

Appendix H: Noise Study



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NOISE IMPACT ANALYSIS

**TENTATIVE TRACT MAP NO. 38625 RESIDENTIAL
PROJECT**

CITY OF MENIFEE

Lead Agency:

City of Meniffee
Community Development Department
29844 Haun Road
Meniffee, CA 92586

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, CA 92651
949 510 5355
Greg Tonkovich, INCE

Project No. 23020

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Menifee
cmu	concrete masonry unit
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
TTM	Tentative Tract Map
VdB	Vibration velocity level in decibels

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise impacts associated with the proposed Tentative Tract Map (TTM) No. 38625 Residential project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise impacts from the proposed project; and
- An analysis of long-term operations-related noise impacts from the proposed project.

1.2 Site Location and Study Area

The project site is located on the eastern edge of the City of Menifee (City). The approximately 55.4 acre project site is currently vacant and is bounded by Simpson Road and single-family homes to the north, vacant land to the east, Salt Creek Channel and vacant land to the south, and single-family homes to the west. The project study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are residents at the single-family homes on the west side of the project site, located as near as 12 feet west of the project site. There are also single-family homes on the north side of Simpson Road that are located as near as 120 feet north of the project site. The nearest K-12 school is Ethan Chase Middle School that is located as near as 1,460 feet north of the project site.

1.3 Proposed Project Description

The proposed project would disturb up to 51.2 acres of the 55.4 acre project site and would consist of the development of 330 single-family detached homes that would include approximately 8.6 acres of open space area of which the southern portion of the project site would be designated as a City park and would include combo tennis/pickle ball courts, grass playfields, tot lots, sitting areas with possible shade structures, walkways and a parking lot. Near the middle of the project site there would also be a recreation center that would include a pool with showers and restrooms, a shade structure and barbeque area. The proposed project would include the paving of approximately 12.4 acres of onsite roads and extension of Briggs Road along the eastern edge of the project site. The proposed site plan is shown in Figure 2.

The proposed wall and fence plan is shown in Figure 3, which details that split face concrete masonry unit (cmu) walls will be constructed adjacent to Simpson Avenue and Briggs Road and on the exposed sides of

all homes backyard walls that includes the east side of the proposed recreation center and the portions of the backyard walls facing the proposed City Park.

1.4 Executive Summary

Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the City and State of California (State).

City of Menifee Noise Regulations

The following lists the noise and vibration regulations from the City Code that are applicable, but not limited to the proposed project.

- Section 8.010.010 Allowable Hours of Construction;
- Section 9.09.030 Construction-Related Noise Exemptions; and
- Section 9.09.050 General Sound Level Standards.

State of California Noise Regulations

The following lists the State of California noise regulations that are applicable, but not limited to the proposed project.

- California Vehicle Code Section 27200-27207 – On Road Vehicle Noise Limits
- California Vehicle Code Section 38365-38350 – Off-Road Vehicle Noise Limits

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than significant impact.

Generation of excessive groundborne vibration or groundborne noise levels?

Less than significant impact.

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

Less than significant impact.

1.5 Project Design Features Incorporated into the Proposed Project

This analysis was based on implementation of the following project design features that are either already depicted on the proposed project site plan and architectural plans or are required from City and State Regulations.

Project Design Feature 1:

The project applicant shall provide a “windows closed” condition for each proposed single-family home. A “window closed” condition requires a means of mechanical ventilation per Chapter 12, Section 1202 of the Uniform Building Code. This shall be achieved with a standard forced air conditioning and heating system with a filtered outside air intake vent for each single-family home.

Project Design Feature 2:

The project applicant shall require that the Home Owner Association adopt operating hours of 7:00 a.m. to 10:00 p.m. for the proposed recreation center that includes the pool and barbeque area and to require that the recreation center is cleared of users and locked every night by a security guard at 10:00 p.m..

1.6 Mitigation Measures for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 and through implementation of Project Design Features 1 and 2 detailed in Section 1.5 above were adequate to limit all noise and vibration impacts to less than significant levels. No mitigation measures are required for the proposed project with respect to noise and vibration impacts.

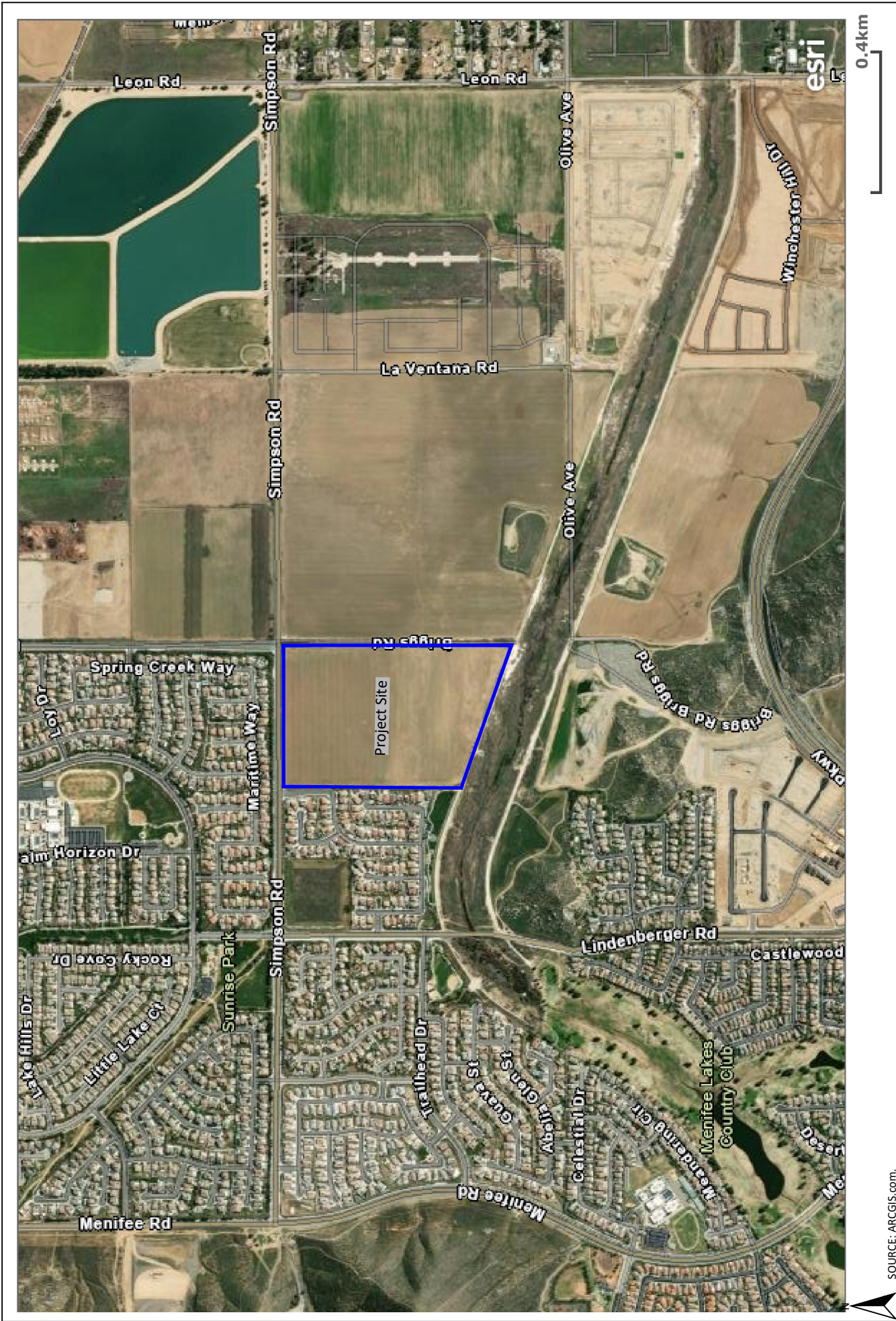


Figure 1
Project Location Map



Figure 2
Proposed Site Plan



Figure 3
Proposed Wall and Fence Plan

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The worst-hour traffic Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of Menifee relies on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in level of noise as the distance from the source increases. The manner in which the noise level reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiate uniformly outward as it travels

away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD) between source and receiver. Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 *Vibration Descriptors*

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is “VdB”, which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 *Vibration Perception*

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 *Vibration Propagation*

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform medium, while ground-borne vibrations travel through the earth which may contain significant geological differences. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground’s surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a “push-pull” fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or “side-to-side and perpendicular to the direction of propagation.”

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the City of Menifee. Noise and vibration regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise and vibration are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA), which regulates transit noise, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Although the proposed project is not under the jurisdiction of the FTA, the *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, is the only guidance document from a government agency that has defined what constitutes a significant noise impact from implementing a project. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings are provided below in Table A.

Table A – FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2018.

As shown in Table A, the allowable cumulative noise level increase created from a project would range from 0 to 7 dBA, which is based on the existing (ambient) noise levels in the project vicinity. The justification for the sliding scale, is that people already exposed to high levels of noise should be expected to tolerate only a small increase in the amount of noise in their community. In contrast, if the existing noise levels are quite low, it is reasonable to allow a greater change in the community noise for the equivalent difference in annoyance.

The FTA Manual also provides specific guidance for construction noise. The FTA recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. However, local noise ordinances usually relates to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the noise impacts of a construction project. Project construction noise criteria should take into account the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land uses. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings for a general construction noise assessment are provided below in Table B.

Table B – FTA Construction Noise Criteria

Land Use	Day (dBA Leq(8-hour))	Night (dBA Leq(8-hour))	30-day Average (dBA Ldn)
Residential	80	70	75
Commercial	85	85	80*
Industrial	90	90	85*

Notes:

* 24-hour Leq not Ldn.

Source: Federal Transit Administration, 2018.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by transportation sources, the City is restricted to regulating noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Noise Standards





























































California Department of Health Services Office of Noise Control

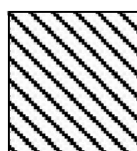
Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regulatory tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix,” which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise. The Land Use Compatibility Matrix that was adopted by the City is shown in Figure 4.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required

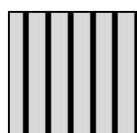
Table 5.12-3
Land Use Compatibility for Community Noise Environments

Land Uses	CNEL (dBA)					
	55	60	65	70	75	80
Residential-Low Density Single Family, Duplex, Mobile Homes						
Residential- Multiple Family						
Transient Lodging, Motels, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Businesses, Commercial and Professional						
Industrial, Manufacturing, Utilities, Agricultural						



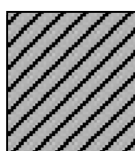
Normally Acceptable:

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 the 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 generally be discouraged. If new construction 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 generally should not be undertaken.

Source: California Office of Noise Control. Guidelines for the Preparation and Content of Noise Elements of the General Plan. February 1976. Adapted from the US EPA Office of Noise Abatement Control, Washington D.C. Community Noise. Prepared by Wyle Laboratories. December 1971.

to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

The *Transportation- and Construction Vibration Guidance Manual*, prepared by Caltrans, April 2020, provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.25 inch per second PPV for transient sources and 0.04 inch per second PPV for continuous sources.

4.3 Local Regulations

The City of Menifee General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Menifee General Plan

Goal N-1 Noise-sensitive land uses are protected from excessive noise and vibration exposure.

- Policy N-1.1** Assess the compatibility of proposed land uses with the noise environment when preparing, revising, or reviewing development project applications.
- Policy N-1.3** Require noise abatement measures to enforce compliance with any applicable regulatory mechanisms, including building codes and subdivision and zoning regulations, and ensure that the recommended mitigation measures are implemented.
- Policy N-1.7** Mitigate exterior and interior noise to the levels listed in the table below (see Table C) to the extent feasible, for stationary sources adjacent to sensitive receptors:

Table C – City of Menifee Stationary Source Land Use Noise Standards

Land Use	Interior Standards	Exterior Standards
Residential*		
10:00 p.m. to 7:00 a.m.	40 L _{eq} (10 minute)	45 L _{eq} (10 minute)
7:00 a.m. to 10:00 p.m.	55 L _{eq} (10 minute)	65 L _{eq} (10 minute)

* Excepted as permitted under Section 9.09.020 of the City of Menifee Municipal Code.
Source: City of Menifee General Plan, 2013.

- Policy N-1.8** Locate new development in areas where noise levels are appropriate for the proposed uses. Consider federal, state, and city noise standards and guidelines as a part of new development review.
- Policy N-1.9** Limit the development of new noise-producing uses adjacent to noise-sensitive receptors and require that new noise-producing land be designed with adequate noise abatement measures.
- Policy N-1.11** Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation.
- Policy N-1.12** Minimize potential noise impacts associated with the development of mixed-use projects (vertical or horizontal mixed-use) where residential units are located above or adjacent to noise-generating uses.

City of Menifee Municipal Code

The City of Menifee Municipal Code establishes the following applicable standards related to noise.

Section 8.01.010 – Hours of Construction

Any construction within the city located within one-fourth mile from an occupied residence shall be permitted Monday through Saturday, except nationally recognized holidays, 6:30 a.m. to 7:00 p.m. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the City Building Official or City Engineer.

Section 9.09.020 – General Exemptions

Sound emanating from the following sources are exempt from the provisions of this chapter:

-
- H. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 7:00 a.m. and 8:00 p.m.;
 - I. Motor vehicles (factory equipped), other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;
 - J. Heating and air conditioning equipment in proper repair; and
 - K. Safety, warning and alarm devices, including but not limited to, house and car alarms, and other warning devices that are designed to protect public health, safety and welfare.

Section 9.09.030 – Construction-Related Exemptions

Exemptions may be requested from the standards set forth in Section 9.09.040 or 9.09.060 of this chapter and may be characterized as construction-related, single event or continuous events exceptions.

- A. Private construction projects, with or without a building permit, located one-quarter of a mile or more from an inhabited dwelling.
- B. Private construction projects, with or without a building permit, located within one-quarter of a mile from an inhabited dwelling, provided that:
 - 1. Construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. the following morning during the months of June through September; and
 - 2. Construction does not occur between the hours of 6:00 p.m. and 7:00 a.m. the following morning during the months of October through May.
- C. Construction-related exemptions. A construction-related exemption shall be considered either a minor temporary use or a major temporary use as defined in Chapter 9.06 of this code. An application for a construction-related exception shall be made using the temporary use application provided by the Community Development Director in Chapter 9.06 of this code. For construction activities on Sunday or nationally recognized holidays, Section 8.01.010 shall prevail.

Section 9.09.050 – General Sound Level Standards

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior and interior sound level on any other occupied property to exceed the sound level standards set forth in Table 1 (see Table C above).

Section 9.09.070 – Special Sound Sources Standards

The general sound level standards set forth in Section 9.09.040 apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards, the failure to comply with which constitute separate violations of this chapter.

A. Motor vehicles

- 3. *Power tools and equipment.* No person shall operate any power tools or equipment between the hours of 7:00 p.m. and 7:00 a.m. the following morning during the months of June through

September and 6:00 p.m. and 7:00 a.m. the following morning during the months of October through May such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a distance greater than 100 feet from the power tools or equipment.

Section 13.01.250 – Park Hours and Closure

- (A) *Hours of operation.* All unlighted parks owned by the City of Menifee or to be hereafter owned by the City of Menifee, shall be closed from 30 minutes after sunset of one day and 30 minutes before sunrise of the next day except for those uses noted under division (C) (Exceptions) below. All lighted sports fields shall be closed from 10:00 p.m. of one day and 30 minutes before sunrise of the next day. The City Manager or his/her designee may administratively modify use hours as needed for specific facilities and amenities within parks for the benefit of public health, safety or general well-being; without reestablishment by ordinance or Code amendment.
- (B) *Closed parks.* Subject to the exceptions as indicated in division (C) below, it shall be unlawful for any person and/or vehicle to be present in or use any closed park as indicated in division (A) above.
- (C) *Exceptions.* The park hours listed above shall not apply to persons:
- (1) Attending events sponsored by the City Manager/Community Services Department or the events or activities conducted pursuant to a written permit issued by the City Manager;
 - (2) Engaged in city business;
 - (3) Engaged in an authorized city program or activity; or
 - (4) Engaged in an activity at a city park or community center for which a city facility reservation permit authorizing use during non-daylight hours has been obtained from the City Manager/Community Services Department.
- (D) *Emergency park closure.* Whenever a danger to the public health or safety is created in any public park by such causes as flood, storm, fire, earthquake, explosion, accident or other disaster, or by riot or unlawful assembly, the City Manager or designee may close the area where the danger exists for the duration thereof to any and all person not authorized to enter or remain within such closed area. No unauthorized person shall willfully and knowingly enter an area closed pursuant to this section nor shall willfully remain within such area after receiving notice to evacuate or leave the area.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on the nearby roadways. The following describes the measurement procedures, measurement locations, noise measurement results, and the modeling of the existing noise environment.

