4. ENVIRONMENTAL IMPACT ANALYSIS
8. NOISE

4.8.1 INTRODUCTION

This section evaluates the potential for noise and groundborne vibration impacts resulting from implementation of the Proposed Project, including impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the Project Site; exposure of people in the vicinity of the Project Site to excessive noise or groundborne vibration levels; and whether the anticipated exposure would exceed acceptable standards established in the local general plan or noise ordinance. Mitigation measures intended to reduce impacts to noise and vibration are proposed, where appropriate, to avoid or reduce significant impacts of the Proposed Project.

Data used to prepare this analysis was obtained from the City of Santa Clarita General Plan Noise Element, the City of Santa Clarita Municipal Code (SCMC), the Federal Transit Administration Transit Noise and Vibration Impact Assessment (Harris Miller Miller & Hanson, 2006), and by measuring and modeling existing and future noise levels at the Project Site and surrounding areas. Noise prediction modeling conducted in this analysis is based on the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA-RD-77-108). The noise measurement data and modeling calculation worksheets are provided in Appendix H to this Draft EIR.

Fundamentals of Sound And Environmental Noise

Sound is technically described in terms of amplitude (i.e., loudness) and frequency (i.e., pitch). The standard unit of sound amplitude measurement is the decibel (dB). The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Since the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted dB scale (dBA) provides this compensation by emphasizing frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound audible at such a level that the sound becomes an undesirable by-product of society's normal day-to-day activities. Sound becomes unwanted when it interferes with normal activities, causes actual physical harm, or results in adverse health effects. The definition of noise as unwanted sound implies that it has an adverse effect, or causes a substantial annoyance, to people and their environment. However, not every unwanted audible sound interferes with normal activities, causes harm, or has adverse health effects. For unwanted audible sound, i.e. noise, to be considered adverse it must occur with sufficient frequency and at such a level that these adverse impacts are reasonably likely to occur. Thresholds of significance, set forth below, are established to differentiate between benign, unwanted audible sound and potentially significant and adverse unwanted audible sound.

A typical noise environment consists of a base of steady ambient noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise, such as traffic on a major highway. Table 4.8-1, Representative Environmental Noise Levels, illustrates representative noise levels in the environment.

Table 4.8-1
Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: California Department of Transportation, Technical Noise Supplement, October 1998.

Several rating scales have been developed to analyze the adverse effects of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effects of noise on people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

- L_{eq}: An L_{eq}, or equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- L_{max}: The maximum instantaneous noise level experienced during a given period of time.

- L_{min}: The minimum instantaneous noise level experienced during a given period of time.
- CNEL: The Community Noise Equivalent Level (CNEL) is a 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 P.M. to 10:00 P.M. and a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a constant 60 dBA 24 hour L_{eq} would result in a CNEL of 66.7 dBA.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day, night, or over a 24-hour period. For residential uses, environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60–70 dBA range, and high above 70 dBA. Frequent exposure to noise levels greater than 85 dBA over time can cause temporary or permanent hearing loss. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet suburban residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate level noise environments are urban residential or semi-commercial areas (typically 55–60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with more noisy urban residential or residential-commercial areas (60–75 dBA) or dense urban or industrial areas (65–80 dBA).

It is widely accepted that in the community noise environment the average healthy ear can barely perceive CNEL noise level changes of 3 dBA. CNEL changes from 3 dBA to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA CNEL increase is readily noticeable to most people, while a 10 dBA increase in sound pressure is perceived as a doubling of sound. However, there is no direct correlation between increasing or even doubling noise-generating uses and what is detectable by the human ear as an increase in noise level. The human ear perceives a 10 dB(A) increase in sound level to be a doubling of sound volume, but doubling the sound energy, i.e., the noise-generating activity, only results in a 3 dB(A) increase in sound. This means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level to the human ear. Thus, relatively sizeable increases in baseline noise generation are not necessarily perceived as significant noise increases by the human ear.

Noise levels from a particular source generally decline as the distance to the receptor increases. Other factors, such as the weather and reflective barriers, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source (assume a starting point of 50 feet), the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels are also generally reduced by about 1 dBA for each 1,000 feet of distance due to air absorption. Noise levels may also be reduced by intervening structures – generally, a single row of buildings between the receptor and the noise source reduces the

noise level by about 5 dBA, while a solid wall or berm can reduce noise levels by 5 to 10 dBA. The normal noise attenuation within residential structures with open windows is about 17 dBA, while the noise attenuation with closed windows is about 25 dBA.[1]

Fundamentals Of Environmental Groundborne Vibration

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., train operations, motor vehicles, machinery equipment, etc.) causing the adjacent ground to move and creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is referred to as groundborne vibration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration levels. PPV is defined as the maximum instantaneous peak of the vibration level and is typically used for evaluating potential building damage. RMS is defined as the square root of the average of the squared amplitude of the level. RMS velocity in decibels (VdB) is typically more suitable for evaluating human response.

The background vibration velocity level in residential 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 the operation of mechanical equipment, movement of people, or 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, such as historic buildings. The general human response to different levels of groundborne vibration velocity levels is described in Table 4.8-2, Human Response to Different Levels of Groundborne Vibration.

Table 4.8-2
Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Perception
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 Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.

[1] *National Cooperative Highway Research Program Report 117, Highway Noise: A Design Guide for Highway Engineers, 1971.*

4.8.2 REGULATORY SETTING

City of Santa Clarita General Plan

The California Government Code requires that a noise element be included in the general plan of each county and city in the state. Each local government's goals, objectives, and policies for noise control are established by the noise element of the general plan and the passage of specific noise ordinances.

The Noise Element of the City of Santa Clarita General Plan, adopted in 2011, establishes policies for the compatibility of new land uses with various noise levels. These policies have been used to set and adopt exterior and interior noise compatibility criteria for various land uses within the City. The purpose of these criteria is to reduce the various potential effects of noise on people, including sleep disturbance, reduced physical and mental performance, annoyance, and interference with speech communication. The land use-noise compatibility guidelines for noise are identified in Figure 4.8-1, City of Santa Clarita Land Use Compatibility Guidelines for Noise.

