment and the construction of temporary sound barriers between construction sites and nearby sensitive receptors.

Significance After Mitigation. Although the abovementioned measures would reduce construction noise levels at nearby receptors, short-term construction noise impacts to the closest sensitive receptors would remain significant and unavoidable.

- Impact N-2 Project construction activities could generate intermittent levels of groundborne vibration affecting residences and buildings adjacent to the project site. However, these impacts are temporary in nature and would not exceed existing thresholds. Therefore, impacts would be Class III, less than significant.**

Construction activities that would occur at the project site have the potential to generate low levels of groundborne vibration. Table 4.7-7 identifies various vibration velocity levels for the types of construction equipment that would operate at the project site during construction activities.



Based on the information presented in Table 4.7-7, vibration levels could reach approximately 73 VdB at the existing residences located within approximately 75 feet of the project’s limits of major grading. This would be less than the groundborne velocity threshold level of 80 vibration decibels (VdB) established by the Federal Railway Administration for noise-sensitive buildings, residences, and institutional land uses where people normally sleep. In addition, construction activities and their associated vibration levels would be limited to daytime hours between 7:00 AM to 7:00 PM Monday through Saturday in accordance with the City’s Municipal Code Section 17.56.020. The proposed project is required to comply with these regulations. Therefore, construction activities would not occur during recognized sleep hours for residences. As such, construction vibration impacts to residential uses within approximately 75 feet of the project site would be less than significant.

**Table 4.7-7  
 Vibration Source Levels for Construction Equipment**

Equipment	Approximate VdB				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	87	78	76	73	69
Loaded Trucks	86	77	4	71	68
Jackhammer	79	70	67	65	61
Small Bulldozer	58	48	46	43	39

*Source: Harris Miller Miller & Hanson, Inc., Transit Noise and Vibration Assessment, April 1995 (Prepared for USDOT Federal Transit Administration).*

Construction activities would also have the potential to generate groundborne vibration at institutional buildings such as the Peninsula Community Church and preschool located across Crestridge Road approximately 100 feet south of the limits of major grading and construction, the Rancho Palos Verdes Preschool and Kindergarten located approximately 175 feet east of the limits of major grading and construction, and the Congregation Ner Tamid and preschool located approximately 365 feet west of the limits of major grading and construction. As discussed above, the Federal Railway Administration recommends an 80 VdB threshold at residences and buildings where people normally sleep (e.g., nearby residences) and 83 VdB at institutional buildings (e.g., the Peninsula Community Church and the Congregation Ner Tamid). As shown in Table 4.7-7, vibration velocity levels at 100 feet from the limits of grading would be approximately 69 VdB. This level would be below the 80 VdB and 83 VdB thresholds, and impacts would be less than significant.

Mitigation Measures. Impacts would be less than significant without mitigation. Standard mitigation measures N-1(b) and N-1(e) listed under impact N-1 would further reduce impacts.

Significance After Mitigation. Impacts would be less than significant without mitigation.



**Impact N-3 Project-generated traffic would incrementally increase noise levels on area roadways. However, the increase in noise would not exceed significance thresholds and would therefore be Class III, less than significant.**

The proposed project would increase the number of vehicle trips to and from the project site, which would incrementally increase traffic noise on area roadways. The project would therefore incrementally increase noise at neighboring uses. The street network surrounding the project vicinity is lined with residential uses and other noise-sensitive receptors in many locations. Estimated p.m. peak hour traffic values from the Traffic Study (see Appendix G), were used to model the change in noise levels resulting from increased traffic for both the existing and future conditions because they represent the busiest traffic conditions. Table 4.7-8 illustrates the increase in roadway generated noise along the studied roadways.