5.1 Noise Measurement Equipment

The noise measurements were taken using three Larson Davis Model LXT1 Class 1 sound level meters programmed in “slow” mode to record the sound pressure level at 1-second intervals for 24 hours in “A” weighted form. In addition, the L_{eq} averaged over the entire measuring time and L_{max} were recorded with the three sound level meters. The sound level meters and microphones were mounted on trees and walls, were placed between four and six feet above the ground and were equipped with windscreens during all measurements. The noise meters were calibrated before and after the monitoring using a Larson Davis Cal200 calibrator. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (ANSI S1.4-2014 standard).

Noise Measurement Locations

The noise monitoring locations were selected in order to obtain noise levels in the vicinity of the project site. Descriptions of the noise monitoring sites are provided below in Table D and are shown in Figure 5. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 11:01 a.m. on Monday, June 26, 2023 and 11:11 a.m. on Tuesday, June 27, 2023. At the start of the noise measurements, the sky was clear (no clouds), the temperature was 76 degrees Fahrenheit, the humidity was 32 percent, barometric pressure was 28.38 inches of mercury, and the wind was blowing around two miles per hour. Overnight, the temperature dropped to 50 degrees Fahrenheit and the humidity peaked at 91 percent. At the conclusion of the noise measurements, the sky was clear, the temperature was 84 degrees Fahrenheit, the humidity was 35 percent, barometric pressure was 28.32 inches of mercury, and the wind was blowing around four miles per hour.

5.2 Noise Measurement Results

The results of the noise level measurements are presented in Table D. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table D also shows the L_{eq} , L_{max} , and CNEL, based on the entire measurement time. The CNEL was calculated through use of the hourly L_{eq} that was entered into Equation 2-23 from *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans, September 2013. The noise monitoring data printouts are included in Appendix B. Figure 6 shows a graph of the 24-hour noise measurements.

Table D – Existing (Ambient) Noise Level Measurements

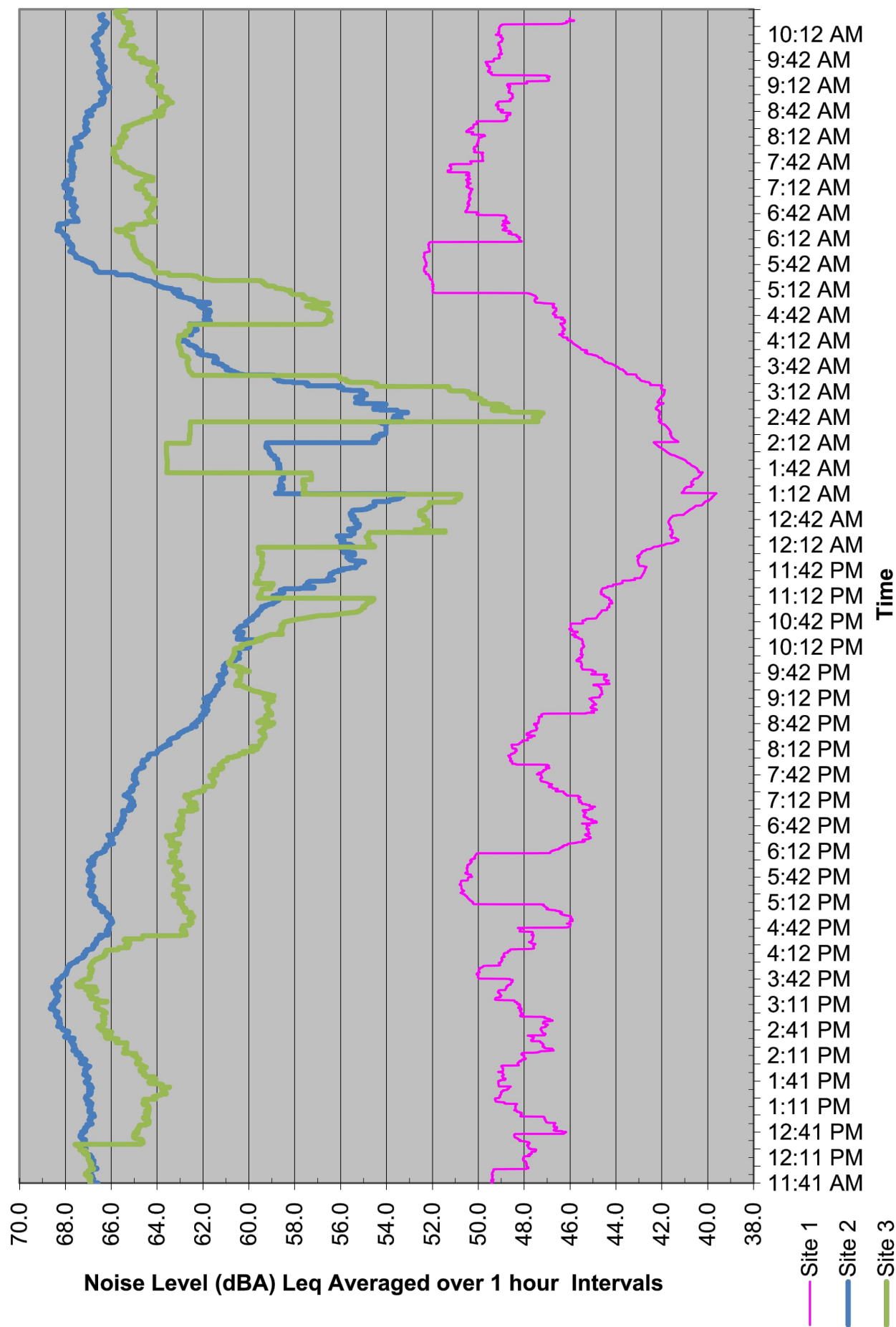
Site No.	Site Description	Average (dBA L _{eq})		1-hr Average (dBA L _{eq} /Time)		24-hour dBA CNEL
		Daytime ¹	Nighttime ²	Minimum	Maximum	
1	Located on a wall near the east side of the project site in front of the home at 28624 Mahogany Trail Way, approximately 40 feet east of Mahogany Trail Way centerline.	48.4	46.6	39.6 1:12 a.m.	52.4 5:34 a.m.	53.5
2	Located northwest of the project site on a tree on the north side of Simpson Road, approximately 50 feet north of Simpson Road centerline.	66.5	62.3	53.1 2:47 a.m.	68.7 3:07 p.m.	69.9
3	Located northeast of the project site on a tree on the north side of Simpson Road, approximately 70 feet north of Simpson Road centerline and 85 feet west of Briggs Road centerline	64.5	61.0	47.2 2:46 a.m.	67.6 12:26 p.m.	65.4

Notes:

¹ Daytime defined as 7:00 a.m. to 10:00 p.m. (General Plan Policy N-1.7)² Nighttime define as 10:00 p.m. to 7:00 a.m. (General Plan Policy N-1.7)

Source: Noise measurements taken between Monday, June 26, 2023 and Tuesday, June 27, 2023.





SOURCE: Three Larson Davis Model LXT1 Type 1 Sound Level Meters.

Figure 6
Field Noise Measurements Graph

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table E below provides a list of the construction equipment anticipated to be used for each phase of construction that was obtained from the *Air Quality, Energy, and Greenhouse Gas Emissions and Health Risk Assessment Impact Analysis Tentative Tract Map No. 38625 Residential Project* (Air Quality Analysis), prepared by Vista Environmental, September 26, 2023.

Table E – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor ¹ (percent)	Spec 721.560 Lmax at 50 feet ² (dBA, slow ³)	Actual Measured Lmax at 50 feet ⁴ (dBA, slow ³)
Site Preparation				
Rubber Tired Dozers	3	40	85	82
Crawler Tractors	4	40	84	N/A
Scraper	2	40	85	84
Grading				
Excavators	2	40	85	81
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Scraper	2	40	85	84
Crawler Tractors	2	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	50	82	81
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Backhoe	1	40	80	78
Welder	1	40	73	74
Paving				
Paver	2	50	85	77
Paving Equipment	2	50	85	77
Roller	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:

¹ Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.

² Spec 721.560 is the equipment noise level utilized by the RCNM program.

³ The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.

⁴ Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table E shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage factors listed in Table E and through use of the RCNM. For each phase of construction, all construction equipment was analyzed based on being placed in the middle of the project site, which is based on the analysis methodology detailed in FTA Manual for a General Assessment. However, in order to provide a conservative analysis, all equipment was analyzed, instead of just the two noisiest pieces of equipment as detailed in the FTA Manual. In addition, 5 dB of shielding was added to the RCNM model for the homes to the west and north, in order to account for the existing approximately 6 foot high walls located between the project site and homes to the west and on the north side of Simpson Road. The RCNM model printouts are provided in Appendix C.

6.2 Operations-Related Noise

FHWA Model Methodology

The proposed project would result in increases in traffic noise to the nearby roadways as well as introduce new sensitive receptors to the project site. The project impacts to the offsite roadways were analyzed through use of the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108 (FHWA Model). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the reference energy mean emission level to account for: the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT) and the percentage of ADT which flows during the day, evening and night, the travel speed, the vehicle mix on the roadway, which is a percentage of the volume of automobiles, medium trucks and heavy trucks, the roadway grade, the angle of view of the observer exposed to the roadway and site conditions ("hard" or "soft" relates to the absorption of the ground, pavement or landscaping). The following section provides a discussion of the software and modeling input parameters used in this analysis and a discussion of the resultant existing noise model.

FHWA Model Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented in Table F. The roadway segments that were analyzed were based on having at least 10 percent of the project generated traffic and have sensitive receptors adjacent to the road segment. The roadway classifications are based on the City's General Plan Circulation Element. The roadway speeds are based on the posted speed limits. The distance to the nearest sensitive receptor was determined by measuring the distance from the roadway centerline to the nearest residence. Since the study area is located in a suburban environment and landscaping or natural vegetation exists along the sides of the analyzed roads, soft site conditions were modeled.

Table F – FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Distance to Nearest Receptor ¹ (feet)
Meniffee Road	North of McCall Boulevard	Arterial	55	110
Meniffee Road	South of Simpson Road	Arterial	50	90
Meniffee Road	South of Newport Road	Arterial	45	100
Briggs Road	North of McCall Boulevard	Major	45	90
Briggs Road	North of Simpson Road	Major	45	110
McCall Boulevard	West of Meniffee Road	Urban Arterial	50	75
McCall Boulevard	West of Briggs Road	Urban Arterial	50	110
Simpson Road	East of Meniffee Road	Secondary	50	80
Simpson Road	East of Lindenberger Road	Secondary	50	70
Simpson Road	East of Briggs Road	Secondary	55	70
Simpson Road	East of Leon Road	Secondary	55	80
Newport Road	West of Meniffee Road	Urban Arterial	45	100

Notes:

¹ Distance measured from nearest offsite residential structure to centerline of roadway.

Source: City of Meniffee, 2013.

The average daily traffic (ADT) volumes were obtained from the *Salt Creek (TTM No. 38625, RTP 23-039) Traffic Analysis* (Traffic Analysis), prepared by Urban Crossroads, September 27, 2023. The ADT volumes used in this analysis are shown in Table G.

Table G – Average Daily Traffic Volumes

Roadway	Segment	Average Daily Traffic Volumes			
		Existing	Existing + Project	Year 2029 No Project	Year 2029 + Project
Meniffee Road	North of McCall Boulevard	12,500	12,800	24,200	24,500
Meniffee Road	South of Simpson Road	13,100	14,500	17,850	19,250
Meniffee Road	South of Newport Road	14,400	14,750	26,200	26,500
Briggs Road	North of McCall Boulevard	6,350	6,650	7,150	7,450
Briggs Road	North of Simpson Road	4,150	5,250	20,000	21,100
McCall Boulevard	West of Meniffee Road	16,700	17,150	26,900	27,350
McCall Boulevard	West of Briggs Road	5,050	5,800	21,650	22,450
Simpson Road	East of Meniffee Road	8,000	9,400	9,950	11,350
Simpson Road	East of Lindenberger Road	8,500	9,900	10,500	11,900
Simpson Road	East of Briggs Road	8,500	9,100	24,950	25,600
Simpson Road	East of Leon Road	7,800	8,250	25,100	25,550
Newport Road	West of Meniffee Road	49,900	51,000	69,550	70,650

Source: City of Meniffee, 2013; Urban Crossroads, 2023.

The vehicle mixes used in the FHWA-RD-77-108 Model are shown in Table H and is based on the typical vehicle mixes observed in Riverside County. The vehicle mixes provides the hourly distribution percentages of automobiles, medium trucks, and heavy trucks for input into the FHWA model.

Table H – Roadway Vehicle Mixes

Vehicle Type	Traffic Flow Distributions			Overall
	Day (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	
Secondary and Local				
Automobiles	73.60%	13.60%	10.22%	97.42%
Medium Trucks	0.90%	0.04%	0.9%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%
Major and Arterial				
Automobiles	69.50%	12.90%	9.60%	92.00%
Medium Trucks	1.44%	0.06%	1.50%	3.00%
Heavy Trucks	2.40%	0.10%	2.50%	5.00%

Source: County of Riverside, 2015.

FHWA Model Source Assumptions

To assess the roadway noise generation in a uniform manner, all vehicles are analyzed at the single lane equivalent acoustic center of the roadway being analyzed. In order to determine the height above the road grade where the noise is being emitted from, each type of vehicle has been analyzed independently with autos at road grade, medium trucks at 2.3 feet above road grade, and heavy trucks at 8 feet above road grade. These elevations were determined through a noise-weighted average of the elevation of the exhaust pipe, tires and mechanical parts in the engine, which are the primary noise emitters from a vehicle.

6.3 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to damage at the highest levels. Table I gives approximate vibration levels for particular construction activities. The data in Table I provides a reasonable estimate for a wide range of soil conditions.

Table I – Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity (inches/second)	Approximate Vibration Level (L _v) at 25 feet
Pile driver (impact)	Upper range	1.518	112
	typical	0.644	104
Pile driver (sonic)	Upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drill		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, 2018.

The construction-related vibration impacts have been calculated through the vibration levels shown above in Table I and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table E.

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The following section calculates the potential noise emissions associated with the temporary construction activities and long-term operations of the proposed project and compares the noise levels to the City standards.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include site preparation and grading of up to 51.2 acres of the 55.4 gross acre project site that would include import of approximately 343,790 cubic yards of dirt to the project site, building construction of 330 single-family homes, paving of the onsite roads, sidewalks and hardscapes and extension of Briggs Road along the eastern edge of the project site, and application of architectural coatings. Construction activities would primarily create noise impacts from haul truck trips on the nearby roadways and from off-road equipment operating on the project site that have been analyzed separately below.

Haul Trucks on Nearby Roads

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic and the change in number of trucks in the traffic flow that would occur during the import of dirt to the project site. The Air Quality Analysis found that the import of dirt would generate up to 287 haul truck trips per day, which would represent 3.4 percent of the 8,500 daily trips that current travel on Simpson Road in the vicinity of the project site.

Neither the General Plan nor the Municipal Code defines what constitutes a "substantial permanent increase to ambient noise levels". As such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table A that shows that the

project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing roadway noise levels.

Since it is not known at this time the path of travel the haul trucks with the imported dirt will utilize, a worst-case analysis has been provided, that analyzes 100 percent of the haul truck trips traveling west on Simpson Road and 100 percent of the haul truck trips traveling east on Simpson Road. The potential offsite haul truck noise impacts created during construction of the proposed project have been analyzed through utilization of the FHWA model and parameters described above in Section 6.2 and the FHWA model traffic noise calculation spreadsheets are provided in Appendix D. The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the without project scenario to the With Project scenario. The results of this comparison are shown in Table J.

Table J – Proposed Construction-Related Haul Truck Noise Contributions to Nearby Homes

Roadway	Segment	dBA CNEL at Nearest Receptor ¹			
		Without Project	With Haul Trucks	Project Contribution	Increase Threshold ²
Simpson Road	East of Lindenberger Road	65.2	65.3	+0.1	+1 dBA
Simpson Road	East of Briggs Road	66.4	66.5	+0.1	+1 dBA

Notes:

¹ Distance to nearest existing homes shown in Table F, does not take into account existing noise barriers.

² Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table A.

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table J shows that the proposed project's construction-related noise increases to the nearby homes created from the haul trucks importing dirt to the project site would not exceed the FTA's allowable increase thresholds detailed above. Therefore, the vehicular traffic generated by construction of the proposed project would not result in a substantial permanent increase in ambient noise levels. Impacts would be less than significant.

Off-Road Construction Equipment Operating Onsite

Noise impacts from off-road construction equipment associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the project site are residents at the single-family homes on the west side of the project site, located as near as 12 feet west of the project site. There are also single-family homes on the north side of Simpson Road that are located as near as 120 feet north of the project site.

Section 9.09.030(B) of the City's Municipal Code exempts noise sources associated with new, private construction projects located within one-quarter of a mile from an inhabited dwelling from the City's noise standards provided construction activities do not occur either: (1) Between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September; or (2) Between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May. However, the City construction noise standards do not provide any limits to the noise levels that may be created from construction activities and even with adherence to the City standards, the resultant construction noise levels may result in a significant substantial temporary noise increase to the nearby residents.