The Noise Element identifies 65 dBA and 55 dBA as the established exterior noise standards for residential uses during daytime and nighttime hours, respectively. When averaged over a 24-hour period, these noise levels average to approximately 65 dBA CNEL. The established exterior noise standard for schools, childcare centers, senior housing and other sensitive uses is also 65 dBA during the daytime hours when these uses would be occupied. The exterior noise standard for commercial and industrial uses is 80 dBA during the day and 70 dBA during nighttime hours. These levels average out to approximately 80 dBA CNEL over a 24-hour period.

Part 2 of the Noise Element identifies the City's goals,' objectives,' and policies' that are associated with community noise impacts. Several of the goals, policies, and objectives listed in the Noise Element are oriented towards new residential, commercial or industrial development projects and are thus not applicable to the Proposed Project. As such, the goals,' objectives,' and policies' that are relevant to the Proposed Project are identified as follows:

Noise Environment

Goal N 1: A healthy and safe noise environment for Santa Clarita Valley residents, employees, and visitors.

Objective N 1.1: Protect the health and safety of the residents of the Santa Clarita Valley by the elimination, mitigation, and prevention of significant existing and future noise levels.

Policy N 1.1.1 Use the Noise and Land Use Compatibility Guidelines contained on Exhibit N-8 of the General Plan, which are consistent with State guidelines, as a policy basis for decisions on land use and development proposals related to noise.

Policy N 1.1.2 Continue to implement the adopted Noise Ordinance and other applicable code provisions, consistent with state and federal standards, which establish

noise impact thresholds for noise abatement and attenuation, in order to reduce potential health hazards associated with high noise levels.

Policy N 1.1.3 Include consideration of potential noise impacts in land use planning and development review decisions.

Policy N 1.1.4 Control noise sources adjacent to residential, recreational, and community facilities, and those land uses classified as noise sensitive.

Policy N 1.1.5 Monitor and update data and information regarding current and projected noise levels in the planning area.

Policy N 1.1.6: Provide development review comments on projects proposed by other agencies and special districts that may generate noise impacts affecting land uses within the Santa Clarita Valley, including any freeway and high-speed rail projects.

Reduction of Noise from Traffic[2]

Goal N 2: Protect residents and sensitive receptors from traffic-generated noise.

Objective N 2.1: Prevent and mitigate adverse effects of noise generated from traffic on arterial streets and highways through implementing noise reduction standards and programs.

Policy N 2.1.1: Encourage owners of existing noise-sensitive uses, and require owners of proposed noise sensitive land uses, to construct sound barriers to protect users from significant noise levels, where feasible and appropriate.

Policy N 2.1.2: Encourage the use of noise absorbing barriers, where appropriate.

Policy N 2.1.4: Reduce significant noise levels related to through-traffic in residential areas by promoting subdivision circulation designs to contain a hierarchy of streets, which efficiently direct traffic to highways.

Policy N 2.1.6: Work with the City of Santa Clarita Transit to improve and expand current public transit services and routes to reduce vehicle trips and resulting noise levels.

[2] *Policies N 2.1.3, N 2.1.5 and N2.1.7 are not applicable to the Proposed Project.*

Residential Neighborhoods[3]

Goal N 3: Protect residential neighborhoods from excessive noise.

Objective N 3.1: Prevent and mitigate significant noise levels in residential neighborhoods.

Policy N 3.1.3: Through enforcement of the applicable Noise Ordinance, protect residential neighborhoods from noise generated by machinery or activities that produce significant discernable noise exceeding recommended levels for residential uses.

Policy N 3.1.4: Require that those responsible for construction activities develop techniques to mitigate or minimize the noise impacts on residences, and adopt standards that regulate noise from construction activities that occur in or near residential neighborhoods.

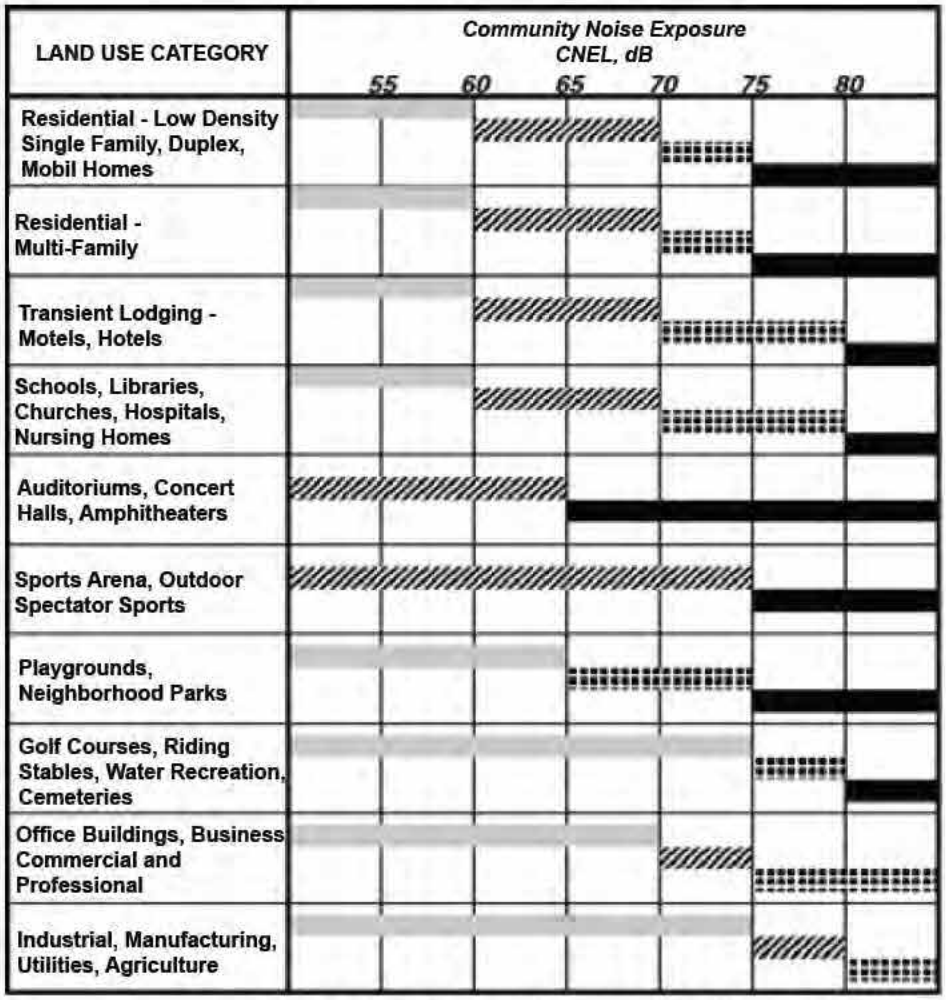
City of Santa Clarita Municipal Code

The City of Santa Clarita has also adopted a Noise Ordinance (Chapter 11.44 of the Santa Clarita Municipal Code), which identifies noise standards for various sources, specific noise restrictions, exemptions, and variances for sources of noise within the City. The Noise Ordinance applies to all noise sources with the exception of any vehicle that is operated upon any public highway, street or right-of-way, or to the operation of any off-highway vehicle, to the extent that it is regulated in the State Vehicle Code, and all other sources of noise that are specifically exempted.