**Table 4.7-8  
 Project Contribution to Roadway Noise Levels<sup>1</sup>**

Receptor Location	Existing	Existing Plus Project	Project Increase Compared to Existing Traffic (dB)	Future	Future Plus Project	Project Increase Compared to Future Traffic (dB)
1. Crestridge Road between Crenshaw Blvd and Highridge Road	69.0	69.1	+0.1	69.1	69.3	+0.2
2. Crenshaw Blvd between Crest Road and Crestridge Road	72.1	72.1	+0.0	72.6	72.6	+0.0
3. Crenshaw Blvd between Crestridge Road and Indian Peak Road	73.9	73.9	+0.0	74.3	74.3	+0.0
7. Highridge Road between Crestridge Road and Hawthorne Blvd	69.7	69.7	+0.0	70.1	70.1	+0.0

Source: See Appendix F for Federal Highway Administration's Traffic Noise Model 2.5 noise Lookup Table modeling data sheets.

<sup>1</sup> Noise levels are as modeled at edge of standard roadway (32.8 feet from centerline).

As indicated in Table 4.7-8, the highest noise level increase for both the existing and future scenarios would be 0.2 dB along Crestridge Road. This is less than the 1 dB threshold for significant increases in noise as shown in Table 4.7-5. Therefore, project-generated traffic noise impacts on noise-sensitive receptors along these streets would be less than significant.

Mitigation Measures. Mitigation is not required since significant impacts have not been identified.



Significance After Mitigation. Impacts would be less than significant without mitigation.

**Impact N-4**    **Operation of the proposed project would generate noise levels that may periodically be audible to existing uses near the project site. Onsite noise sources would include parking lot noise, deliveries and other service vehicles, visitors, and onsite machinery. However, noise from these sources would be below the thresholds used for this analysis and consistent with City Codes. Therefore, impacts would be Class III, less than significant.**

Existing sensitive receptors, including the residences adjacent to the east and west sides of the project site and the users of the institutional uses to the east, west and south of the site, may periodically be subject to noise associated with operation of the proposed project, including noise from parking lots (such as conversations, doors slamming, car radios, car alarm chirps, etc), delivery trucks, visitors, and onsite machinery such as air conditioning units. Typical noise levels associated with the various operational or activities are summarized in Table 4.7-9.

“Normally acceptable” noise levels for various land uses are outlined in the noise compatibility matrix on Table 4.7-3, and are 60 dBA CNEL for single family residential receptors; 65 dBA CNEL for multiple family residential receptors; 70 dBA CNEL for schools, churches, and nursing homes; and 75 dBA CNEL for recreational receptors. The closest noise-sensitive receptors are more than 50 feet from the project site, and the sound levels shown in Table 4.7-9 for activities that would be typical of the proposed use at a distance of 50 feet from the noise source are therefore conservative. The loudest of the noise sources listed in Table 4.7-9 would be sweepers, which produce 72 dBA at 50 feet. All of these noise sources would not be sustained, but would rather be occasional and intermittent. Operation of rooftop HVAC units could be of a somewhat more sustained nature, but would still frequently not be in operation, especially considering the mild local climate. Since standard construction procedures (dry wall, insulation, etc.) reduce noise levels by approximately 20 dBA, any of the uses mentioned above that would be located inside a building would experience noise levels of 52 dBA or less, which would not exceed any of the applicable thresholds for those land uses in Table 4.7-3. Any outdoor uses, such as the outdoor play areas associated with the preschools at the Peninsula Community Church located to the south of the site across Crestridge Road, the Congregation Ner Tamid located to the west of the site, and the Rancho Palos Verdes Preschool and Kindergarten located to the east of the site; as well as trails within the Vista Del Norte Ecological Preserve, would be 100 feet or more from any buildings or parking areas on the site, as shown in Figure 2-4 in Section 2.0, *Project Description*. Because noise attenuates at a rate of 6 dB for every doubling of distance from a point sources such as those listed in Table 4.7-9, the loudest of these noise sources would be below the City’s 70 dBA standard for schools, churches, nursing homes, and recreational receptors at these locations. Additionally, Section 17.48.030 E.3. b of the City’s Municipal Code places a 65 DB limitation on noise from minor structures and mechanical equipment.