In order to determine if the proposed construction activities would create a significant substantial temporary noise increase, the FTA construction noise criteria thresholds detailed above in Section 4.1 have been utilized, which shows that a significant construction noise impact would occur if construction noise exceeds 80 dBA during the daytime at any of the nearby homes.

Construction noise levels to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table E – Construction Equipment Noise Emissions and Usage Factors. The results are shown below in Table K and the RCNM printouts are provided in Appendix C.

Table K – Construction Noise Levels at the Nearby Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:	
	Homes to West ¹	Homes to North ²
Site Preparation	61	58
Grading	61	57
Building Construction	59	56
Paving	54	50
Painting	46	43
FTA Construction Noise Threshold³	80	80
Exceed Thresholds?	No	No

¹ The homes to the west are located as near as 677 feet from center of project site. 5 dB of shielding was added to RCNM in order to account for the existing 6-foot wall on west side of project site.

² The homes to the north are located as near as 1,020 feet from center of project site. 5 dB of shielding was added to RCNM in order to account for the existing 6-foot wall on the north side of Simpson Road.

³ The FTA Construction noise thresholds are detailed above in Table B.

Source: RCNM, Federal Highway Administration, 2006

Table K shows that the greatest noise impacts would occur during the site preparation and grading phases, with noise levels as high as 61 dBA Leq at the nearest homes to the west. All calculated construction noise levels shown in Table K are within the FTA daytime construction noise standard of 80 dBA averaged over eight hours. Therefore, through adherence to the allowable construction times provided in Section 9.09.030(B) of the City's Municipal Code, the construction activities for the proposed project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Operational-Related Noise

The proposed project would consist of the development of 330 single-family detached homes that would include approximately 8.6 acres of open space area of which the southern portion of the project site would be designated as a City park and would include combo tennis/pickle ball courts, grass playfields, tot lots, sitting areas with possible shade structures, walkways and a parking lot. Near the middle of the project site there would also be a recreation center that would include a pool with showers and restrooms, a shade structure and barbeque area.

Potential noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the nearby roadways and from activities at the proposed City Park that may create exterior and interior noise levels in excess of City standards at the proposed homes. In addition, the proposed development would be adjacent to Simpson Road and Briggs Road, which may create exterior and interior noise levels in excess of City standards at the proposed homes. The noise impacts to

the nearby existing homes and proposed homes from roadway noise and from proposed onsite activity areas have been analyzed separately below.

Roadway Vehicular Noise Impacts to Nearby Existing Homes

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

Neither the General Plan nor the Municipal Code defines what constitutes a "substantial permanent increase to ambient noise levels". As such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table A that shows that the project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing roadway noise levels.

The potential offsite traffic noise impacts created by the on-going operations of the proposed project have been analyzed through utilization of the FHWA model and parameters described above in Section 6.2 and the FHWA model traffic noise calculation spreadsheets are provided in Appendix D. The proposed project's potential offsite traffic noise impacts have been analyzed for the existing year and opening year 2029 scenarios that are discussed separately below.

Existing Year Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the Existing scenario to the Existing With Project scenario. The results of this comparison are shown in Table L.

Table L – Existing Year Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor ¹			Increase Threshold ²
		Existing	Existing Plus Project	Project Contribution	
Menifee Road	North of McCall Boulevard	64.1	64.2	+0.1	+2 dBA
Menifee Road	South of Simpson Road	64.5	64.9	+0.4	+1 dBA
Menifee Road	South of Newport Road	63.0	63.1	+0.1	+2 dBA
Briggs Road	North of McCall Boulevard	60.3	60.5	+0.2	+2 dBA
Briggs Road	North of Simpson Road	57.0	58.0	+1.0	+3 dBA
McCall Boulevard	West of Menifee Road	67.6	67.8	+0.2	+1 dBA
McCall Boulevard	West of Briggs Road	59.4	60.0	+0.6	+3 dBA
Simpson Road	East of Menifee Road	63.8	64.5	+0.7	+2 dBA
Simpson Road	East of Lindenberger Road	65.2	65.9	+0.7	+1 dBA
Simpson Road	East of Briggs Road	66.4	66.7	+0.3	+1 dBA
Simpson Road	East of Leon Road	64.9	65.1	+0.2	+1 dBA
Newport Road	West of Menifee Road	68.8	68.9	+0.1	+1 dBA

Notes:

¹ Distance to nearest sensitive receptors shown in Table F, does not take into account existing noise barriers.

² Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table A.
Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table L shows that the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the traffic noise increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the existing conditions. Impacts would be less than significant.

Opening Year 2029 Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the opening year 2029 scenario to the opening year 2029 with project scenario. The results of this comparison are shown in Table M.

Table M – Opening Year 2029 Project Traffic Noise Contributions

Roadway	Segment	dBA CNEL at Nearest Receptor ¹			Increase Threshold ²
		2029 No Project	2029 Plus Project	Project Contribution	
Menifee Road	North of McCall Boulevard	66.9	67.0	+0.1	+1 dBA
Menifee Road	South of Simpson Road	65.8	66.2	+0.4	+1 dBA
Menifee Road	South of Newport Road	65.6	65.6	+0.0	+1 dBA
Briggs Road	North of McCall Boulevard	60.8	60.9	+0.1	+2 dBA
Briggs Road	North of Simpson Road	63.8	64.1	+0.3	+2 dBA
McCall Boulevard	West of Menifee Road	69.7	69.8	+0.1	+1 dBA
McCall Boulevard	West of Briggs Road	65.7	65.8	+0.1	+1 dBA
Simpson Road	East of Menifee Road	64.7	65.3	+0.6	+1 dBA
Simpson Road	East of Lindenberger Road	66.1	66.7	+0.6	+1 dBA
Simpson Road	East of Briggs Road	71.1	71.2	+0.1	+1 dBA
Simpson Road	East of Leon Road	69.9	70.0	+0.1	+1 dBA
Newport Road	West of Menifee Road	70.3	70.3	+0.0	+1 dBA

Notes:

¹ Distance to nearest sensitive receptors shown in Table F, does not take into account existing noise barriers.

² Increase Threshold obtained from the FTA's allowable noise impact exposures detailed above in Table A.

Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table M shows that the proposed project's permanent noise increases to the nearby homes from the generation of additional vehicular traffic would not exceed the traffic noise increase thresholds detailed above. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels for the opening year 2029 conditions. Impacts would be less than significant.

Roadway Noise Impacts to Proposed Homes

The north side of the proposed project is located adjacent to Simpson Road. General Plan Noise Element Policy N1.11 discourages the siting of noise-sensitive uses that includes single-family homes in areas in excess of 65 dBA CNEL without appropriate mitigation. Since the City does not provide an interior noise standard from transportation noise sources, the Title 24 interior noise standard of 45 dBA CNEL has been utilized in this analysis.

It is anticipated that the primary source of noise impacts to the project site will be traffic noise from Simpson Road that is adjacent to the north side of the project site and from Briggs Road that is adjacent to the east side of the project site. The FHWA traffic noise prediction model parameters used in this analysis are discussed above in detail in Section 6.2 and the FHWA model printouts are provided in Appendix E. The anticipated exterior noise levels have been calculated for backyards that are adjacent to Simpson Road and Briggs Road for representative lots and the results are shown below in Table N. Table N also shows the anticipated interior noise levels at the proposed homes. According to *Highway Traffic Noise: Analysis and Abatement Guidance*, prepared by U.S. Department of Transportation, December, 2011, a new residential building provides a minimum of 10 dB of noise attenuation with windows open and a minimum of 25 dB of noise attenuation with windows closed and dual-paned windows. The proposed residential structures will be required to be designed to meet the CCR Title 24, Part 6: California's Energy Efficiency Standards that require the installation of dual paned windows in the climate zone where the proposed project is located. Project Design Feature 1 has been included in this analysis to ensure that each townhome has a forced air heating and air conditioning system so that windows may be kept in the closed position.

Table N – Proposed Homes Exterior and Interior Noise Levels

Lot Number	Roadway	Exterior Backyard Noise Level ¹ (dBA CNEL)	Interior Noise Levels		Exceed 60 dBA Exterior or 45 dBA Interior Threshold?
			Floor	Noise Level (dBA CNEL) ²	
3	Simpson Road	64	First	36	No/No
			Second	44	No/No
9	Simpson Road	63	First	35	No/No
			Second	44	No/No
14	Simpson Road	63	First	35	No/No
			Second	44	No/No
20	Simpson Road	63	First	35	No/No
			Second	44	No/No
23	Briggs Road	50	First	24	No/No
			Second	33	No/No
31	Briggs Road	51	First	24	No/No
			Second	33	No/No
202	Briggs Road	51	First	25	No/No
			Second	33	No/No

Notes:

¹ Although not shown on Site Plan, the City typically requires construction of a 6-foot high cmu wall adjacent to Secondary and Major roadways.

² Interior noise level based on a 25 dB exterior to interior noise reduction rate with implementation of Project Design Feature 1 that allows for a "windows closed" condition (U.S. Department of Transportation, 2011)

Source: FHWA RD-77-108 Model.

Table N shows that the noise levels at all analyzed homes backyards would be within the residential exterior noise standard of 65 dBA CNEL. Table N also shows that the interior noise levels of all analyzed homes would be within the 45 dBA CNEL interior noise standard. Impacts would be less than significant.

Proposed Onsite Activity Areas Noise Impacts

The proposed project includes development of a City Park that would contain combo tennis/pickle ball courts, grass playfields, tot lots, sitting areas with possible shade structures, walkways and a parking lot. Near the middle of the project site there would also be a recreation center that would include a pool with showers and restrooms, a shade structure and barbeque area.

Section 9.09.050 of the Municipal Code limits noise impacts to 65 dBA Leq at the exterior and 55 dBA Leq at the interior of the nearby homes between 7 a.m. and 10 p.m.. According to the project applicant, the proposed recreation center will have operating hours of 7 a.m. to 10 p.m. and would be locked every night and the proposed park would likely be closed or at least be limited to non-noise creating activities, such as walkers and joggers between 10 p.m. and 7 a.m. and as such, this analysis is limited to the daytime activities and noise standards. Project Design Feature 2 has been incorporated into this analysis in order to ensure that the recreation center is closed between the hours of 10 p.m. and 7 a.m..

Since the proposed homes must be constructed to meet the required California Code of Regulations Title 24, Part 6 building energy-efficiency standards that require the installation of dual-paned windows as well as enhanced insulation requirements, which provides a minimum 25 dB of exterior to interior noise reduction, this analysis has utilized only the exterior noise standard, since it is not possible to exceed the interior noise standard, without also exceeding the exterior noise standard.

In order to determine the noise impacts created from the proposed grass playfields, tot lots, sitting areas and parking lot, reference noise measurements were taken of each noise source and the noise measurement printouts are provided in Appendix F. Table O provides a summary of the reference noise levels and the anticipated noise level from each source at the nearest existing or proposed home to each noise source. Since the proposed park is laid out in a linear manner and each noise source is spread out, and the proposed recreation center is located away from the park, it is unlikely that any single home would be impacted by multiple noise sources from the proposed park and as such each noise source has been analyzed separately. The noise levels at the nearby homes were calculated based on standard geometric spreading of noise, which provides an attenuation rate of 6 dB per doubling the distance between source and receptor. The noise reduction calculations provided by the proposed minimum 6.0-foot high sound walls located between the proposed homes backyards and proposed onsite activity areas that are shown in the proposed Fence and Wall Plan (see Figure 4) are shown in Appendix F.

Table O – Proposed Activity Areas Operational Noise Levels at the Nearest Homes

Noise Source	Reference Noise Measurements		Calculated Noise Levels		City Standard (dBA Leq)	Exceed City Standard?
	Distance to Source (feet)	Reference Noise Level (dBA Leq)	Nearest Home (feet)	Noise Level ¹ (dBA Leq)		
Tot Lot	5	66.6	75	36	65	No
Grass Playfields	5	58.9	50	31	65	No
Shade Structures	30	58.7	35	51	65	No
Tennis/Pickle Ball Courts	14	63.6	50	46	65	No
Parking Area	5	52.1	45	25	65	No
Recreation Center	15	66.6	15	60	65	No

Notes:

¹ The calculated noise levels account for the noise reduction provided by the proposed 6.0-foot high walls between the proposed homes backyards and the onsite activity areas as detailed on the Proposed Wall and Fence Plan (see Figure 3).

Source: Reference noise measurement printouts and wall noise reduction calculations are provided in Appendix F.

Table O shows that that noise from all proposed activity area noise sources associated with the operation of the proposed project would be within the City's daytime residential exterior noise standard of 65 dBA Leq at the nearest home to each noise source. It should be noted that the nearby existing homes are all located further away to each source than the proposed homes, and as such the impacts to the nearby existing homes would be lower than what is shown in Table O. Therefore, the proposed activity areas operational noise levels would result in a less than significant impact.

Level of Significance

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include site preparation and grading of up to 51.2 acres of the 55.4 gross acre project site that would include import of approximately 343,790 cubic yards of dirt to the project site, building construction of 330 single-family homes, paving of the onsite roads, sidewalks and hardscapes and extension of Briggs Road along the eastern edge of the project site, and application of architectural coatings. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors to the project site are residents at the single-family homes on the west side of the project site, located as near as 12 feet west of the project site.

Since neither the Municipal nor the General Plan provide a quantifiable vibration threshold for temporary construction activities, guidance from the *Transportation and Construction-Induced Vibration Guidance Manual*, prepared by Caltrans, April 2020, has been utilized, which defines the threshold of perception from transient sources such as off-road construction equipment at 0.25 inch per second peak particle velocity (PPV).

The primary source of vibration during construction would be from the operation of a bulldozer. From Table I above a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite home (12 feet to the west) would be 0.20 inch per second PPV. The vibration level at the nearest offsite home would be below the 0.25 inch per second PPV threshold detailed above. Impacts would be less than significant.

Operations-Related Vibration Impacts

The proposed project would consist of the development of a residential community with 330 single-family homes and a City Park. The on-going operation of the proposed project would not include the operation of any known vibration sources other than typical onsite vehicle operations for a residential development. Therefore, a less than significant vibration impact is anticipated from operation of the proposed project.

Level of Significance

Less than significant impact.

7.4 Aircraft Noise

The proposed project may expose people residing in the project area to excessive noise levels from aircraft. The nearest airport is the Perris Valley Airport that is located as near as 5.8 miles northwest of the project site. The project site is located outside of the 60 dBA CNEL noise contours of this Airport. Therefore, the proposed homes would not be exposed to excessive aircraft noise. Impacts would be less than significant.

Level of Significance

Less than significant impact.

8.0 REFERENCES

California Department of Transportation, *2016 Annual Average Daily Truck Traffic on the California State Highway System*, 2018.

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analytics Protocol*, September 2013.

California Department of Transportation, *Transportation- and Construction Vibration Guidance Manual*, April 2020.

City of Menifee, *City of Menifee General Plan*, 2013.

City of Menifee, *Menifee General Plan Draft Environmental Impact Report*, September 2013.

County of Riverside, *County of Riverside General Plan*, December 2015.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

Urban Crossroads, *Salt Creek (TTM NO. 38625, RTP 23-039) Traffic Analysis*, September 27, 2023.

U.S. Department of Transportation, *FHWA Roadway Construction Noise Model User's Guide*, January, 2006.

U.S. Department of Transportation, *Highway Traffic Noise: Analysis and Abatement Guidance*, December, 2011.

Vista Environmental, *Air Quality, Energy, and Greenhouse Gas Emissions and Health Risk Assessment Impact Analysis Tentative Tract Map No. 38625 Residential Project*, September 26, 2023.