Noise Ordinance Section 11.44.040, Noise Limits, codifies the noise limits for various land uses that were established in the City of Santa Clarita General Plan. The City's noise limit standards for specified land uses are identified in Table 4.8-3, City Ordinance Noise Limits.

Section 11.44.080 of the Noise Ordinance provides noise standards for construction and building activities. Pursuant to Section 11.44.080, no person shall engage in any construction work which requires a building permit from the City on sites within three hundred (300) feet of a residentially zoned property except between the hours of 7:00 A.M. to 7:00 P.M., Monday through Friday, and 8:00 A.M. to 6:00 P.M. on Saturday. Further, no work shall be performed on the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas, Memorial Day and Labor Day. Emergency work as defined in Section 11.44.020(D) is permitted at all times. The Department of Community Development may issue a permit for work to be done "after hours"; provided, that containment of construction noises is provided. (Ord. 89-29, 1/23/90; Ord. 93-4, 3/9/93; Ord. 00-3, 2/8/00; Ord. 05-1 § 2, 1/25/05; Ord. 06-7 § 1, 10/10/06).

[3] *Policies N 3.1.1, N 3.1.2, N 3.1.5, N 3.1.6, N 3.1.7, N 3.1.8, and N 3.1.9 are not applicable to the Proposed Project.*



LEGEND

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 insultaion features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insullation features included in the design. Sound walls, window upgrades, and site design modifications may be needed in order to achieve City standards.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

A. NOISE EXPOSURE INFORMATION DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a worst-case value of CNEL. Usually, a future projection of noise levels represents the worst-case. Existing and future noise contours for freeways, roadway, airport and railroads are provided in the Noise Element.

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compat ble with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act, residential uses located in areas with an aircraft noise level greater than 65 CNEL should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. The acceptable outdoor noise level is 65 CNEL for rear yard areas, neighborhood parks, and pool recreation a reas at multi-family developments.

Source: City of Santa Clarita Noise Element, 2011.

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Figure 4.8-1
City of Santa Clarita Land Use Compatibility Guidelines for Noise

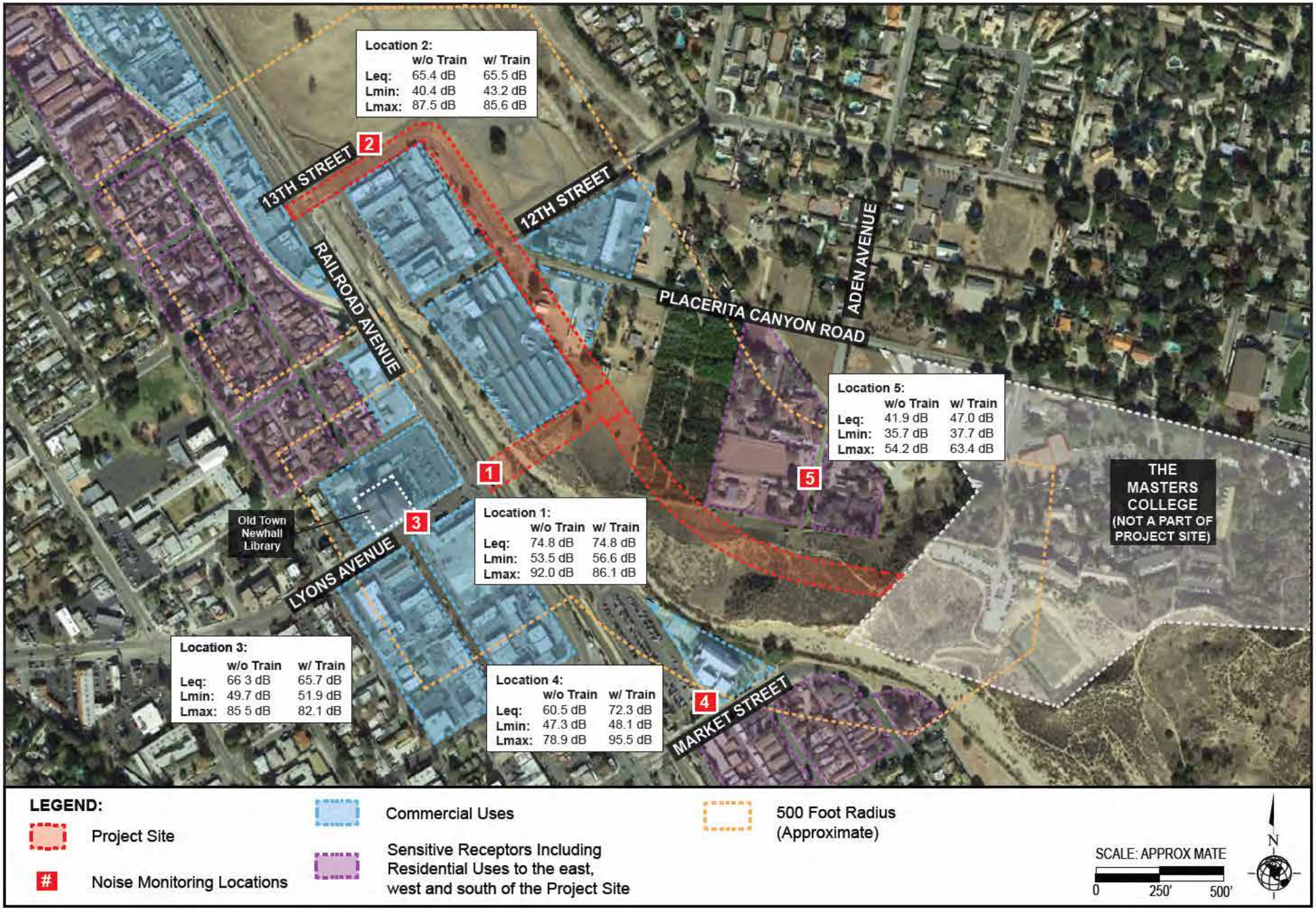
Table 4.8-3
City Ordinance Noise Limits

Part A. Noise Limits		
Region	**Time**	**Sound Level (dB)**
Residential Zone	Day	65
Residential Zone	Night	55
Commercial and Manufacturing	Day	80
Commercial and Manufacturing	Night	70
Part B. Corrections to Noise Limits		
(1) Repetitive impulsive noise		-5
(2) Steady whine, screech or hum		-5
The following corrections apply to day only:		
(3) Noise occurring more than 5 but less than 15 minutes per hour		+5
(4) Noise occurring more than 1 but less than 5 minutes per hour		+10
(5) Noise occurring less than 1 minutes per hour		+20
Source: City of Santa Clarita Municipal Code, Section 14.44.040, Noise Limits (Ord. 89-29, 1/23/90).		