**Table 4.7-9  
Project Noise Sources at 50 Feet**

Source	Level (dBA)
Autos at 14 mph	70
Sweepers	72
Car Alarm Signal	69
Car Alarm Chirp	54
Car Horns	69
Door Slams or Radios	64
Talking	36
Rooftop HVAC units <sup>1</sup>	62

*Source: Gordon Bricken & Associates, 1996. Estimates are based on actual noise measurements taken at various parking lots.*

<sup>1</sup> *Source: LSA Associates, Inc, Noise Impact Analysis, Claremont McKenna College Master Plan, August 2011. It is important to note that no rooftop HVAC units are proposed with this project. This standard is presented for informational purposes.*

Because of the nature of the use proposed for the project site, there may occasionally be ambulances that arrive or leave the property with their sirens on. Ambulance sirens are designed to be loud (up to 113.6 dBA at 50 feet) in order to be clearly audible and highly noticeable to all other drivers on a roadway, who are required by law to pull over to make way for an ambulance with its siren on (ESA, January 2008). Because the nearest sensitive receptor (the Peninsula Community Church and preschool) is located immediately across Crestridge Road from the proposed project's entrance, and ambulances accessing the project site would pass directly in front of them on Crestridge Road, these sensitive receptors could briefly experience such noise levels. However, noise from this source would only occur occasionally, and would also be of short duration. Ambulances would access the project site by Crestridge Road, and would then turn off their sirens after accessing the site. There are already similar uses on either side of the project site; thus, ambulance noise would not be a new phenomenon in the area but could incrementally increase in frequency.

The proposed project would have a gated entrance, and operation of and amplified sound associated with this gated entrance would also produce noise. However, noise from this source would only occur occasionally, would not reach levels that would be expected to exceed compatibility thresholds, and would not significantly contribute to ambient noise levels.

Noise from concurrently operating activities would have the potential to affect the ambient noise conditions of the site by providing a more continuous noise source. However, given the size and layout of the site, it is not anticipated that one noise receptor would receive all noise sources at one time. Rather, the maximum noise a receptor would receive would be from the nearest and most dominant noise source. As identified above, each of the project components would be in compliance with City Codes and would be below thresholds.



Mitigation Measures. No mitigation is required, as significant impacts have not been identified.

Significance After Mitigation. Impacts would be less than significant without mitigation.

**c. Cumulative Impacts.** The proposed project and related projects in the area, as identified in the cumulative projects list (see Table 3-1 in Section 3.0, *Environmental Setting*), would generate temporary noise during construction. As discussed in Impact N-1, impacts related to noise generated by construction of the proposed project would be significant and unavoidable. The only project on the cumulative projects list that is near enough to the proposed project site to contribute to a cumulative construction noise impact is a project at Peninsula Community Church across Crestridge Road from the project site that would convert 2,675 square feet of lower level storage area into a 2,207 square feet multi-purpose room and a 468 square foot expansion of church offices. There are also several proposed projects on the cumulative projects list in the commercial area between Indian Peak Road and Silver Spur Road, but construction noise from these projects would be largely blocked from the project site and nearby uses along Crestridge Road by the existing ridge between the project site and these uses. In the event that construction of proposed or pending projects in the vicinity of the project site occurs at the same time as the construction of the proposed project, the cumulative construction noise impact from multiple construction sites adjacent to one another could result in a cumulatively significant impact in the vicinity.

Traffic noise impacts associated with cumulative development within the City would incrementally increase noise levels along roadways and could potentially subject sensitive receptors to noise exceeding City standards. Cumulative development has the potential to increase roadway generated noise throughout the City. However, the analysis under Impact N-3 includes the future cumulative development scenario, which would not result in noise levels exceeding thresholds. Therefore, cumulative traffic-related noise impacts would not be significant.

Cumulative development would result in stationary (non-traffic) operational noise increases in the project vicinity. However, based on the long-term stationary noise analysis under Impact N-4, impacts from the proposed project's operational noise would be less than significant. Additionally, based on the fact that noise dissipates as it travels away from its source, noise impacts from onsite activities and other stationary sources would be limited to the project site and vicinity. Thus, cumulative operational (non-traffic) noise impacts from related projects, in conjunction with project-specific noise impacts, would not have the potential to result in cumulatively considerable adverse effects.