APPENDIX A

Field Noise Measurements Photo Index



Noise Measurement Site 1 - looking north



Noise Measurement Site 1 - looking northeast



Noise Measurement Site 1 - looking east



Noise Measurement Site 1 - looking southeast



Noise Measurement Site 1 - looking south



Noise Measurement Site 1 - looking southwest



Noise Measurement Site 1 - looking west



Noise Measurement Site 1 - looking northwest



Noise Measurement Site 2 - looking north



Noise Measurement Site 2 - looking northeast



Noise Measurement Site 2 - looking east



Noise Measurement Site 2 - looking southeast



Noise Measurement Site 2 - looking south



Noise Measurement Site 2 - looking southwest



Noise Measurement Site 2 - looking west



Noise Measurement Site 2 - looking northwest



Noise Measurement Site 3 - looking north



Noise Measurement Site 3 - looking northeast



Noise Measurement Site 3 - looking east



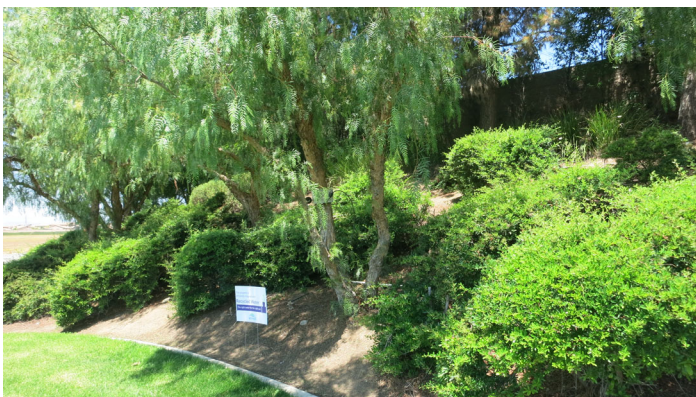
Noise Measurement Site 3 - looking southeast



Noise Measurement Site 3 - looking south



Noise Measurement Site 3 - looking southwest



Noise Measurement Site 3 - looking west



Noise Measurement Site 3 - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Site 1 - On Wall on East Side of Project Site
June 26, 2023 11:01:40 AM Leq Daytime = 48.4
Sampling Time = 1 sec Freq Weighting=A Leq Nighttime = 46.6
Record Num = 86402 CNEL(24hr)= 53.5
Leq = 47.8 Ldn(24hr)= 53.3
Min = 32.8 Min Leq hr at 1:12 AM 39.6
Max = 78.6 Max Leq hr at 5:34 AM 52.4

Site 1 - On Wall on East Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
59.3	11:01:40		59.3
55.1	11:01:41		55.1
56.1	11:01:42		56.1
51.6	11:01:43		51.6
53.4	11:01:44		53.4
54.8	11:01:45		54.8
58.6	11:01:46		58.6
56.3	11:01:47		56.3
54.7	11:01:48		54.7
54.2	11:01:49		54.2
50.0	11:01:50		50.0
55.9	11:01:51		55.9
51.9	11:01:52		51.9
50.0	11:01:53		50.0
56.6	11:01:54		56.6
56.3	11:01:55		56.3
52.7	11:01:56		52.7
53.3	11:01:57		53.3
59.2	11:01:58		59.2
59.5	11:01:59		59.5
59.0	11:02:00		59.0
59.7	11:02:01		59.7
60.5	11:02:02		60.5
58.5	11:02:03		58.5
59.3	11:02:04		59.3
59.8	11:02:05		59.8
58.4	11:02:06		58.4
57.1	11:02:07		57.1
57.9	11:02:08		57.9
59.7	11:02:09		59.7
61.7	11:02:10		61.7
59.4	11:02:11		59.4
58.2	11:02:12		58.2
58.3	11:02:13		58.3
59.5	11:02:14		59.5
60.2	11:02:15		60.2
58.7	11:02:16		58.7
52.1	11:02:17		52.1
53.1	11:02:18		53.1
59.0	11:02:19		59.0
55.1	11:02:20		55.1
52.0	11:02:21		52.0
49.8	11:02:22		49.8
47.9	11:02:23		47.9
51.4	11:02:24		51.4
57.2	11:02:25		57.2
53.4	11:02:26		53.4
49.3	11:02:27		49.3
48.5	11:02:28		48.5
49.1	11:02:29		49.1
55.6	11:02:30		55.6
51.7	11:02:31		51.7
57.9	11:02:32		57.9
53.8	11:02:33		53.8
50.7	11:02:34		50.7
57.4	11:02:35		57.4
55.7	11:02:36		55.7
50.4	11:02:37		50.4
54.4	11:02:38		54.4
55.5	11:02:39		55.5
52.8	11:02:40		52.8
58.7	11:02:41		58.7
54.7	11:02:42		54.7
50.9	11:02:43		50.9
57.6	11:02:44		57.6
54.0	11:02:45		54.0
57.5	11:02:46		57.5
58.2	11:02:47		58.2
54.9	11:02:48		54.9
50.7	11:02:49		50.7
56.8	11:02:50		56.8
53.3	11:02:51		53.3
58.0	11:02:52		58.0
60.3	11:02:53		60.3
56.5	11:02:54		56.5
59.3	11:02:55		59.3
55.3	11:02:56		55.3
61.2	11:02:57		61.2
57.2	11:02:58		57.2
55.8	11:02:59		55.8
54.8	11:03:00		54.8
52.4	11:03:01		52.4
49.3	11:03:02		49.3
48.0	11:03:03		48.0
47.1	11:03:04		47.1
45.1	11:03:05		45.1
44.2	11:03:06		44.2
43.8	11:03:07		43.8
43.1	11:03:08		43.1
42.1	11:03:09		42.1
42.8	11:03:10		42.8
42.6	11:03:11		42.6
41.3	11:03:12		41.3
40.3	11:03:13		40.3
41.3	11:03:14		41.3
42.8	11:03:15		42.8
42.5	11:03:16		42.5
41.7	11:03:17		41.7
41.9	11:03:18		41.9
42.2	11:03:19		42.2
41.9	11:03:20		41.9
41.1	11:03:21		41.1
39.8	11:03:22		39.8
38.9	11:03:23		38.9
38.7	11:03:24		38.7
39.8	11:03:25		39.8
41.6	11:03:26		41.6
45.8	11:03:27		45.8
49.3	11:03:28		49.3
48.9	11:03:29		48.9
47.7	11:03:30		47.7
47.2	11:03:31		47.2
45.7	11:03:32		45.7
44.3	11:03:33		44.3
43.1	11:03:34		43.1
42.0	11:03:35		42.0
42.1	11:03:36		42.1
40.8	11:03:37		40.8
40.1	11:03:38		40.1
39.8	11:03:39		39.8
39.0	11:03:40		39.0
54.1	11:03:41		54.1
51.3	11:03:42		51.3
48.7	11:03:43		48.7
46.4	11:03:44		46.4
44.0	11:03:45		44.0
42.1	11:03:46		42.1
40.9	11:03:47		40.9
40.0	11:03:48		40.0
39.2	11:03:49		39.2
39.1	11:03:50		39.1
39.2	11:03:51		39.2
39.8	11:03:52		39.8
40.6	11:03:53		40.6
42.3	11:03:54		42.3
45.5	11:03:55		45.5
44.7	11:03:56		44.7
42.1	11:03:57		42.1
40.3	11:03:58		40.3
40.1	11:03:59		40.1
44.1	11:04:00		44.1
44.7	11:04:01		44.7
43.2	11:04:02		43.2
42.1	11:04:03		42.1
41.6	11:04:04		41.6
47.6	11:04:05		47.6
53.5	11:04:06		53.5
52.2	11:04:07		52.2
50.4	11:04:08		50.4
49.1	11:04:09		49.1
49.7	11:04:10		49.7
50.8	11:04:11		50.8
52.9	11:04:12		52.9
54.3	11:04:13		54.3
51.7	11:04:14		51.7
49.4	11:04:15		49.4
48.5	11:04:16		48.5
48.2	11:04:17		48.2
47.3	11:04:18		47.3
46.3	11:04:19		46.3
45.5	11:04:20		45.5
44.2	11:04:21		44.2
43.2	11:04:22		43.2
41.6	11:04:23		41.6

Site 2 - On Tree North of NW Corner of Project Site
June 26, 2023 11:05:52 AM Leq Daytime = 66.5
Sampling Time = 1 sec Freq Weighting=A Leq Nighttime = 62.3
Record Num = 86402 CNEL(24hr)= 69.9
Leq = 65.4 Ldn(24hr)= 69.6
Min = 33.2 Min Leq hr at 2:47 AM 53.1
Max = 89.8 Max Leq hr at 3:07 PM 68.7

Site 2 - On Tree North of NW Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn CNEL
58.8	11:05:52		58.8
57.4	11:05:53		57.4
61.1	11:05:54		61.1
62.7	11:05:55		62.7
65.8	11:05:56		65.8
70.0	11:05:57		70.0
67.5	11:05:58		67.5
64.2	11:05:59		64.2
60.2	11:06:00		60.2
56.6	11:06:01		56.6
53.6	11:06:02		53.6
55.7	11:06:03		55.7
59.6	11:06:04		59.6
59.1	11:06:05		59.1
63.3	11:06:06		63.3
61.0	11:06:07		61.0
59.2	11:06:08		59.2
56.3	11:06:09		56.3
53.3	11:06:10		53.3
52.1	11:06:11		52.1
56.2	11:06:12		56.2
65.1	11:06:13		65.1
69.1	11:06:14		69.1
70.0	11:06:15		70.0
71.3	11:06:16		71.3
76.5	11:06:17		76.5
80.8	11:06:18		80.8
77.1	11:06:19		77.1
73.5	11:06:20		73.5
69.7	11:06:21		69.7
66.4	11:06:22		66.4
63.1	11:06:23		63.1
60.3	11:06:24		60.3
58.2	11:06:25		58.2
60.4	11:06:26		60.4
66.6	11:06:27		66.6
62.8	11:06:28		62.8
60.0	11:06:29		60.0
56.8	11:06:30		56.8
54.6	11:06:31		54.6
52.9	11:06:32		52.9
52.0	11:06:33		52.0
55.2	11:06:34		55.2
59.1	11:06:35		59.1
64.4	11:06:36		64.4
68.0	11:06:37		68.0
70.9	11:06:38		70.9
73.0	11:06:39		73.0
72.8	11:06:40		72.8
72.6	11:06:41		72.6
73.7	11:06:42		73.7
72.4	11:06:43		72.4
69.8	11:06:44		69.8
66.9	11:06:45		66.9
64.1	11:06:46		64.1
63.6	11:06:47		63.6
64.4	11:06:48		64.4
66.7	11:06:49		66.7
69.3	11:06:50		69.3
72.8	11:06:51		72.8
72.3	11:06:52		72.3
69.6	11:06:53		69.6
66.6	11:06:54		66.6
64.6	11:06:55		64.6
61.9	11:06:56		61.9
61.7	11:06:57		61.7
63.5	11:06:58		63.5
62.8	11:06:59		62.8
61.3	11:07:00		61.3
61.9	11:07:01		61.9
59.0	11:07:02		59.0
59.1	11:07:03		59.1
59.5	11:07:04		59.5
67.4	11:07:05		67.4
71.9	11:07:06		71.9
72.7	11:07:07		72.7
73.5	11:07:08		73.5
73.4	11:07:09		73.4
70.4	11:07:10		70.4
68.7	11:07:11		68.7
64.6	11:07:12		64.6
60.5	11:07:13		60.5
58.5	11:07:14		58.5
54.8	11:07:15		54.8
50.9	11:07:16		50.9
47.5	11:07:17		47.5
45.8	11:07:18		45.8
44.6	11:07:19		44.6
45.6	11:07:20		45.6
45.8	11:07:21		45.8
48.0	11:07:22		48.0
53.1	11:07:23		53.1
58.6	11:07:24		58.6
65.5	11:07:25		65.5
68.6	11:07:26		68.6
68.9	11:07:27		68.9
67.2	11:07:28		67.2
69.7	11:07:29		69.7
70.0	11:07:30		70.0
71.5	11:07:31		71.5
73.0	11:07:32		73.0
70.9	11:07:33		70.9
67.5	11:07:34		67.5
64.0	11:07:35		64.0
60.4	11:07:36		60.4
57.0	11:07:37		57.0
57.5	11:07:38		57.5
66.8	11:07:39		66.8
68.3	11:07:40		68.3
70.6	11:07:41		70.6
68.3	11:07:42		68.3
65.4	11:07:43		65.4
62.7	11:07:44		62.7
60.4	11:07:45		60.4
59.8	11:07:46		59.8
60.9	11:07:47		60.9
61.2	11:07:48		61.2
60.5	11:07:49		60.5
62.0	11:07:50		62.0
64.0	11:07:51		64.0
67.0	11:07:52		67.0
71.5	11:07:53		71.5
75.6	11:07:54		75.6
77.3	11:07:55		77.3
76.1	11:07:56		76.1
73.3	11:07:57		73.3
70.1	11:07:58		70.1
67.1	11:07:59		67.1
64.7	11:08:00		64.7
63.1	11:08:01		63.1
64.5	11:08:02		64.5
68.5	11:08:03		68.5
71.2	11:08:04		71.2
72.3	11:08:05		72.3
74.3	11:08:06		74.3
78.6	11:08:07		78.6
81.2	11:08:08		81.2
79.6	11:08:09		79.6

APPENDIX C

RCNM Model Construction Noise Calculation Printouts

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		Night			
		Daytime	Evening				
Homes to West	Residential	48.4	48.4	46.6			
Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Dozer	No	40		81.7	677	5	
Dozer	No	40		81.7	677	5	
Dozer	No	40		81.7	677	5	
Tractor	No	40	84		677	5	
Tractor	No	40	84		677	5	
Tractor	No	40	84		677	5	
Tractor	No	40	84		677	5	
Scraper	No	40		83.6	677	5	
Scraper	No	40		83.6	677	5	

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Dozer	54.0	50.1	N/A	N/A	N/A	N/A
Dozer	54.0	50.1	N/A	N/A	N/A	N/A
Dozer	54.0	50.1	N/A	N/A	N/A	N/A
Tractor	56.4	52.4	N/A	N/A	N/A	N/A
Tractor	56.4	52.4	N/A	N/A	N/A	N/A
Tractor	56.4	52.4	N/A	N/A	N/A	N/A
Tractor	56.4	52.4	N/A	N/A	N/A	N/A
Scraper	55.9	52.0	N/A	N/A	N/A	N/A
Scraper	55.9	52.0	N/A	N/A	N/A	N/A
Total	56	61	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Site Preparation

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)	
		Daytime	Evening
Homes to North	Residential	66.5	66.5

Night
62.3

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Dozer	No	40		81.7	1020	5
Dozer	No	40		81.7	1020	5
Dozer	No	40		81.7	1020	5
Tractor	No	40	84		1020	5
Tractor	No	40	84		1020	5
Tractor	No	40	84		1020	5
Tractor	No	40	84		1020	5
Scraper	No	40		83.6	1020	5
Scraper	No	40		83.6	1020	5

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Dozer	50.5	46.5	N/A	N/A	N/A	N/A
Dozer	50.5	46.5	N/A	N/A	N/A	N/A
Dozer	50.5	46.5	N/A	N/A	N/A	N/A
Tractor	52.8	48.8	N/A	N/A	N/A	N/A
Tractor	52.8	48.8	N/A	N/A	N/A	N/A
Tractor	52.8	48.8	N/A	N/A	N/A	N/A
Tractor	52.8	48.8	N/A	N/A	N/A	N/A
Scraper	52.4	48.4	N/A	N/A	N/A	N/A
Scraper	52.4	48.4	N/A	N/A	N/A	N/A
Total	53	58	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)	
		Daytime	Evening
Homes to West	Residential	48.4	48.4

Night
46.6

Description	Impact Device	Usage(%)	Equipment Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Excavator	No	40		80.7	677	5
Excavator	No	40		80.7	677	5
Grader	No	40	85		677	5
Dozer	No	40		81.7	677	5
Tractor	No	40	84		677	5
Tractor	No	40	84		677	5
Scraper	No	40		83.6	677	5
Scraper	No	40		83.6	677	5

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Excavator	53.1	49.1	N/A	N/A	N/A	N/A
Excavator	53.1	49.1	N/A	N/A	N/A	N/A
Grader	57.4	53.4	N/A	N/A	N/A	N/A
Dozer	54.0	50.1	N/A	N/A	N/A	N/A
Tractor	56.4	52.4	N/A	N/A	N/A	N/A
Tractor	56.4	52.4	N/A	N/A	N/A	N/A
Scraper	55.9	52.0	N/A	N/A	N/A	N/A
Scraper	55.9	52.0	N/A	N/A	N/A	N/A
Total	57	61	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Grading

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		Night			
		Daytime	Evening				
Homes to North	Residential	66.5	66.5	62.3			
Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Excavator	No	40		80.7	1020	5	
Excavator	No	40		80.7	1020	5	
Grader	No	40	85		1020	5	
Dozer	No	40		81.7	1020	5	
Tractor	No	40	84		1020	5	
Tractor	No	40	84		1020	5	
Scraper	No	40		83.6	1020	5	
Scraper	No	40		83.6	1020	5	

Results

	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Equipment						
Excavator	49.5	45.5	N/A	N/A	N/A	N/A
Excavator	49.5	45.5	N/A	N/A	N/A	N/A
Grader	53.8	49.8	N/A	N/A	N/A	N/A
Dozer	50.5	46.5	N/A	N/A	N/A	N/A
Tractor	52.8	48.8	N/A	N/A	N/A	N/A
Tractor	52.8	48.8	N/A	N/A	N/A	N/A
Scraper	52.4	48.4	N/A	N/A	N/A	N/A
Scraper	52.4	48.4	N/A	N/A	N/A	N/A
Total	54	57	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)	
		Daytime	Evening
Homes to West	Residential	48.4	48.4

Night
46.6

Description	Impact Device	Usage(%)	Equipment	Actual	Receptor	Estimated
			Spec Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Crane	No	16		80.6	677	5
Gradall	No	40		83.4	677	5
Gradall	No	40		83.4	677	5
Gradall	No	40		83.4	677	5
Generator	No	50		80.6	677	5
Backhoe	No	40		77.6	677	5
Front End Loader	No	40		79.1	677	5
Tractor	No	40	84		677	5
Welder / Torch	No	40		74	677	5