Existing Ambient Noise Levels

Noise measurements were taken with a Larson Davis 831 sound level meter, which conforms to industry standards set forth in ANSI S1.4-1983 (R2001) - American National Standard Specification for Sound Level Meters. Consistent with protocol for community noise analysis, the sound level meter was programmed to record the "A" weighted average sound level (L_{eq}) over a continuous period of 15 minutes in duration. The average recorded sound event noise level (L_{eq}), the minimum noise level (L_{min}) and the maximum noise level (L_{max}) for each location is summarized below.

The Southern Pacific Railroad runs parallel to Railroad Avenue in the vicinity of the Project Site and is a contributing factor affecting the ambient noise conditions. For this reason, noise measurements documented two conditions: ambient noise levels without train activity and ambient noise with train activity. Noise measurements documenting ambient noise levels took place at five locations discussed below. Noise Monitoring Locations are shown in Figure 4.8-2, below. A summary of noise observations at each of the measurement locations is provided below.



Source: Google Earth, 2015; Noise Measurements June 13, 2017

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Figure 4.8-2
Noise Monitoring Location Map

- **Location 1** is at the east side of the intersection of Lyons Avenue and Railroad Avenue. Primary noise sources as this location included vehicle traffic, construction trucks, and delivery trucks. The ambient noise levels with and without a train passing by were identical (74.8 dBA_{Leq}) indicating there was no difference in the ambient noise levels when a train passed by as compared to when no trains were passing by. This observation is due to the relatively close distance between the primary noise source (traffic) and the monitoring location (adjacent sidewalk). During these measurement events, noise from a single vehicle passing by was noticeably louder than the noise attributable to the train passing by.

- **Location 2** is located on the north side of 13th Street approximately 250 feet east of the 13th Street and Railroad Avenue at-grade crossing. The primary source of noise at this location is vehicle and delivery truck traffic on 13th Street. The ambient noise levels without a train passing and with a train passing were 65.4 and 65.5 dBA_{Leq}, respectively, indicating there was no noticeable difference in the ambient noise levels when a train passed by as compared to when no trains were passing by.

- **Location 3** is located on the north side of Lyons Avenue at the intersection of Lyons Avenue and Main Street, directly in front of the Old Newhall Library. The primary sources of noise at this location are pedestrian activity and vehicle traffic. This site is within 350 feet of the railroad right-of-way. The ambient noise levels without a train passing and with a train passing were 66.3 and 65.7 dBA_{Leq}, respectively. Based on observations during both measurements, the predominant noise source was vehicular traffic on Lyons Avenue. The observed noise level was 0.6 dBA louder during the measurement event without the train passing.

- **Location 4** is located on the north side of Market Street at the Jan Heidt Metrolink Station approximately 250 feet east of the railroad right-of-way. The ambient noise at this location is influenced by vehicles on Market Street and Railroad Avenue and trains entering and leaving the Metrolink Station. The ambient noise levels without a train passing and with a train passing were 60.5 and 72.3 dBA_{Leq}, respectively, indicating an increase of approximately 11.8 dBA louder during the measurement event with the train stopping at the station.

- **Location 5** is located at the terminus of Aden Avenue, south of Placerita Canyon. This location is approximately 900 feet east of the railroad right-of way and the line-of-sight between the residences and the Old Town Newhall community to the west (including Railroad Avenue and the railroad right-of-way) is obscured by the intervening topography. Noise observations during this measurement reading were consistent with typical residential activities. During the measurement without a train event the following noise sources were noted: barking dogs, contractors dumping trash in bins, a lawn mower, a delivery truck, and a plane passing overhead. The ambient noise levels without a train passing and with a train passing were 41.9 and 47.0 dBA_{Leq}, respectively, indicating the ambient noise level increased by approximately 5.1 dBA when trains pass through the Metrolink Station.

Table 4.8-4
Existing Noise Levels Measured at the Project Site
Without Train Activity

Noise Measurement Location	Noise Sources	Noise Level Statistics (dBA)		
		L_{eq}	L_{min}	L_{max}
1A. Lyons Avenue and Railroad Avenue	Vehicle traffic and delivery trucks	74.8	53.5	92.0
2A. 13th Street and Railroad Avenue	Vehicle traffic, delivery trucks, pedestrians, and buses	65.4	40.4	87.5
3A. Main Street and Lyons Avenue	Pedestrian activity and vehicle traffic	66.3	49.7	85.5
4A. Aden Ave. south of Placerita Canyon. Rd.	Barking dogs, residential construction (remodel), delivery truck, and plane passing overhead.	60.5	47.3	78.9

Notes:

Notes: The "A" designation after the location numbers signifies ambient noise measurements.

Source: Parker Environmental Consultants, Noise measurements were conducted on June 13, 2017. Noise measurement data is provided in Appendix H to this Draft EIR.

Table 4.8-5
Existing Noise Levels Measured at the Project Site
With Train Activity

Noise Measurement Location	Noise Sources	Noise Level Statistics (dBA)		
		L_{eq}	L_{min}	L_{max}
1T. Lyons Avenue and Railroad Avenue	Vehicle traffic and delivery trucks	74.8	56.6	86.1
2T. 13th Street and Railroad Avenue	Vehicle traffic, delivery trucks, pedestrians, and buses	65.5	43.2	85.6
3T. Main Street and Lyons Avenue	Pedestrian activity and vehicle traffic	65.7	51.9	82.1
4T. Aden Ave. south of Placerita Canyon. Rd.	Barking dogs, residential construction (remodel), delivery truck, and plane passing overhead.	72.3	48.1	95.5

Notes:

Notes: The "T" designation after the location numbers signifies noise measurements that include the passing of a train in addition to ambient noise.

Source: Parker Environmental Consultants, Noise measurements were conducted on June 13, 2017. Noise measurement data is provided in Appendix H to this Draft EIR.

Predicted Roadway Noise Levels

Existing roadway noise levels for selected roadway segments in the vicinity of the Project Site were modeled based on average daily traffic volumes and the roadway noise prediction modeling methodology of the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA-RD-77-108). The modeling data is provided in Appendix H to this Draft EIR. The traffic volumes for each roadway segment are provided in the Project Traffic Study (see Appendix I to this Draft EIR). The estimated average 24-hour hour community noise equivalent noise levels (CNEL) for the selected roadway segments are presented in Table 4.8-6, below. As shown in Table 4.8-6, the roadway noise levels range from 64.5 dBA (CNEL) to 75.3 dBA (CNEL) under existing roadway conditions.

Table 4.8-6
Existing Roadway Noise Levels at Off-Site Locations

Roadway Segment	dBA CNEL (at 50 feet from Centerline of Roadway)
1. Arch St. (between 13th St. and 12th St.)	62.9
2. Railroad Ave. (between 13th St. and Lyons Ave.)	75.3
3. Lyons Ave. (between Newhall Ave. and Main St.)	71.0
4. Lyons Ave (between Main Street and Railroad Ave.)	68.5
5. Railroad Ave. (between Lyons Ave. and Market St.)	72.4
6. Railroad Ave. (between Market St. and Newhall Ave.)	71.9
7. Newhall Ave. (between Railroad Ave. and Race St.)	74.4
8. Newhall Ave. (between Race St. and Valle Del Oro)	75.3
9. Newhall Ave. (between Valle Del Oro and Sierra Hwy)	75.0
10. Sierra Hwy. (between Newhall Ave. and Dockweiler Dr.)	72.6
11. Dockweiler Dr. (between Sierra Hwy. and Valle Del Oro)	65.8
Source: Parker Environmental Consultants, 2017. *Noise measurement data is provided in Appendix H to this Draft EIR.*	

4.8.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

In accordance with Appendix G to the State *CEQA Guidelines*, a project may be deemed to have a significant adverse noise impact if it would result in:

- 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.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- 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?
- 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 following thresholds of significance are based on the City of Santa Clarita's City Land Use Compatibility Guidelines, as well as the noise standards outlined in the City's Noise Ordinance.

Construction Noise Impacts

Construction Noise

A significant on-site noise impact would occur if off-site noise-sensitive land uses would be exposed to project-related construction noise levels originating on or off the project site that would be in violation of Sections 11.44.040, and Section 11.44.080 (as amended) of the City's Noise Ordinance.

Construction and Operational Vibrations

The City of Santa Clarita has not adopted any local threshold level for vibration impacts. In absence of local thresholds, the following analysis relies on the Federal Transit Administration Vibration Criteria for residential land uses.[4] Per this guidance, a significant vibration annoyance impact would occur if the Proposed Project generated vibration levels in excess of 80 VdB at the receptor location.

Operational Noise

Mobile Source Noise Thresholds

Evaluation of off-site mobile source noise impacts considers the City Land Use Compatibility Guidelines and community responses to changes in noise levels. Based on this information, a significant off-site project operational noise impacts would occur under the following criteria:

- Criterion 1: An increase of 5.0 dB(A) or greater in noise level occurs from project-related activities if levels remain within the same land use compatibility classification (e.g., noise levels remain within the normally acceptable range); or

- Criterion 2: An increase of 3.0 dB(A) or greater in noise level occurs from project-related activities which results in a change in land use compatibility classification (e.g., noise levels change from normally acceptable to conditionally acceptable); or

[4] *Caltrans, Transportation and Construction Vibration Guidance Manual (2013) at page 23.*

- Criterion 3: Any increase in noise levels occurs where existing noise levels are already considered unacceptable under the City Land Use Compatibility Guidelines.

The City's noise ordinance exempts emergency operations from noise regulation. Therefore, the assessment of roadway noise impacts does not account for roadway noise that may be generated by emergency vehicles.

Interior Noise Thresholds

A significant noise impact would occur if the Proposed Project causes or contributes to interior noise levels from exterior sources to exceed 45 dB(A) L_{dn} or CNEL in any habitable room of a multi-residential use facility (e.g., hotels, motels, dormitories, long-term care facilities, and apartment houses and other dwellings, except detached single-family dwellings) with doors and windows closed.

Project Impacts

Construction-Related Noise Impacts

Construction of the Proposed Project would require the use of heavy equipment for ground clearing, site grading, and roadway construction. Development activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of development, there would be a different mix of equipment operating and noise levels would vary based on the amount of equipment in operation and the location of the activity.

The U.S. Environmental Protection Agency (EPA) has compiled data regarding the noise generating characteristics of specific types of construction phases and specific construction equipment. These data are presented in Table 4.8-7 and Table 4.8-8 for a reference distance of 50 feet from the source. These noise levels can be expected to occur on a temporary and intermittent basis throughout the construction period. As discussed previously, Section 11.44.080 of the Santa Clarita Municipal Code prohibits construction work requiring a building permit on sites within 300 feet of a residentially zoned property from operating except between the hours of 7:00 A.M. and 7:00 P.M. Monday through Friday, and between 8:00 A.M. and 6:00 P.M. on Saturday. As such, construction activities would not measurably affect the L_{dn} noise levels or CNEL since no construction activities would occur after 7:00 P.M. The representative construction phasing and equipment noise levels identified in Tables 4.8-7 and 4.8-8 would, however, increase daytime ambient noise levels in excess of the noise limits set forth in Municipal Code Section 14.44.040, Noise Limits (See Table 4.8-3, above).