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Crane	52.9	45.0	N/A	N/A	N/A	N/A
Gradall	55.8	51.8	N/A	N/A	N/A	N/A
Gradall	55.8	51.8	N/A	N/A	N/A	N/A
Gradall	55.8	51.8	N/A	N/A	N/A	N/A
Generator	53.0	50.0	N/A	N/A	N/A	N/A
Backhoe	49.9	45.9	N/A	N/A	N/A	N/A
Front End Loader	51.5	47.5	N/A	N/A	N/A	N/A
Tractor	56.4	52.4	N/A	N/A	N/A	N/A
Welder / Torch	46.4	42.4	N/A	N/A	N/A	N/A
Total	56	59	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Building Construction

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		Night	Equipment Spec	Actual	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening					
Homes to North	Residential	66.5	66.5	62.3				
Description		Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane		No	16			80.6	1020	5
Gradall		No	40			83.4	1020	5
Gradall		No	40			83.4	1020	5
Gradall		No	40			83.4	1020	5
Generator		No	50			80.6	1020	5
Backhoe		No	40			77.6	1020	5
Front End Loader		No	40			79.1	1020	5
Tractor		No	40	84			1020	5
Welder / Torch		No	40			74	1020	5

Equipment	Calculated (dBA)		Results		Noise Limits (dBA)	
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Crane	49.4	41.4	N/A	N/A	N/A	N/A
Gradall	52.2	48.2	N/A	N/A	N/A	N/A
Gradall	52.2	48.2	N/A	N/A	N/A	N/A
Gradall	52.2	48.2	N/A	N/A	N/A	N/A
Generator	49.4	46.4	N/A	N/A	N/A	N/A
Backhoe	46.4	42.4	N/A	N/A	N/A	N/A
Front End Loader	47.9	43.9	N/A	N/A	N/A	N/A
Tractor	52.8	48.8	N/A	N/A	N/A	N/A
Welder / Torch	42.8	38.8	N/A	N/A	N/A	N/A
Total	53	56	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)	
		Daytime	Evening
Homes to West	Residential	48.4	48.4

Night
46.6

Description	Impact Device	Usage(%)	Equipment Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	677	5
Paver	No	50		77.2	677	5
Paver	No	50		77.2	677	5
Paver	No	50		77.2	677	5
Roller	No	20		80	677	5
Roller	No	20		80	677	5

Results

Equipment	Calculated (dBA)		Day	Noise Limits (dBA)		
	*Lmax	Leq		Evening	Lmax	Leq
Paver	49.6	46.6	N/A	N/A	N/A	N/A
Paver	49.6	46.6	N/A	N/A	N/A	N/A
Paver	49.6	46.6	N/A	N/A	N/A	N/A
Paver	49.6	46.6	N/A	N/A	N/A	N/A
Roller	52.4	45.4	N/A	N/A	N/A	N/A
Roller	52.4	45.4	N/A	N/A	N/A	N/A
Total	52	54	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Paving

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)			Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night				
Homes to North	Residential	66.5	66.5	62.3				
Description		Impact		Usage(%)				
		Device						
Paver		No		50		77.2	1020	5
Paver		No		50		77.2	1020	5
Paver		No		50		77.2	1020	5
Paver		No		50		77.2	1020	5
Roller		No		20		80	1020	5
Roller		No		20		80	1020	5

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Paver	46.0	43	N/A	N/A	N/A	N/A
Paver	46.0	43.0	N/A	N/A	N/A	N/A
Paver	46.0	43.0	N/A	N/A	N/A	N/A
Paver	46.0	43.0	N/A	N/A	N/A	N/A
Roller	48.8	41.8	N/A	N/A	N/A	N/A
Roller	48.8	41.8	N/A	N/A	N/A	N/A
Total	49	50	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 10/9/2023

Case Description: TTM No. 38625 - Painting

---- Receptor #1 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Homes to West	Residential	48.4	48.4	46.6			
					Equipment		
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	677	5
					Results		
		Calculated (dBA)			Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		50.0	46.1	N/A	N/A	N/A	N/A
Total		50	46	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

---- Receptor #2 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Homes to North	Residential	66.5	66.5	62.3			
		Equipment					
		Impact	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Description		Device					
Compressor (air)		No	40		77.7	1020	5
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		46.5	42.5	N/A	N/A	N/A	N/A
	Total	47	43	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

APPENDIX D

FHWA Model Offsite Traffic Noise Calculation Printouts

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Secondary)				Vehicle Mix 2 (Arterial)				Vehicle Mix 3 (With Haul trucks)			
	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	71.00%	13.60%	10.22%	94.04%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	3.73%	0.04%	0.35%	4.12%

Road Name: Menifee Road		Segment: North of McCall Boulevard		Vehicle Speed: 55 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 12500 Vehicles		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 108.52 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	72.73	-2.10	-5.15	-1.20	64.27	61.90	60.61	62.98	63.62
Medium Trucks	79.85	-16.97	-5.15	-1.20	56.53	37.33	29.54	38.75	44.91
Heavy Trucks	83.81	-14.75	-5.15	-1.20	62.71	45.72	37.94	47.15	53.30
Total:				66.98		62.02		60.63	
						55.37		63.49	
								70 dBA:	
								40	
								65 dBA:	
								87	
								60 dBA:	
								188	
								205	
								55 dBA:	
								405	
								442	

Road Name: Menifee Road		Segment: South of Simpson Road		Vehicle Speed: 50 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 13100 Vehicles		NOISE PARAMETERS AT 90 FEET FROM CENTERLINE		(Equiv. Lane Dist: 88.18 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	-1.48	-3.80	-1.20	64.64	62.26	60.97	63.35	63.98
Medium Trucks	78.79	-16.35	-3.80	-1.20	57.44	38.23	30.45	39.66	45.85
Heavy Trucks	83.02	-14.13	-3.80	-1.20	63.89	46.90	39.12	48.33	54.48
Total:				67.72		62.41		61.00	
						55.88		63.95	
								70 dBA:	
								36	
								65 dBA:	
								77	
								60 dBA:	
								165	
								180	
								55 dBA:	
								355	
								387	

Road Name: Menifee Road		Segment: South of Newport Road		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 14400 Vehicles		NOISE PARAMETERS AT 100 FEET FROM CENTERLINE		(Equiv. Lane Dist: 98.37 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	69.34	-0.62	-4.51	-1.20	63.02	60.65	59.35	61.73	62.36
Medium Trucks	77.62	-15.48	-4.51	-1.20	56.43	37.22	29.44	38.65	44.83
Heavy Trucks	82.14	-13.26	-4.51	-1.20	63.17	46.18	38.39	47.60	53.79
Total:				66.55		60.82		59.39	
						54.45		62.45	
								70 dBA:	
								31	
								65 dBA:	
								68	
								60 dBA:	
								146	
								158	
								55 dBA:	
								314	
								341	

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: TTM No. 38625
Site Conditions: Soft

Road Name: Briggs Road		Segment: North of McCall Boulevard		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Major	
Average Daily Traffic: 6350 Vehicles		NOISE PARAMETERS AT 90 FEET FROM CENTERLINE		(Equiv. Lane Dist: 86.74 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type		REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn CNEL
Automobiles		69.34	-4.17	-3.69	-1.20	60.28	57.91	56.62	58.99 59.62
Medium Trucks		77.62	-19.04	-3.69	-1.20	53.69	34.48	26.70	35.91 42.10
Heavy Trucks		82.14	-16.82	-3.69	-1.20	60.43	43.44	35.66	44.87 51.05
Total:						63.81	58.08	56.65	51.71 59.71 60.26

Road Name: Briggs Road		Segment: North of Simpson Road		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Major	
Average Daily Traffic: 4150 Vehicles		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 107.35 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type		REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn CNEL
Automobiles		69.34	-6.02	-5.08	-1.20	57.04	54.67	53.38	47.32 55.76 56.39
Medium Trucks		77.62	-20.89	-5.08	-1.20	50.46	31.25	23.47	32.67 38.83 38.86
Heavy Trucks		82.14	-18.67	-5.08	-1.20	57.19	40.20	32.42	41.63 47.78 47.82
Total:						60.57	54.84	53.42	48.48 56.47 57.02

Road Name: McCall Boulevard		Segment: West of Menifee Road		Vehicle Speed: 50 MPH		Vehicle Mix: 2		Roadway Classification: Urban Arterial	
Average Daily Traffic: 16700 Vehicles		NOISE PARAMETERS AT 75 FEET FROM CENTERLINE		(Equiv. Lane Dist: 64.06 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type		REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn CNEL
Automobiles		71.12	-0.43	-1.72	-1.20	67.77	65.40	64.11	58.05 66.48 67.11
Medium Trucks		78.79	-15.30	-1.72	-1.20	60.58	41.37	33.59	42.80 48.95 48.99
Heavy Trucks		83.02	-13.08	-1.72	-1.20	67.02	50.03	42.25	51.46 57.62 57.65
Total:						70.85	65.54	64.14	59.02 67.08 67.64

Road Name: McCall Boulevard		Segment: West of Briggs Road		Vehicle Speed: 50 MPH		Vehicle Mix: 2		Roadway Classification: Urban Arterial	
Average Daily Traffic: 5050 Vehicles		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 102.85 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type		REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn CNEL
Automobiles		71.12	-5.62	-4.80	-1.20	59.49	57.12	55.83	49.77 58.21 58.84
Medium Trucks		78.79	-20.49	-4.80	-1.20	52.30	33.09	25.31	34.52 40.67 40.71
Heavy Trucks		83.02	-18.27	-4.80	-1.20	58.75	41.76	33.97	43.18 49.34 49.37
Total:						62.57	57.26	55.86	50.74 58.80 59.36

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: TTM No. 38625
Site Conditions: Soft

Road Name: Simpson Road		Segment: East of Menifee Road		Vehicle Speed: 50 MPH		Vehicle Mix: 1		Roadway Classification: Secondary					
Average Daily Traffic: 8000 Vehicles		NOISE PARAMETERS AT 80 FEET FROM CENTERLINE				(Equiv. Lane Dist: 77.71 ft)							
		Noise Adjustments		Unmitigated Noise Levels									
		REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles		71.12	-3.38	-2.98	-1.20	63.57	61.44	60.13	54.12	62.54	63.16	70 dBA: 26	28
Medium Trucks		78.79	-20.62	-2.98	-1.20	54.00	32.75	38.77	20.48	33.62	36.38	65 dBA: 55	61
Heavy Trucks		83.02	-24.57	-2.98	-1.20	54.27	28.92	25.52	30.17	36.37	36.47	60 dBA: 118	130
		Total:			64.46	61.45	60.16	54.14	62.55	63.18	55 dBA: 255	281	

Road Name: Simpson Road		Segment: East of Lindenberger Road		Vehicle Speed: 50 MPH		Vehicle Mix: 1		Roadway Classification: Secondary					
Average Daily Traffic: 8500 Vehicles		NOISE PARAMETERS AT 70 FEET FROM CENTERLINE				(Equiv. Lane Dist: 67.37 ft)							
		Noise Adjustments		Unmitigated Noise Levels									
		REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles		71.12	-3.11	-2.05	-1.20	64.76	62.64	61.32	55.31	63.73	64.36	70 dBA: 27	30
Medium Trucks		78.79	-20.35	-2.05	-1.20	55.19	33.95	39.97	21.67	34.82	37.57	65 dBA: 58	64
Heavy Trucks		83.02	-24.31	-2.05	-1.20	55.47	30.11	26.71	31.36	37.56	37.66	60 dBA: 124	137
Total:						65.65	62.64	61.36	55.33	63.75	64.38	55 dBA: 268	295

Road Name: Simpson Road		Segment: East of Briggs Road		Vehicle Speed: 55 MPH		Vehicle Mix: 1		Roadway Classification: Secondary					
Average Daily Traffic: 8500 Vehicles		NOISE PARAMETERS AT 70 FEET FROM CENTERLINE				(Equiv. Lane Dist: 67.37 ft)							
		Noise Adjustments		Unmitigated Noise Levels									
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL				
Automobiles	72.73	-3.53	-2.05	-1.20	65.95	63.83	62.52	56.50	64.92	65.55	70 dBA:	32	35
Medium Trucks	79.85	-20.77	-2.05	-1.20	55.84	34.59	40.61	22.32	35.46	38.21	65 dBA:	69	76
Heavy Trucks	83.81	-24.72	-2.05	-1.20	55.85	30.50	27.10	31.74	37.94	38.04	60 dBA:	149	164
Total:				66.73		63.84	62.55	56.52	64.94	65.57	55 dBA:	322	354

Road Name: Simpson Road		Segment: East of Leon Road		Roadway Classification: Secondary									
Average Daily Traffic: 7800 Vehicles		Vehicle Speed: 55 MPH		Vehicle Mix: 1									
NOISE PARAMETERS AT 80 FEET FROM CENTERLINE		(Equiv. Lane Dist: 77.71 ft)		Centerline Distance to Noise Contour (in feet)									
Noise Adjustments		Unmitigated Noise Levels											
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL				
Automobiles	72.73	-3.90	-2.98	-1.20	64.65	62.53	61.21	55.20	63.62	64.25	70 dBA:	30	33
Medium Trucks	79.85	-21.14	-2.98	-1.20	54.54	33.29	39.31	21.02	34.16	36.91	65 dBA:	65	71
Heavy Trucks	83.81	-25.10	-2.98	-1.20	54.54	29.19	25.79	30.44	36.64	36.74	60 dBA:	140	154
Total:				65.42		62.53	61.24	55.22	63.63	64.26	55 dBA:	301	332

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Road Name:		Newport Road		Segment:		West of Menifee Road		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Urban Arterial			
Average Daily Traffic: 49900 Vehicles		NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)													
		Noise Adjustments				Unmitigated Noise Levels								Centerline Distance to Noise Contour (in feet)	
Vehicle Type		REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL					
Automobiles		69.34	4.78	-4.08	-1.20	68.84	66.47	65.18	59.12	67.56	68.19	70 dBA:	77	83	
Medium Trucks		77.62	-10.09	-4.08	-1.20	62.26	43.05	35.27	44.47	50.63	50.66	65 dBA:	165	180	
Heavy Trucks		82.14	-7.87	-4.08	-1.20	68.99	52.00	44.22	53.43	59.58	59.62	60 dBA:	356	387	
		Total:				72.37	66.64	65.22	60.28	68.27	68.82	55 dBA:	767	834	

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Secondary)				Vehicle Mix 2 (Arterial)				Vehicle Mix 3 (With Haul trucks)			
	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	71.00%	13.60%	10.22%	94.04%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	3.73%	0.04%	0.35%	4.12%

Road Name: Menifee Road		Segment: North of McCall Boulevard		Vehicle Speed: 55 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 12800 Vehicles		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 108.52 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	72.73	-2.00	-5.15	-1.20	64.38	62.00	60.71	63.09	63.72
Medium Trucks	79.85	-16.87	-5.15	-1.20	56.64	37.43	29.65	45.01	45.04
Heavy Trucks	83.81	-14.65	-5.15	-1.20	62.82	45.83	38.05	53.41	53.44
Total:				67.09		62.12	60.74	63.59	64.16

Road Name: Menifee Road		Segment: South of Simpson Road		Vehicle Speed: 50 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 14500 Vehicles		NOISE PARAMETERS AT 90 FEET FROM CENTERLINE		(Equiv. Lane Dist: 88.18 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	-1.04	-3.80	-1.20	65.08	62.71	61.41	63.79	64.42
Medium Trucks	78.79	-15.91	-3.80	-1.20	57.88	38.68	30.89	46.26	46.29
Heavy Trucks	83.02	-13.69	-3.80	-1.20	64.33	47.34	39.56	54.92	54.95
Total:				68.16		62.85	61.44	64.39	64.94

Road Name: Menifee Road		Segment: South of Newport Road		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 14750 Vehicles		NOISE PARAMETERS AT 100 FEET FROM CENTERLINE		(Equiv. Lane Dist: 98.37 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	69.34	-0.51	-4.51	-1.20	63.12	60.75	59.46	61.83	62.46
Medium Trucks	77.62	-15.38	-4.51	-1.20	56.53	37.32	29.54	44.91	44.94
Heavy Trucks	82.14	-13.16	-4.51	-1.20	63.27	46.28	38.50	53.86	53.90
Total:				66.65		60.92	59.50	62.55	63.10

FWHA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: TTM No. 38625
Site Conditions: Soft

Road Name: Briggs Road		Segment: North of McCall Boulevard		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Major	
Average Daily Traffic: 6650 Vehicles		NOISE PARAMETERS AT 90 FEET FROM CENTERLINE		(Equiv. Lane Dist: 86.74 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	69.34	-3.97	-3.69	-1.20	60.48	58.11	56.82	59.19	59.82
Medium Trucks	77.62	-18.84	-3.69	-1.20	53.89	34.68	26.90	36.11	42.26
Heavy Trucks	82.14	-16.62	-3.69	-1.20	60.63	43.64	35.86	45.07	51.22
Total:				64.01	58.28	56.85	51.91	59.91	60.46

Road Name: Briggs Road		Segment: North of Simpson Road		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Major	
Average Daily Traffic: 5250 Vehicles		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 107.35 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	69.34	-5.00	-5.08	-1.20	58.07	55.69	54.40	48.35	56.78
Medium Trucks	77.62	-19.86	-5.08	-1.20	51.48	32.27	24.49	33.70	39.85
Heavy Trucks	82.14	-17.65	-5.08	-1.20	58.21	41.22	33.44	42.65	48.81
Total:				61.60	55.87	54.44	49.50	57.50	58.04

Road Name: McCall Boulevard		Segment: West of Menifee Road		Vehicle Speed: 50 MPH		Vehicle Mix: 2		Roadway Classification: Urban Arterial	
Average Daily Traffic: 17150 Vehicles		NOISE PARAMETERS AT 75 FEET FROM CENTERLINE		(Equiv. Lane Dist: 64.06 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	-0.31	-1.72	-1.20	67.89	65.52	64.22	58.17	66.60
Medium Trucks	78.79	-15.18	-1.72	-1.20	60.69	41.49	33.70	42.91	49.07
Heavy Trucks	83.02	-12.96	-1.72	-1.20	67.14	50.15	42.37	51.58	57.73
Total:				70.97	65.66	64.25	59.13	67.20	67.76

Road Name: McCall Boulevard		Segment: West of Briggs Road		Vehicle Speed: 50 MPH		Vehicle Mix: 2		Roadway Classification: Urban Arterial	
Average Daily Traffic: 5800 Vehicles		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 102.85 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	-5.02	-4.80	-1.20	60.09	57.72	56.43	50.38	58.81
Medium Trucks	78.79	-19.89	-4.80	-1.20	52.90	33.69	25.91	35.12	41.27
Heavy Trucks	83.02	-17.67	-4.80	-1.20	59.35	42.36	34.58	43.78	49.94
Total:				63.18	57.86	56.46	51.34	59.40	59.96

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Road Name: Simpson Road		Segment: East of Menifee Road		Vehicle Speed: 50 MPH		Vehicle Mix: 1		Roadway Classification: Secondary	
Average Daily Traffic: 9400 Vehicles		NOISE PARAMETERS AT 80 FEET FROM CENTERLINE		(Equiv. Lane Dist: 77.71 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	-2.68	-1.20	64.27	62.14	60.83	54.82	63.24	63.87
Medium Trucks	78.79	-19.92	-1.20	54.70	33.45	39.47	21.18	34.32	37.08
Heavy Trucks	83.02	-23.87	-1.20	54.97	29.62	26.22	30.87	37.07	37.17
Total:				65.16	62.15	60.86	54.84	63.25	63.88

Road Name: Simpson Road		Segment: East of Lindenberger Road		Vehicle Speed: 50 MPH		Vehicle Mix: 1		Roadway Classification: Secondary	
Average Daily Traffic: 9900 Vehicles		NOISE PARAMETERS AT 70 FEET FROM CENTERLINE		(Equiv. Lane Dist: 67.37 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	-2.45	-1.20	65.42	63.30	61.99	55.97	64.39	65.02
Medium Trucks	78.79	-19.69	-1.20	55.86	34.61	40.63	22.34	35.48	38.23
Heavy Trucks	83.02	-23.65	-1.20	56.13	30.78	27.38	32.03	38.23	38.32
Total:				66.31	63.31	62.02	55.99	64.41	65.04

Road Name: Simpson Road		Segment: East of Briggs Road		Vehicle Speed: 55 MPH		Vehicle Mix: 1		Roadway Classification: Secondary	
Average Daily Traffic: 9100 Vehicles		NOISE PARAMETERS AT 70 FEET FROM CENTERLINE		(Equiv. Lane Dist: 67.37 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	72.73	-3.23	-1.20	66.25	64.12	62.81	56.80	65.22	65.85
Medium Trucks	79.85	-20.47	-1.20	56.14	34.89	40.91	22.61	35.76	38.51
Heavy Trucks	83.81	-24.43	-1.20	56.14	30.79	27.39	32.04	38.24	38.34
Total:				67.02	64.13	62.84	56.82	65.23	65.86

Road Name: Simpson Road		Segment: East of Leon Road		Vehicle Speed: 55 MPH		Vehicle Mix: 1		Roadway Classification: Secondary	
Average Daily Traffic: 8250 Vehicles		NOISE PARAMETERS AT 80 FEET FROM CENTERLINE		(Equiv. Lane Dist: 77.71 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	72.73	-3.66	-1.20	64.89	62.77	61.46	55.44	63.86	64.49
Medium Trucks	79.85	-20.90	-1.20	54.78	33.53	39.55	21.26	34.40	37.16
Heavy Trucks	83.81	-24.85	-1.20	54.79	29.44	26.04	30.68	36.88	36.98
Total:				65.67	62.78	61.49	55.46	63.88	64.51

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Road Name: Newport Road		Segment: West of Menifee Road		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Urban Arterial	
Average Daily Traffic: 51000 Vehicles		NOISE PARAMETERS AT 100 FEET FROM CENTERLINE		(Equiv. Lane Dist: 92.08 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	69.34	4.88	-4.08	-1.20	68.94	66.57	59.22	67.65	68.28
Medium Trucks	77.62	-9.99	-4.08	-1.20	62.35	43.14	35.36	50.72	50.76
Heavy Trucks	82.14	-7.77	-4.08	-1.20	69.09	52.10	44.32	59.68	59.71
Total:				72.47	66.74	65.31	60.37	68.37	68.91

Road Name: Simpson Road (Haul Trucks)		Segment: East of Lindenberger Road		Vehicle Speed: 50 MPH		Vehicle Mix: 1		Roadway Classification: Secondary	
Average Daily Traffic: 8787 Vehicles		NOISE PARAMETERS AT 70 FEET FROM CENTERLINE		(Equiv. Lane Dist: 67.37 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	-2.97	-2.05	-1.20	64.90	62.78	61.47	63.88	64.50
Medium Trucks	78.79	-20.21	-2.05	-1.20	55.34	34.09	40.11	34.96	37.71
Heavy Trucks	83.02	-24.16	-2.05	-1.20	55.61	30.26	26.86	37.71	37.80
Total:				65.80	62.79	61.50	55.48	63.89	64.52

Road Name: Simpson Road (Haul Trucks)		Segment: East of Briggs Road		Vehicle Speed: 55 MPH		Vehicle Mix: 1		Roadway Classification: Secondary	
Average Daily Traffic: 8787 Vehicles		NOISE PARAMETERS AT 70 FEET FROM CENTERLINE		(Equiv. Lane Dist: 67.37 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Unmitigated Noise Levels					
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	72.73	-3.38	-2.05	-1.20	66.10	63.97	62.66	65.07	65.69
Medium Trucks	79.85	-20.62	-2.05	-1.20	55.98	34.74	40.76	35.61	38.36
Heavy Trucks	83.81	-24.58	-2.05	-1.20	55.99	30.64	27.24	31.89	38.18
Total:				66.87	63.98	62.69	56.66	65.08	65.71

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2029 WITHOUT PROJECT CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Secondary)			Vehicle Mix 2 (Arterial)			Vehicle Mix 3 (With Haul trucks)		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Automobiles	73.60%	13.60%	10.22%	69.50%	12.90%	9.60%	71.00%	13.60%	10.22%
Medium Trucks	0.90%	0.90%	0.04%	1.44%	0.06%	1.50%	0.90%	0.90%	0.04%
Heavy Trucks	0.35%	0.04%	0.35%	2.40%	0.10%	2.50%	3.73%	0.04%	0.35%
			0.74%			5.00%			4.12%

Road Name: Menifee Road		Segment: North of McCall Boulevard		Roadway Classification: Arterial	
Average Daily Traffic: 24200 Vehicles		Vehicle Speed: 55 MPH		Vehicle Mix: 2	
NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 108.52 ft)		Centerline Distance to Noise Contour (in feet)	
Noise Adjustments		Unmitigated Noise Levels			
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day
Automobiles	72.73	0.77	-5.15	-1.20	67.14
Medium Trucks	79.85	-14.10	-5.15	-1.20	59.40
Heavy Trucks	83.81	-11.88	-5.15	-1.20	65.58
					48.59
					40.81
					50.02
					58.24
					63.50
					66.36
					66.93
					70 dBA: 63
					65 dBA: 136
					60 dBA: 292
					55 dBA: 629
					686

Road Name: Menifee Road		Segment: South of Simpson Road		Roadway Classification: Arterial	
Average Daily Traffic: 17850 Vehicles		Vehicle Speed: 50 MPH		Vehicle Mix: 2	
NOISE PARAMETERS AT 90 FEET FROM CENTERLINE		(Equiv. Lane Dist: 88.18 ft)		Centerline Distance to Noise Contour (in feet)	
Noise Adjustments		Unmitigated Noise Levels			
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day
Automobiles	71.12	-0.14	-3.80	-1.20	65.98
Medium Trucks	78.79	-15.01	-3.80	-1.20	58.79
Heavy Trucks	83.02	-12.79	-3.80	-1.20	65.23
					48.24
					40.46
					49.67
					55.82
					55.86
					65.85
					70 dBA: 44
					65 dBA: 94
					60 dBA: 203
					55 dBA: 437
					476

Road Name: Menifee Road		Segment: South of Newport Road		Roadway Classification: Arterial	
Average Daily Traffic: 26200 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2	
NOISE PARAMETERS AT 100 FEET FROM CENTERLINE		(Equiv. Lane Dist: 98.37 ft)		Centerline Distance to Noise Contour (in feet)	
Noise Adjustments		Unmitigated Noise Levels			
Vehicle Type	REME Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day
Automobiles	69.34	1.98	-4.51	-1.20	65.62
Medium Trucks	77.62	-12.88	-4.51	-1.20	59.03
Heavy Trucks	82.14	-10.66	-4.51	-1.20	65.77
					48.78
					40.99
					50.20
					57.05
					61.99
					63.42
					65.05
					65.59
					70 dBA: 47
					65 dBA: 101
					60 dBA: 217
					55 dBA: 467
					508

Scenario: OPENING YEAR 2029 WITHOUT PROJECT CONDITIONS

Road Name: Briggs Road		Segment: North of McCall Boulevard		Roadway Classification: Major											
Average Daily Traffic: 7150 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2											
NOISE PARAMETERS AT 90 FEET FROM CENTERLINE		(Equiv. Lane Dist: 86.74 ft)		Centerline Distance to Noise Contour (in feet)											
Noise Adjustments		Unmitigated Noise Levels													
Vehicle Type	REML Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL						
Automobiles	69.34	-3.66	-3.69	-1.20	60.80	58.42	57.13	51.08	59.51	60.14	70 dBA: 20				
Medium Trucks	77.62	-18.52	-3.69	-1.20	54.21	35.00	27.22	36.43	42.58	42.61	65 dBA: 43				
Heavy Trucks	82.14	-16.30	-3.69	-1.20	60.94	43.96	36.17	45.38	51.54	51.57	60 dBA: 93				
Total:				64.33	58.60	57.17	52.23	60.23	60.77	55 dBA: 201	218				

Road Name: Briggs Road		Segment: North of Simpson Road		Roadway Classification: Major									
Average Daily Traffic: 20000 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2									
NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 107.35 ft)		Centerline Distance to Noise Contour (in feet)									
Noise Adjustments		Unmitigated Noise Levels											
Vehicle Type	REML Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL				
Automobiles	69.34	0.81	-5.08	-1.20	63.87	61.50	60.21	54.15	62.59	63.22	70 dBA:	39	43
Medium Trucks	77.62	-14.06	-5.08	-1.20	57.29	38.08	30.30	39.50	45.66	45.69	65 dBA:	85	92
Heavy Trucks	82.14	-11.84	-5.08	-1.20	64.02	47.03	39.25	48.46	54.61	54.65	60 dBA:	183	199
Total:		67.40	61.67	60.25	55.31	63.30	63.85	55 dBA:	394	428			

Road Name: McCall Boulevard		Segment: West of Menifee Road		Roadway Classification: Urban Arterial									
Average Daily Traffic: 26900 Vehicles	Vehicle Speed: 50 MPH	Vehicle Mix: 2	Centerline Distance to Noise Contour (in feet)										
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE			(Equiv. Lane Dist: 64.06 ft)										
Noise Adjustments			Unmitigated Noise Levels										
Vehicle Type	REML Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL				
Automobiles	71.12	1.64	-1.72	-1.20	69.84	67.47	66.18	60.12	68.55	69.19	70 dBA:	66	72
Medium Trucks	78.79	-13.23	-1.72	-1.20	62.65	43.44	35.66	44.87	51.02	51.06	65 dBA:	142	155
Heavy Trucks	83.02	-11.01	-1.72	-1.20	69.09	52.10	44.32	53.53	59.69	59.72	60 dBA:	306	333
Total:					72.92	67.61	66.21	61.09	69.15	69.71	55 dBA:	658	717

Road Name: McCall Boulevard		Segment: West of Briggs Road				Roadway Classification: Urban Arterial						
Average Daily Traffic: 21650 Vehicles		Vehicle Speed: 50 MPH		Vehicle Mix: 2								
		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE				(Equiv. Lane Dist: 102.85 ft)						
		Noise Adjustments			Unmitigated Noise Levels							
Vehicle Type		REMEL Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)	
Automobiles		71.12	0.70	-4.80	-1.20	65.82	63.44	62.15	56.10	64.53	65.16	70 dBA: 52
Medium Trucks		78.79	-14.17	-4.80	-1.20	58.62	39.41	31.63	40.84	46.99	47.03	65 dBA: 112
Heavy Trucks		83.02	-11.95	-4.80	-1.20	65.07	48.08	40.30	49.50	55.66	55.69	60 dBA: 242
		Total:				68.90	63.58	62.18	57.06	65.12	65.68	55 dBA: 520
												567

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2029 WITHOUT PROJECT CONDITIONS

Project: TTM No. 38625
Site Conditions: Soft

Road Name: Simpson Road		Segment: East of Menifee Road		Vehicle Speed: 50 MPH		Vehicle Mix: 1		Roadway Classification: Secondary				
Average Daily Traffic: 9950 Vehicles		NOISE PARAMETERS AT 80 FEET FROM CENTERLINE				(Equiv. Lane Dist: 77.71 ft)		Centerline Distance to Noise Contour (in feet)				
		Noise Adjustments		Unmitigated Noise Levels								
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	71.12	-2.43	-2.98	-1.20	64.51	62.39	61.08	55.07	63.49	64.11	70 dBA: 30	32
Medium Trucks	78.79	-19.67	-2.98	-1.20	54.95	33.70	39.72	21.43	34.57	37.32	65 dBA: 64	70
Heavy Trucks	83.02	-23.62	-2.98	-1.20	55.22	29.87	26.47	31.12	37.32	37.41	60 dBA: 137	151
Total:				65.41		62.40	61.11	55.08	63.50	64.13	55 dBA: 295	325

Scenario: OPENING YEAR 2029 WITHOUT PROJECT CONDITIONS

Road Name:	Newport Road	Segment:	West of Menifee Road
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Segment:

Road Name: Newport Road

Average Daily Traffic: 69550 Vehicles

Vehicle Sp

: 45 MPH

Vehicle Mix: 2

Vehicle Mix: 2

Roadv

Roadway Classification: Urban Arterial

		NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)										Centerline Distance to Noise Contour (in feet)	
		Noise Adjustments				Unmitigated Noise Levels							
Vehicle Type	REME L	Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Ldn	CNEL	
Automobiles	69.34	6.22	-4.08	-1.20	70.29	67.91	66.62	60.57	69.00	69.63	96	104	
Medium Trucks	77.62	-8.64	-4.08	-1.20	63.70	44.49	36.71	45.92	52.07	52.10	206	224	
Heavy Trucks	82.14	-6.42	-4.08	-1.20	70.44	53.45	45.66	54.87	61.03	61.06	444	483	
		Total:				73.82	68.09	66.66	61.72	69.72	70.26	957	1041

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2029 WITH PROJECT CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Vehicle Type	Vehicle Mix 1 (Secondary)				Vehicle Mix 2 (Arterial)				Vehicle Mix 3 (With Haul trucks)			
	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evening	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	69.50%	12.90%	9.60%	92.00%	71.00%	13.60%	10.22%	94.04%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.44%	0.06%	1.50%	3.00%	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	2.40%	0.10%	2.50%	5.00%	3.73%	0.04%	0.35%	4.12%