Table 4.8-7
Typical Outdoor Construction Noise Levels

Construction Phase	Noise Levels at 50 Feet with Mufflers (dBA L_{eq})	Noise Levels at 60 Feet with Mufflers (dBA L_{eq})	Noise Levels at 100 Feet with Mufflers (dBA L_{eq})	Noise Levels at 200 Feet with Mufflers (dBA L_{eq})
Ground Clearing	82	80	76	70
Excavation, Grading	86	84	80	74
Foundations	77	75	71	65
Structural	83	81	77	71
Finishing	86	84	80	74

[a] *Source: United States Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.*

Table 4.8-8
Noise Range of Typical Construction Equipment

Construction Equipment	Noise Level in dBA L_{eq} at 50 Feet [a]
Front Loader	73-86
Trucks	82-95
Cranes (moveable)	75-88
Cranes (derrick)	86-89
Vibrator	68-82
Saws	72-82
Pneumatic Impact Equipment	83-88
Jackhammers	81-98
Pumps	68-72
Generators	71-83
Compressors	75-87
Concrete Mixers	75-88
Concrete Pumps	81-85
Back Hoe	73-95
Tractor	77-98
Scraper/Grader	80-93
Paver	85-88

[a] *Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of noise emissions as that shown in this table.*

Source: United States Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.

Using the reference noise level data presented in Table 4.8-8, it is estimated that several pieces of construction equipment operating simultaneously would generate a noise level of approximately 94.6 dBA. As shown in Figure 4.8-2 the sensitive receptors within 500 feet of the Project Site are the residential communities bound by Market Street to the north, the single-family homes to the north at the terminus of Aden Avenue, the residences west of Railroad Avenue and north of Lyons Avenue, the Master's University Campus, and the Old Town Newhall Library. The estimated construction noise levels

impacting each receptor are identified in Table 4.8-9, below. As shown in Table 4.8-9, when factoring in attenuation rates for distance over a soft (i.e., vegetated) ground surface, the anticipated construction noise levels are expected to exceed the City's daytime noise standards for residential uses (see Table 4.8-3); although, temporary and episodic construction noise levels would be similar to the existing noise levels of passing trains (see Table 4.8-5). As such, construction noise would produce noise levels that are similar to existing temporary and episodic noise levels. Nevertheless, construction noise would exceed the threshold levels, and the construction noise levels would therefore constitute a significant impact.

Table 4.8-9
Estimated Exterior Construction Noise at Nearest Sensitive Receptors

Sensitive Land Uses[a]	Distance to Project Site (feet)	Reference Noise Level at the Sensitive Receptor	Estimated Peak Construction Noise Levels at Receptor Location (dBA L_{eq}) [a]	Threshold Level [b]	Significant Impact
1. Old Town Newhall Library (Noise Monitoring Location 3)	290	69.5	75.5	80	No
2. Residential uses on Aden Ave. (Noise Monitoring Location 5)	130	56.6	84.2	65	Yes
3. The Master's University Campus (Noise Monitoring Location 4)	490	56.6	69.8	65	Yes
4. Residential homes west of Railroad Avenue and north of Lyons Avenue (Noise Monitoring Location 2)	490	69.5	69.8	65	Yes
5. Residential uses south of Market Street (Noise Monitoring Location 4)	245	64.7	77.4	65	Yes

Notes:
[a] Calculations based on Federal Transit Administration, Transit Noise and Vibration Impact Assessment, Final Report, May 2006. It should be noted that the peak noise level increase at the nearby sensitive receptors during Project construction represents the highest composite noise level that would be generated periodically during a worst-case construction activity and does not represent continuous noise levels occurring throughout the construction day or period.
[b] This threshold level represents the lowest threshold applicable for the types of noise activities anticipated to occur over a typical 8-hour work day. See Table 4.8-3 for additional factors and circumstances.
Source: Parker Environmental Consultants, See Appendix H for construction noise calculation worksheets.

Construction-Related Groundborne Vibration

Construction activities that would occur at the Project Site would involve the use of heavy earthmoving equipment and vibratory rollers, which have the potential to generate low levels of groundborne vibration. Table 4.8-10, below, identifies various vibration velocity levels at specific distances for the types of construction equipment that would operate at the Project Site during construction.

Site clearing and grading activities would not occur within 100 feet of any occupied residential structure within the Project area. Based on the information in Table 4.8-10, the nearest homes to the north on Aden Avenue would be exposed to vibration levels in the range of 69 VdB, which is below the dividing line between barely perceptible and distinctly perceptible levels for many people. Also, as discussed previously, construction activities that would occur within 300 feet of a residential zone would be limited

to the hours of 7:00 A.M. through 7:00 P.M. Monday through Friday and 8:00 A.M. through 6:00 P.M. on Saturday. Therefore, vibration impacts would not occur during recognized sleep hours for residences. The Proposed Project would not generate vibration levels in excess of the 80 VdB threshold at any residences and/or buildings where people normally sleep. Thus, the Proposed Project's potential impact upon exposing persons to excessive groundborne vibration or groundborne noise levels would be less than significant.

Table 4.8-10
Vibration Source Levels for Construction Equipment

Equipment	Approximate PPV (in/sec)					Approximate RMS (VdB)				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Caisson Drilling	0.089	0.031	0.024	0.017	0.011	87	78	76	73	69
Loaded Trucks	0.076	0.027	0.020	0.015	0.010	86	77	75	72	68
Jackhammer	0.035	0.012	0.009	0.007	0.004	79	70	68	65	61
Small Bulldozer	0.003	0.001	0.0008	0.0006	0.0004	58	49	47	44	40

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, Final Report, 2006.

Operational Noise Levels –Off-Site Roadway Noise Impacts

The Proposed Project is anticipated to alter roadway traffic volumes, as the Proposed Project would create a new roadway segments and crossings, including removing the crossing at Railroad Avenue and 13th Street and connecting Lyons Avenue to Dockweiler Drive, which would also include extending Dockweiler Drive to connect with Arch Street. Locations in the vicinity of the Lyons Avenue/Dockweiler Drive Extension and the crossing closure at 13th Street portions of the Proposed Project could experience slight changes in noise levels as a result of the change in traffic patterns. The proposed roadway crossing would be located at the intersection of Railroad Avenue and Lyons Avenue, where Location 1T was monitored. The noise measurements recorded at Locations 2T and 4T are representative of what noise levels would be at the proposed railroad crossing at Lyons Avenue and Railroad Avenue, as these locations were proximate to the existing at grade crossings along Railroad Avenue at 13th Street and Market Streets. The highest 15-minute average Leq noise level experienced during a train event at either location was 72.3 dB at Location 4T, which is approximately 2.5 dB lower than the 15-minute Leq noise level at Location 1T (74.8 dB). A 2.5 dB change in the ambient noise level (either higher or lower) would be inaudible/imperceptible to the nearest sensitive receptors, which are the Old Town Newhall Library (located 290 feet west) and the residences west of Railroad Avenue and north of Lyons Avenue (located 490 feet northwest). Furthermore, it is also important to note that the highest noise level (L_{max}) at Location 1A (ambient noise level without a train crossing) was 92.0 dB which was attributable to heavy vehicle traffic such as transit buses, delivery trucks, and motorcycles. Therefore, heavy vehicle traffic is observed to contribute to higher noise levels than a passing train. The new noise sources from the proposed railroad crossing at Lyons Avenue and Railroad Avenue would have a less than significant impact on sensitive receptors.

The changes in future noise levels along the study-area roadway segments in the Project Site vicinity are identified in Table 4.8-11, below. As shown, the Proposed Project's near term (Year 2019) impacts would increase local noise levels by a maximum of 2.7 dBA CNEL (at the location of Dockweiler Drive (between Sierra Highway and Valle del Oro), which is inaudible/imperceptible to most people and would not exceed the identified thresholds of significance. At all other roadway segments, the resulting noise levels are anticipated to decrease. As such the Proposed Project's potential to generate a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project would be less than significant.

Table 4.8-11
Future (2019) Project Roadway Noise Impacts at Off-Site Locations

Roadway Segment	Future (2019) Without Project (dBA CNEL)	Future (2019) With Project (dBA CNEL)	Change Due to Project (dBA CNEL)	Significant Impact?
1. Arch St. (between 13th St. and 12th St.)	64.1	50.7	-13.4	No
2. Railroad Ave. (between 13th St. and Lyons Ave.)	75.2	74.7	-0.5	No
3. Lyons Ave. (between Newhall Ave. and Main St.)	68.9	69.3	0.4	No
4. Lyons Ave (between Main Street and Railroad Ave.)	68.0	68.6	0.6	No
5. Railroad Ave. (between Lyons Ave. and Market St.)	72.2	72.0	-0.2	No
6. Railroad Ave. (between Market St. and Newhall Ave.)	72.4	72.1	-0.3	No
7. Newhall Ave. (between Railroad Ave. and Race St.)	75.4	74.7	-0.7	No
8. Newhall Ave. (between Race St. and Valle Del Oro)	75.8	75.1	-0.7	No
9. Newhall Ave. (between Valle Del Oro and Sierra Hwy)	74.9	74.6	-0.3	No
10. Sierra Hwy. (between Newhall Ave. and Dockweiler Dr.)	68.6	68.4	-0.2	No
11. Dockweiler Dr. (between Sierra Hwy. and Valle Del Oro)	65.8	68.2	2.7	No

Source: Parker Environmental Consultants, 2017.
Noise measurement data is provided in Appendix H to this Draft EIR.

Operational Noise Levels – On-Site Roadway Noise Impacts

The Proposed Project improvements which includes the 13th Street crossing closure does not include modifications to roadway circulation and are not expected to affect on-site operational noise levels. This portion of the Proposed Project would result in a less than significant impact to on-site roadway operational noise.

The Lyons Avenue/Dockweiler Drive Extension portion of the Proposed Project would result in a future roadway segment over an existing creek bed and over an area that is largely vacant and undeveloped. The proposed roadway segment would connect Arch Street to the future planned extension of Dockweiler Drive and would provide a link from Lyons Avenue crossing the Newhall Creek to the proposed extension of Dockweiler Drive. As shown in Figure 4.8-2, the proposed alignment would construct a Secondary Highway roadway segment within 130 feet of existing residential homes on Aden Avenue, within 245 feet of the residential uses on Market and Race Streets, and within 490 feet of The Master's University. Based on the noise prediction modeling using the FHWA's Highway Noise Prediction Model

(FHWA-RD-77-108), the Future (2019) With Project noise levels on the new roadway segment from Lyons Avenue to Valle del Oro are expected to be 63.3 dBA (CNEL) within 50 feet of the centerline of the roadway. The resulting noise levels at the sensitive receptors identified in Table 4.8-12, below, would be below 52.9 dBA. It should be noted that the line of sight between the proposed roadway segment and Aden Avenue is blocked at its closest point by a ridgeline that extends approximately 20 feet higher than the roadway surface elevation. The residences are also located at a lower surface elevation than the roadway. Thus, the topography in this area will provide additional attenuation of approximately 5 dBA L_{eq}. In any case, the anticipated with Project noise levels at all off-site receptor locations would be within the "normally acceptable" range of noise for residential areas. Therefore, the Proposed Project's noise impacts would be less than significant.

Table 4.8-12
Estimated Roadway Noise at Nearest Sensitive Receptors

Sensitive Land Uses[a]	Distance to Project Site (feet)	Roadway Noise Level at 50 ft. From Centerline (dBA CNEL) [a]	Estimated Roadway Noise Level at Receptor Location (dBA CNEL)	Residential Threshold Level (dBA CNEL)[b]	Significant Impact
1. Residential uses on Aden Ave.	130	63.3	52.9	60	No
2. Residential neighborhood South of Market Street, East of Railroad Avenue, West of Race Street, and North of Park Street	245	63.3	46.0	60	No
3. The Master's University Campus	490	63.3	38.5	60	No
4. Residential homes west of Railroad Avenue and north of Lyons Avenue	490	63.3	38.5	60	No

Notes:
[a] The roadway noise volume is shown for the planned roadway segment of Dockweiler Drive between Lyons Avenue and Valle del Oro.
[b] See Figure 4.8-1 for a description of the Land Use Noise Compatibility Guidelines.
Source: Parker Environmental Consultants, See Appendix H for construction noise calculation worksheets.

Operational Noise Levels – Railroad Crossing Bells

The Proposed Project would result in the closure of the 13th Street railroad right-of-way crossing and the improvement of a new at-grade railroad crossing at Lyons Avenue and Railroad Avenue. The closure of the existing at grade railroad crossing at 13th Street would reduce the railroad warning signal bell levels in the vicinity of 13th Street and Railroad Avenue as the railroad crossing warning signal devices would be removed at this location and installed at a new at-grade crossing at Lyons Avenue and Railroad Avenue. As previously discussed and shown in Table 4.8-4 and 4.8-5 (ambient Noise Levels Without and With Train Events) and Figure 4.8-2, Noise Monitoring Location Map, the ambient noise levels with and without the railroad crossing signals activated produced a wide range of noise levels showing little to no effect at locations 1 through 3 (where local vehicle traffic noise was the dominant noise source) to an increase of up to 5.1 to 11.8 dBA L_{eq} at locations 5 and 4 respectively. The relocation of the existing

railroad crossing signal at 13th Street and Railroad Avenue approximately 1,150 feet south to the Lyons Avenue and Railroad Avenue crossing would not result in a noticeable change to the ambient noise levels during train events. Noise impacts from at-grade warning signals would be less than significant.