Road Name: Menifee Road		Segment: North of McCall Boulevard		Vehicle Speed: 55 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 24500 Vehicles		NOISE PARAMETERS AT 110 FEET FROM CENTERLINE		(Equiv. Lane Dist: 108.52 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Finite Adj.		Unmitigated Noise Levels			
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	72.73	0.82	-5.15	-1.20	67.20	64.82	63.53	65.91	66.54
Medium Trucks	79.85	-14.05	-5.15	-1.20	59.46	40.25	32.47	47.83	47.86
Heavy Trucks	83.81	-11.83	-5.15	-1.20	65.64	48.65	40.86	56.23	56.26
Total:				69.91	64.94	63.56	58.30	66.41	66.98

Road Name: Menifee Road		Segment: South of Simpson Road		Vehicle Speed: 50 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 19250 Vehicles		NOISE PARAMETERS AT 90 FEET FROM CENTERLINE		(Equiv. Lane Dist: 88.18 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Finite Adj.		Unmitigated Noise Levels			
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	71.12	0.19	-3.80	-1.20	66.31	63.94	62.64	65.02	65.65
Medium Trucks	78.79	-14.68	-3.80	-1.20	59.11	39.91	32.12	47.49	47.52
Heavy Trucks	83.02	-12.46	-3.80	-1.20	65.56	48.57	40.79	56.15	56.18
Total:				69.39	64.08	62.67	57.55	65.62	66.18

Road Name: Menifee Road		Segment: South of Newport Road		Vehicle Speed: 45 MPH		Vehicle Mix: 2		Roadway Classification: Arterial	
Average Daily Traffic: 26500 Vehicles		NOISE PARAMETERS AT 100 FEET FROM CENTERLINE		(Equiv. Lane Dist: 98.37 ft)		Centerline Distance to Noise Contour (in feet)			
		Noise Adjustments		Finite Adj.		Unmitigated Noise Levels			
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL
Automobiles	69.34	2.03	-4.51	-1.20	65.67	63.29	62.00	64.38	65.01
Medium Trucks	77.62	-12.83	-4.51	-1.20	59.08	39.87	32.09	47.45	47.48
Heavy Trucks	82.14	-10.62	-4.51	-1.20	65.81	48.83	41.04	56.41	56.44
Total:				69.20	63.47	62.04	57.10	65.10	65.64

FWHA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2029 WITH PROJECT CONDITIONS

Project: TTM No. 38625
Site Conditions: Soft

Road Name: Briggs Road		Segment: North of McCall Boulevard		Roadway Classification: Major								
Average Daily Traffic: 7450 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 90 FEET FROM CENTERLINE (Equiv. Lane Dist: 86.74 ft)												
Noise Adjustments		Unmitigated Noise Levels										
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)		
Automobiles	69.34	-3.48	-3.69	-1.20	60.97	58.60	57.31	51.25	59.69	60.32	70 dBA: 21	22
Medium Trucks	77.62	-18.34	-3.69	-1.20	54.39	35.18	27.40	36.60	42.76	42.79	65 dBA: 44	48
Heavy Trucks	82.14	-16.13	-3.69	-1.20	61.12	44.13	36.35	45.56	51.71	51.75	60 dBA: 96	104
Total:				64.50	58.77	57.35	52.41	60.40	60.95	55 dBA: 206	224	

Road Name: Briggs Road		Segment: North of Simpson Road		Roadway Classification: Major								
Average Daily Traffic: 21100 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 110 FEET FROM CENTERLINE (Equiv. Lane Dist: 107.35 ft)												
Noise Adjustments		Unmitigated Noise Levels										
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)		
Automobiles	69.34	1.04	-5.08	-1.20	64.11	61.74	60.44	54.39	62.82	63.45	70 dBA: 41	44
Medium Trucks	77.62	-13.82	-5.08	-1.20	57.52	38.31	30.53	39.74	45.89	45.92	65 dBA: 88	96
Heavy Trucks	82.14	-11.60	-5.08	-1.20	64.26	47.27	39.48	48.69	54.85	54.88	60 dBA: 189	206
Total:				67.64	61.91	60.48	55.54	63.54	64.08	55 dBA: 408	443	

Road Name: McCall Boulevard			Segment: West of Menifee Road			Roadway Classification: Urban Arterial						
Average Daily Traffic: 27350 Vehicles			Vehicle Speed: 50 MPH			Vehicle Mix: 2						
NOISE PARAMETERS AT 75 FEET FROM CENTERLINE (Equiv. Lane Dist: 64.06 ft)												
Noise Adjustments			Unmitigated Noise Levels									
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)		
Automobiles	71.12	1.71	-1.72	-1.20	69.91	67.54	66.25	60.19	68.63	69.26	70 dBA: 67	73
Medium Trucks	78.79	-13.15	-1.72	-1.20	62.72	43.51	35.73	44.94	51.09	51.13	65 dBA: 143	156
Heavy Trucks	83.02	-10.94	-1.72	-1.20	69.17	52.18	44.40	53.60	59.76	59.79	60 dBA: 309	337
Total:				73.00	67.68	66.28	61.16	69.22	69.78	55 dBA: 666	725	

Road Name: McCall Boulevard		Segment: West of Briggs Road				Roadway Classification: Urban Arterial						
Average Daily Traffic: 22450 Vehicles		Vehicle Speed: 50 MPH		Vehicle Mix: 2								
NOISE PARAMETERS AT 110 FEET FROM CENTERLINE (Equiv. Lane Dist: 102.85 ft)												
		Noise Adjustments		Unmitigated Noise Levels				Centerline Distance to Noise Contour (in feet)				
Vehicle Type	REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL			
Automobiles	71.12	0.85	-4.80	-1.20	65.97	63.60	62.31	56.25	64.68	65.32	70 dBA: 53	58
Medium Trucks	78.79	-14.01	-4.80	-1.20	58.78	39.57	31.79	41.00	47.15	47.19	65 dBA: 115	125
Heavy Trucks	83.02	-11.79	-4.80	-1.20	65.22	48.24	40.45	49.66	55.82	55.85	60 dBA: 247	270
Total:				69.05	63.74	62.34	57.22	65.28	65.84	55 dBA: 533	581	

Project: TTM No. 38625
Site Conditions: Soft

Road Name: Simpson Road		Segment: East of Lindenberger Road										
Average Daily Traffic: 1900 Vehicles	Vehicle Speed: 50 MPH	Vehicle Mix: 1	Roadway Classification: Secondary									
NOISE PARAMETERS AT 70 FEET FROM CENTERLINE		(Equiv. Lane Dist: 67.37 ft)										
Noise Adjustments		Unmitigated Noise Levels										
Vehicle Type	REME L Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Centerline Distance to Noise Contour (in feet)		
Automobiles	71.12	-1.65	-2.05	-1.20	66.22	64.10	62.79	56.77	65.19	65.82	70 dBA: 34	37
Medium Trucks	78.79	-18.89	-2.05	-1.20	56.66	35.41	41.43	23.13	36.28	39.03	65 dBA: 72	80
Heavy Trucks	83.02	-22.85	-2.05	-1.20	56.93	31.58	28.18	32.83	39.02	39.12	60 dBA: 156	172
Total:					67.11	64.11	62.82	56.79	65.21	65.84	55 dBA: 335	369

Road Name: Simpson Road		Segment: East of Leon Road			Roadway Classification: Secondary							
Average Daily Traffic: 25550 Vehicles		Vehicle Speed: 55 MPH		Vehicle Mix: 1								
		NOISE PARAMETERS AT 80 FEET FROM CENTERLINE					(Equiv. Lane Dist: 77.71 ft)					
		Noise Adjustments			Unmitigated Noise Levels							
Vehicle Type		REME L Traffic Adj.	Dist Adj.	Finite Adj	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL		
Automobiles		72.73	1.25	-2.98	-1.20	69.80	67.68	66.37	60.35	68.77	69.40	70 dBA: 66 73
Medium Trucks		79.85	-15.99	-2.98	-1.20	59.69	38.44	44.46	26.17	39.31	42.06	65 dBA: 143 158
Heavy Trucks		83.81	-19.94	-2.98	-1.20	59.70	34.34	30.95	35.59	41.79	41.89	60 dBA: 308 339
		Total:				70.58	67.69	66.39	60.37	68.79	69.42	55 dBA: 664 731

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Scenario: OPENING YEAR 2029 WITH PROJECT CONDITIONS

Project: TTM No. 38625

Site Conditions: Soft

Road Name:		Newport Road		Segment:		West of Menifee Road		Roadway Classification: Urban Arterial				
Average Daily Traffic:		70650 Vehicles		Vehicle Speed: 45 MPH		Vehicle Mix: 2						
NOISE PARAMETERS AT 100 FEET FROM CENTERLINE (Equiv. Lane Dist: 92.08 ft)												
		Noise Adjustments			Unmitigated Noise Levels					Centerline Distance to Noise Contour (in feet)		
Vehicle Type		REMEL Traffic Adj.	Dist Adj.	Finite Adj.	Leq Peak	Leq Day	Leq Eve.	Leq Night	Ldn	CNEL	Ldn	CNEL
Automobiles		69.34	6.29	-4.08	-1.20	70.35	67.98	66.69	60.63	69.07	69.70	70 dBA: 97 105
Medium Trucks		77.62	-8.58	-4.08	-1.20	63.77	44.56	36.78	45.98	52.14	52.17	65 dBA: 208 227
Heavy Trucks		82.14	-6.36	-4.08	-1.20	70.50	53.51	45.73	54.94	61.09	61.13	60 dBA: 449 488
		Total:				73.88	68.15	66.73	61.79	69.78	70.33	55 dBA: 967 1052

APPENDIX E

FHWA Model Onsite Traffic Noise Calculation Printouts

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Simpson Road
Lot Number: 3

Project Name: TTM No. 38625
Job Number: 23020

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	11,800 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	1,180 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	55 mph	Medium Trucks:	0.9%	0.9%	0.0%	1.8%
Near/Far Lane Distance:	106 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	6 feet	Barrier Base Elevation: 1,451.3 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,450.0 feet				
Site Conditions(Hard/Soft):	Soft	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos:		0 feet		
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks:		2.3 feet		
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks:		8 feet		
C.L. Dist. To Observer (Structure):	70 feet	Pad Elevation: 1,451.3 feet				
Barrier Dist. To Observer (Structure):	20 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.00 %	Exterior:		5 feet		
Left View:	-90 degrees	First Floor:		5.5 feet		
Right View:	90 degrees	Second Floor:		14 feet		

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	72.73	-2.10	3.49	-1.20	0.00	-8.4	-8	-0.22
Med Trucks:	79.85	-19.34	3.49	-1.20	0.00	-8.05	-7.29	-0.128
Hvy Trucks:	83.81	-23.30	3.49	-1.20	0.00	-5.7	-4.9	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	70.7	69.3	63.3	71.7	72.4
Med Trucks:	62.8	41.5	47.6	29.3	42.4	45.2
Hvy Trucks:	62.8	37.5	34.1	38.7	44.9	45.0
Traffic Noise:	73.6	70.7	69.4	63.3	71.8	72.4

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	62.4	61.1	55.1	63.5	64.1
Med Trucks:	54.7	33.5	39.5	21.2	34.4	37.1
Hvy Trucks:	57.1	31.8	28.4	33.0	39.2	39.3
Traffic Noise:	65.6	62.4	61.1	55.1	63.5	64.1

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	59.7	58.4	52.4	60.8	61.4
Med Trucks:	52.4	31.2	37.2	18.9	32.1	34.8
Hvy Trucks:	54.8	29.5	26.1	30.7	36.9	37.0
Traffic Noise:	63.0	59.7	58.4	52.4	60.8	61.5

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	67.2	65.9	59.9	68.3	68.9
Med Trucks:	59.3	38.0	44.1	25.8	38.9	41.7
Hvy Trucks:	59.4	34.1	30.7	35.3	41.5	41.6
Traffic Noise:	70.1	67.2	65.9	59.9	68.3	68.9

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Simpson Road
Lot Number: 9

Project Name: TTM No. 38625
Job Number: 23020

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	11,800 vehicles		Day	Evening	Night	Daily
Peak Hour Volume:	1,180 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	55 mph	Medium Trucks:	0.9%	0.9%	0.0%	1.8%
Near/Far Lane Distance:	106 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	6 feet	Barrier Base Elevation: 1,453.0 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,449.5 feet				
Site Conditions(Hard/Soft):	Soft	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos:		0 feet		
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks:		2.3 feet		
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks:		8 feet		
C.L. Dist. To Observer (Structure):	70 feet	Pad Elevation: 1,453.0 feet				
Barrier Dist. To Observer (Structure):	20 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.00 %	Exterior:		5 feet		
Left View:	-90 degrees	First Floor:		5.5 feet		
Right View:	90 degrees	Second Floor:		14 feet		

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	72.73	-2.10	3.36	-1.20	0.00	-9.21	-9.09	-0.4
Med Trucks:	79.85	-19.34	3.36	-1.20	0.00	-9.03	-8.5	-0.173
Hvy Trucks:	83.81	-23.30	3.36	-1.20	0.00	-6.56	-5.5	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	70.5	69.2	63.2	71.6	72.2
Med Trucks:	62.7	41.4	47.4	29.1	42.3	45.0
Hvy Trucks:	62.7	37.3	33.9	38.6	44.8	44.9
Traffic Noise:	73.4	70.5	69.2	63.2	71.6	72.2

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	61.4	60.1	54.1	62.5	63.2
Med Trucks:	53.6	32.4	38.4	20.1	33.3	36.0
Hvy Trucks:	56.1	30.8	27.4	32.0	38.2	38.3
Traffic Noise:	64.6	61.5	60.2	54.2	62.6	63.2

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	58.6	57.3	51.2	59.7	60.3
Med Trucks:	51.2	29.9	35.9	17.6	30.8	33.5
Hvy Trucks:	54.2	28.8	25.4	30.1	36.3	36.4
Traffic Noise:	61.9	58.6	57.3	51.3	59.7	60.3

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	66.9	65.6	59.6	68.0	68.6
Med Trucks:	59.1	37.9	43.9	25.6	38.8	41.5
Hvy Trucks:	59.3	34.0	30.6	35.2	41.4	41.5
Traffic Noise:	69.9	66.9	65.6	59.6	68.0	68.6

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Simpson Road
Lot Number: 14

Project Name: TTM No. 38625
Job Number: 23020

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	11,800 vehicles		Day	Evening	Night	Daily
Peak Hour Volume:	1,180 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	55 mph	Medium Trucks:	0.9%	0.9%	0.0%	1.8%
Near/Far Lane Distance:	106 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	6 feet	Barrier Base Elevation: 1,452.5 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,448.5 feet				
Site Conditions(Hard/Soft):	Soft	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos:		0 feet		
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks:		2.3 feet		
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks:		8 feet		
C.L. Dist. To Observer (Structure):	70 feet	Pad Elevation: 1,452.5 feet				
Barrier Dist. To Observer (Structure):	20 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.00 %	Exterior:		5 feet		
Left View:	-90 degrees	First Floor:		5.5 feet		
Right View:	90 degrees	Second Floor:		14 feet		

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	72.73	-2.10	3.33	-1.20	0.00	-9.38	-9.27	-0.4
Med Trucks:	79.85	-19.34	3.33	-1.20	0.00	-9.18	-8.8	-0.182
Hvy Trucks:	83.81	-23.30	3.33	-1.20	0.00	-6.8	-5.7	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	70.5	69.1	63.1	71.6	72.2
Med Trucks:	62.6	41.4	47.4	29.1	42.3	45.0
Hvy Trucks:	62.6	37.3	33.9	38.5	44.7	44.8
Traffic Noise:	73.4	70.5	69.2	63.1	71.6	72.2

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	61.2	59.9	53.9	62.3	63.0
Med Trucks:	53.5	32.2	38.2	19.9	33.1	35.8
Hvy Trucks:	55.8	30.5	27.1	31.7	37.9	38.0
Traffic Noise:	64.4	61.3	60.0	53.9	62.4	63.0

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	58.4	57.1	51.0	59.5	60.1
Med Trucks:	50.9	29.6	35.6	17.3	30.5	33.2
Hvy Trucks:	54.0	28.6	25.2	29.9	36.1	36.2
Traffic Noise:	61.7	58.4	57.1	51.1	59.5	60.1

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	66.9	65.6	59.6	68.0	68.6
Med Trucks:	59.1	37.9	43.9	25.6	38.7	41.5
Hvy Trucks:	59.3	34.0	30.6	35.2	41.4	41.5
Traffic Noise:	69.8	66.9	65.6	59.6	68.0	68.6

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Simpson Road
Lot Number: 20

Project Name: TTM No. 38625
Job Number: 23020

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	11,800 vehicles		Day	Evening	Night	Daily
Peak Hour Volume:	1,180 vehicles	Autos:	73.6%	13.6%	10.2%	97.4%
Vehicle Speed:	55 mph	Medium Trucks:	0.9%	0.9%	0.0%	1.8%
Near/Far Lane Distance:	106 feet	Heavy Trucks:	0.4%	0.0%	0.4%	0.7%
Site Data		Elevations				
Barrier Height:	6 feet	Barrier Base Elevation: 1,451.1 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,447.5 feet				
Site Conditions(Hard/Soft):	Soft	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	50 feet	Autos:		0 feet		
C.L. Dist. To Observer (Backyard):	60 feet	Med Trucks:		2.3 feet		
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks:		8 feet		
C.L. Dist. To Observer (Structure):	70 feet	Pad Elevation: 1,451.1 feet				
Barrier Dist. To Observer (Structure):	20 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.00 %	Exterior:		5 feet		
Left View:	-90 degrees	First Floor:		5.5 feet		
Right View:	90 degrees	Second Floor:		14 feet		