4.8.4 CUMULATIVE IMPACTS

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts may be analyzed by considering a list of past, present, and probable future projects producing related or cumulative impacts.

For purposes of assessing the Project's cumulative roadway noise levels, the Future Year 2035 Traffic Analysis was applied to the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA-RD-77-108). The Future Year 2035 traffic volumes were provided by the City of Santa Clarita using the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) for the Buildout Year. Other Area Projects anticipated to be constructed by Year 2035 have been incorporated into the SCVCTM, and account for expected growth. The buildout includes construction of future roadways Golden Valley Road between Newhall Ranch Road to Valley Center Drive, Magic Mountain Parkway from Railroad Avenue to Via Princessa, and Via Princessa between Claibourne Lane and Sheldon Avenue. The future buildout SCVTM model also includes the proposed conceptual development of the North Newhall Specific Plan area an 809 dwelling unit plus an approximate 11-acre commercial land use.

Based on this data, cumulative traffic-generated noise impacts were quantified based on the change in noise levels from the Future (2035) Without Project scenario and the Future (2035) With Project scenario, as shown in Table 4.8-13, below. As shown in Table 4.8-13, cumulative development with the Proposed Project would result in increased local noise levels by a maximum of 2.9 dBA CNEL at Lyons Avenue (between Main Street and Railroad Avenue), 2.3 dBA CNEL at Lyons Avenue (between Newhall Avenue and Main Street), and 2.4 dBA CNEL at Dockweiler Rd. (between Sierra Highway and Valle del Oro). At all other roadway segments, the noise levels are expected to remain unchanged or slightly decrease. This impact is largely due to the reduction in "cross valley" trip lengths and travel times and the diffusion of traffic volumes over the existing roadway segments. Because the resulting noise levels would be under 3 dBA, the resulting roadway noise level increase would not be considered substantial and, therefore, would not constitute a significant cumulative impact.

Table 4.8-13
Future (2035) Project Roadway Noise Impacts at Off-Site Locations

Roadway Segment	Future (2035) Without Project (dBA)	Future (2035) With Project (dBA)	Change Due to Project (dBA)	Significant Impact?
1. Arch St. (between 13th St. and 12th St.)	62.6	65.0	2.4	No
2. Railroad Ave. (between 13th St. and Lyons Ave.)	75.4	75.1	-0.3	No
3. Lyons Ave. (between Newhall Ave. and Main St.)	69.9	72.2	2.3	No
4. Lyons Ave (between Main Street and Railroad Ave.)	69.1	72.0	2.9	No
5. Railroad Ave. (between Lyons Ave. and Market St.)	72.3	71.9	-0.4	No
6. Railroad Ave. (between Market St. and Newhall Ave.)	72.3	71.7	-0.6	No
7. Newhall Ave. (between Railroad Ave. and Race St.)	76.1	75.0	-1.1	No
8. Newhall Ave. (between Race St. and Valle Del Oro)	76.5	75.4	-1.1	No
9. Newhall Ave. (between Valle Del Oro and Sierra Hwy)	75.9	75.3	-0.6	No
10. Sierra Hwy. (between Newhall Ave. and Dockweiler Dr.)	71.5	70.2	-1.3	No
11. Dockweiler Dr. (between Sierra Hwy. and Valle Del Oro)	70.7	73.1	2.4	No

Source: Parker Environmental Consultants, 2017.
Noise measurement data is provided in Appendix H to this Draft EIR.

4.8.5 MITIGATION MEASURES

The following measures are recommended to reduce the potential noise levels associated with construction activities to the maximum extent feasible.

4.8-1. Pursuant to Section 11.44.080 of the City's Noise Ordinance, no construction work shall occur within 300 feet of occupied residences except between the hours of 7:00 AM and 7:00 PM Monday through Friday, and between 8:00 AM and 6:00 PM on Saturday. No construction work shall occur on Sunday, New Year's Day, Independence Day, Thanksgiving Day, Christmas Day, Memorial Day, and Labor Day.

4.8-2. The construction schedule (including the various types of activities that would be occurring throughout the duration of construction phases, anticipated truck routes, and the potential for noise impacts along local roadways from construction-related vehicles) shall be prominently posted on-site during construction stages. When construction activities are anticipated to occur within 200 feet of residences, notice of the construction schedule shall be mailed to such residences two weeks prior to commencement of activity.

4.8-3. The phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective actions, and report the action taken to the reporting party. Contract specifications shall be included in the Project's construction document.

4.8-4. All internal combustion engine construction equipment shall be properly muffled or equipped with other noise attenuating devices capable of achieving a sound attenuation of at least 3 dB(A) at 50 feet of distance. Such equipment shall also be in good working condition.

4.8-5. As feasible, construction activities shall use specially quieted equipment, such as electric air compressors and similar power tools, rather than diesel equipment.

4.8-6. Construction staging areas shall be located away from sensitive land uses, particularly away from the single-family properties on Aden Street, the single-family residences near Market Street and Race Street, and dormitories on the Master's University Campus.

4.8-7. Construction and grading activities shall be scheduled in such a way so as to avoid operating several pieces of equipment simultaneously, which causes high noise levels.

4.8-8. Construction activities whose specific location on the site may be flexible (e.g., operation of compressors and generators, cement mixing, general truck idling) shall be conducted as far as possible from the nearest noise-sensitive land uses, particularly away from single-family residences.

4.8-9. Temporary construction noise barriers of sufficient height shall be erected in such a way so as to disrupt line-of-sight between the active construction noise sources and any residences within 500 feet of the Project Site.

4.8.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the mitigation measures recommended in this report, the noise levels associated with Project-related construction activities would be reduced; although, they would continue to either exceed City standards and/or cause an increase of at least 10 dBA L_{eq} at the nearby residential areas. Therefore, this impact would continue to be significant and unavoidable regarding the exposure persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinances, or applicable standards of other agencies, and the creation of a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

The Proposed Project's operational impacts would be less than significant prior to mitigation.