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	72.73	-2.10	3.35	-1.20	0.00	-9.24	-9.12	-0.4
Med Trucks:	79.85	-19.34	3.35	-1.20	0.00	-9.06	-8.55	-0.175
Hvy Trucks:	83.81	-23.30	3.35	-1.20	0.00	-6.64	-5.5	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	70.5	69.2	63.2	71.6	72.2
Med Trucks:	62.7	41.4	47.4	29.1	42.3	45.0
Hvy Trucks:	62.7	37.3	33.9	38.6	44.8	44.9
Traffic Noise:	73.4	70.5	69.2	63.2	71.6	72.2

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	61.4	60.1	54.1	62.5	63.1
Med Trucks:	53.6	32.4	38.4	20.1	33.2	36.0
Hvy Trucks:	56.0	30.7	27.3	31.9	38.1	38.2
Traffic Noise:	64.6	61.4	60.1	54.1	62.5	63.2

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	58.5	57.2	51.2	59.6	60.3
Med Trucks:	51.1	29.9	35.9	17.6	30.7	33.5
Hvy Trucks:	54.2	28.8	25.4	30.1	36.3	36.4
Traffic Noise:	61.9	58.5	57.3	51.2	59.7	60.3

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	66.9	65.6	59.6	68.0	68.6
Med Trucks:	59.1	37.9	43.9	25.6	38.8	41.5
Hvy Trucks:	59.3	34.0	30.6	35.2	41.4	41.5
Traffic Noise:	69.9	66.9	65.6	59.6	68.0	68.6

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Briggs Road
Lot Number: 23

Project Name: TTM No. 38625
Job Number: 23020

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	2,350 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	235 vehicles	Autos:	69.5%	12.9%	9.6%	92.0%
Vehicle Speed:	45 mph	Medium Trucks:	1.4%	0.1%	1.5%	3.0%
Near/Far Lane Distance:	48 feet	Heavy Trucks:	2.4%	0.1%	2.5%	5.0%
Site Data		Elevations				
Barrier Height:	6 feet	Barrier Base Elevation: 1,450.5 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,445.5 feet				
Site Conditions(Hard/Soft):	Soft	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	38 feet	Autos:		0 feet		
C.L. Dist. To Observer (Backyard):	48 feet	Med Trucks:		2.3 feet		
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks:		8 feet		
C.L. Dist. To Observer (Structure):	58 feet	Pad Elevation: 1,450.5 feet				
Barrier Dist. To Observer (Structure):	20 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.00 %	Exterior:		5 feet		
Left View:	-90 degrees	First Floor:		5.5 feet		
Right View:	90 degrees	Second Floor:		14 feet		

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	69.34	-8.49	0.92	-1.20	0.00	-10.56	-10.72	-1.4
Med Trucks:	77.62	-23.36	0.92	-1.20	0.00	-10.38	-10.34	-0.45
Hvy Trucks:	82.14	-21.14	0.92	-1.20	0.00	-7.55	-6.56	-0.12

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	57.9	56.6	50.6	59.0	59.7
Med Trucks:	53.8	34.6	26.9	36.1	42.2	42.3
Hvy Trucks:	60.7	43.7	35.9	45.2	51.3	51.3
Traffic Noise:	64.0	58.1	56.7	51.8	59.8	60.3

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.0	47.6	46.3	40.3	48.7	49.4
Med Trucks:	43.6	24.4	16.6	25.8	32.0	32.0
Hvy Trucks:	53.2	36.2	28.4	37.6	43.8	43.8
Traffic Noise:	55.2	48.0	46.4	42.3	50.0	50.5

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.4	46.0	44.7	38.6	47.1	47.7
Med Trucks:	42.1	22.9	15.2	24.4	30.5	30.5
Hvy Trucks:	52.7	35.7	27.9	37.1	43.3	43.3
Traffic Noise:	54.3	46.4	44.8	41.0	48.6	49.1

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.4	55.0	53.7	47.7	56.1	56.7
Med Trucks:	51.7	32.5	24.8	34.0	40.1	40.1
Hvy Trucks:	58.8	41.8	34.0	43.2	49.4	49.4
Traffic Noise:	61.6	55.2	53.8	49.1	57.0	57.5

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Briggs Road
Lot Number: 31

Project Name: TTM No. 38625
Job Number: 23020

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	2,350 vehicles		Day	Evening	Night	Daily
Peak Hour Volume:	235 vehicles	Autos:	69.5%	12.9%	9.6%	92.0%
Vehicle Speed:	45 mph	Medium Trucks:	1.4%	0.1%	1.5%	3.0%
Near/Far Lane Distance:	48 feet	Heavy Trucks:	2.4%	0.1%	2.5%	5.0%
Site Data		Elevations				
Barrier Height:	6 feet	Barrier Base Elevation: 1,448.2 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,443.5 feet				
Site Conditions(Hard/Soft):	Soft	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	38 feet	Autos:		0 feet		
C.L. Dist. To Observer (Backyard):	48 feet	Med Trucks:		2.3 feet		
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks:		8 feet		
C.L. Dist. To Observer (Structure):	58 feet	Pad Elevation: 1,448.2 feet				
Barrier Dist. To Observer (Structure):	20 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.00 %	Exterior:		5 feet		
Left View:	-90 degrees	First Floor:		5.5 feet		
Right View:	90 degrees	Second Floor:		14 feet		

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	69.34	-8.49	0.93	-1.20	0.00	-10.46	-10.62	-1.265
Med Trucks:	77.62	-23.36	0.93	-1.20	0.00	-10.27	-10.18	-0.41
Hvy Trucks:	82.14	-21.14	0.93	-1.20	0.00	-7.36	-6.4	-0.111

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	58.0	56.7	50.6	59.1	59.7
Med Trucks:	53.9	34.7	26.9	36.1	42.2	42.3
Hvy Trucks:	60.7	43.7	36.0	45.2	51.3	51.4
Traffic Noise:	64.0	58.2	56.7	51.8	59.8	60.4

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	47.8	46.5	40.4	48.8	49.5
Med Trucks:	43.7	24.5	16.7	25.9	32.1	32.1
Hvy Trucks:	53.4	36.4	28.6	37.8	44.0	44.0
Traffic Noise:	55.4	48.1	46.5	42.4	50.1	50.6

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.5	46.1	44.8	38.7	47.2	47.8
Med Trucks:	42.3	23.1	15.3	24.5	30.7	30.7
Hvy Trucks:	52.8	35.8	28.1	37.3	43.4	43.5
Traffic Noise:	54.5	46.5	44.9	41.2	48.8	49.2

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.5	55.2	53.9	47.8	56.2	56.9
Med Trucks:	51.8	32.6	24.8	34.0	40.2	40.2
Hvy Trucks:	58.8	41.8	34.1	43.3	49.4	49.5
Traffic Noise:	61.7	55.4	53.9	49.2	57.1	57.7

FHWA-RD-77-108 HIGHWAY TRAFFIC NOISE PREDICTION MODEL

Road Name: Briggs Road
Lot Number: 202

Project Name: TTM No. 38625
Job Number: 23020

NOISE MODEL INPUTS

Highway Data		Vehicle Mix				
Average Daily Traffic:	2,350 vehicles	Day	Evening	Night	Daily	
Peak Hour Volume:	235 vehicles	Autos:	69.5%	12.9%	9.6%	92.0%
Vehicle Speed:	45 mph	Medium Trucks:	1.4%	0.1%	1.5%	3.0%
Near/Far Lane Distance:	48 feet	Heavy Trucks:	2.4%	0.1%	2.5%	5.0%
Site Data		Elevations				
Barrier Height:	6 feet	Barrier Base Elevation: 1,447.7 feet				
Barrier Type(Wall/Berm):	Wall	Road Elevation: 1,444.0 feet				
Site Conditions(Hard/Soft):	Soft	Noise Source Elevation above Road				
Centerline (C.L.) Dist. to Barrier:	38 feet	Autos:		0 feet		
C.L. Dist. To Observer (Backyard):	48 feet	Med Trucks:		2.3 feet		
Barrier Dist. To Observer (Backyard):	10 feet	Hvy Trucks:		8 feet		
C.L. Dist. To Observer (Structure):	58 feet	Pad Elevation: 1,447.7 feet				
Barrier Dist. To Observer (Structure):	20 feet	Observer Heights Above Pad Elevation				
Road Grade:	0.00 %	Exterior:		5 feet		
Left View:	-90 degrees	First Floor:		5.5 feet		
Right View:	90 degrees	Second Floor:		14 feet		

FHWA NOISE MODEL CALCULATIONS

	REMEL	Traffic Flow	Distance	Finite Road	Grade	Barrier Attenuation		
						Exterior	1st Flr	2nd Flr
Autos:	69.34	-8.49	0.96	-1.20	0.00	-10.15	-10.21	-0.86
Med Trucks:	77.62	-23.36	0.96	-1.20	0.00	-9.82	-9.58	-0.34
Hvy Trucks:	82.14	-21.14	0.96	-1.20	0.00	-6.8	-5.7	0

UNMITIGATED NOISE LEVELS (Backyard with topographical attenuation)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	58.1	56.8	50.7	59.1	59.8
Med Trucks:	53.9	34.7	26.9	36.1	42.3	42.3
Hvy Trucks:	60.8	43.8	36.0	45.2	51.4	51.4
Traffic Noise:	64.1	58.2	56.8	51.9	59.9	60.4

MITIGATED NOISE LEVELS (Backyard with sound wall)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.5	48.1	46.8	40.7	49.2	49.8
Med Trucks:	44.2	25.0	17.2	26.4	32.6	32.6
Hvy Trucks:	54.0	37.0	29.2	38.4	44.6	44.6
Traffic Noise:	55.9	48.4	46.9	42.8	50.5	51.0

MITIGATED NOISE LEVELS (First Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.9	46.5	45.2	39.2	47.6	48.2
Med Trucks:	42.9	23.7	15.9	25.1	31.3	31.3
Hvy Trucks:	53.5	36.6	28.8	38.0	44.1	44.2
Traffic Noise:	55.1	47.0	45.3	41.7	49.3	49.7

MITIGATED NOISE LEVELS (Second Floor)

	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	55.6	54.3	48.3	56.7	57.3
Med Trucks:	51.9	32.7	24.9	34.1	40.3	40.3
Hvy Trucks:	59.0	42.0	34.2	43.4	49.6	49.6
Traffic Noise:	62.0	55.8	54.4	49.6	57.5	58.1

APPENDIX F

Onsite Activity Areas Reference Noise Measurements and Noise Calculations Printouts

File Translated: V:\Vista Env\2010\10007-Orange Salem Lutheran Church\Noise Measurements\D-6-20-10.slmddl
 Model/Serial Number: 824 / A3176
 Firmware/Software Revs: 4.283 / 3.120
 Name:
 Descr1: 1021 Didrikson Way
 Descr2: Laguna Beach, CA 92651
 Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
 Location: Taken after church service - noise primarily from reception and playgr
 Note1: 5' north of playground - kids playing
 Note2: 40' SW of multipurpose south doors

Overall Any Data

Start Time: 20-Jun-2010 11:00:56
 Elapsed Time: 00:12:00.6

	A Weight	C Weight	Flat
Leq:	66.6 dBA	69.3 dBC	69.6 dBF
SEL:	95.1 dBA	97.8 dBC	98.2 dBF
Peak:	100.4 dBA	102.5 dBC	102.6 dBF
20-Jun-2010 11:11:23	20-Jun-2010 11:04:20	20-Jun-2010 11:04:20	
Lmax (slow):	85.3 dBA	88.9 dBC	88.9 dBF
20-Jun-2010 11:04:20	20-Jun-2010 11:04:19	20-Jun-2010 11:04:19	
Lmin (slow):	51.6 dBA	58.6 dBC	59.5 dBF
20-Jun-2010 11:00:56	20-Jun-2010 11:00:56	20-Jun-2010 11:00:56	
Lmax (fast):	90.7 dBA	94.4 dBC	94.4 dBF
20-Jun-2010 11:04:19	20-Jun-2010 11:04:19	20-Jun-2010 11:04:19	
Lmin (fast):	47.1 dBA	57.4 dBC	58.6 dBF
20-Jun-2010 11:01:31	20-Jun-2010 11:01:26	20-Jun-2010 11:01:26	
Lmax (impulse):	92.5 dBA	95.9 dBC	95.8 dBF
20-Jun-2010 11:04:20	20-Jun-2010 11:04:19	20-Jun-2010 11:04:19	
Lmin (impulse):	51.6 dBA	58.5 dBC	59.3 dBF
20-Jun-2010 11:00:56	20-Jun-2010 11:00:56	20-Jun-2010 11:00:56	

Spectra

Date Time Run Time
 20-Jun-2010 11:00:56 00:12:00.6

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	48.9		51.8		27.0		630	57.3		73.7		34.5	
16.0	49.0	54.8	55.5	58.9	31.6	35.9	800	57.5		58.5		36.0	
20.0	51.6		54.4		32.8		1000	58.7	62.4	81.2	81.3	34.1	39.1
25.0	52.0		50.3		36.0		1250	56.2		65.3		32.1	
31.5	51.7	56.6	50.4	55.8	37.0	41.3	1600	55.2		61.7		32.4	
40.0	51.8		52.1		36.6		2000	54.7	58.8	61.7	66.5	30.1	35.3
50.0	61.6		65.1		47.9		2500	51.4		61.9		28.0	
63.0	54.9	62.8	55.3	65.8	43.9	49.6	3150	50.2		58.6		25.7	
80.0	52.0		53.1		36.2		4000	48.2	53.0	57.2	62.1	24.7	29.1
100	51.1		52.1		36.3		5000	44.7		55.8		21.6	
125	50.9	55.2	51.3	57.0	34.6	40.0	6300	42.0		50.0		20.1	
160	49.1		53.0		34.4		8000	43.2	46.8	52.4	55.9	18.2	23.6
200	49.5		50.7		34.0		10000	40.6		50.5		17.8	
250	50.5	55.6	53.7	71.0	33.0	38.9	12500	40.3		44.9		17.5	
315	52.1		70.9		35.1		16000	31.4	41.1	39.2	46.0	18.2	23.5
400	59.8		83.7		33.1		20000	28.4		30.1		20.0	
500	62.6	65.2	89.7	90.8	34.1	38.7							

Ln Start Level: 15 dB
 L1.00 0.0 dBA L50.00 0.0 dBA L95.00 0.0 dBA
 L5.00 0.0 dBA L90.00 0.0 dBA L99.00 0.0 dBA

Detector: Slow
 Weighting: A
 SPL Exceedance Level 1: 85.0 dB Exceeded: 1 times
 SPL Exceedance level 2: 120 dB Exceeded: 0 times
 Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
 Peak-2 Exceedance Level: 100 dB Exceeded: 1 times
 Hysteresis: 2
 Overloaded: 0 time(s)
 Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10007-Orange Salem Lutheran Church\Noise Measurements\D-6-20-10.slmdl
Model/Serial Number: 824 / A3176

Current Any Data

Start Time: 20-Jun-2010 11:00:56
Elapsed Time: 00:12:00.6

	A Weight	C Weight	Flat
Leq:	66.6 dBA	69.3 dBC	69.6 dBF
SEL:	95.1 dBA	97.8 dBC	98.2 dBF
Peak:	100.4 dBA	102.5 dBC	102.6 dBF
20-Jun-2010 11:11:23		20-Jun-2010 11:04:20	20-Jun-2010 11:04:20
Lmax (slow):	85.3 dBA	88.9 dBC	88.9 dBF
20-Jun-2010 11:04:20		20-Jun-2010 11:04:19	20-Jun-2010 11:04:19
Lmin (slow):	51.6 dBA	58.6 dBC	59.5 dBF
20-Jun-2010 11:00:56		20-Jun-2010 11:00:56	20-Jun-2010 11:00:56
Lmax (fast):	90.7 dBA	94.4 dBC	94.4 dBF
20-Jun-2010 11:04:19		20-Jun-2010 11:04:19	20-Jun-2010 11:04:19
Lmin (fast):	47.1 dBA	57.4 dBC	58.6 dBF
20-Jun-2010 11:01:31		20-Jun-2010 11:01:26	20-Jun-2010 11:01:26
Lmax (impulse):	92.5 dBA	95.9 dBC	95.8 dBF
20-Jun-2010 11:04:20		20-Jun-2010 11:04:19	20-Jun-2010 11:04:19
Lmin (impulse):	51.6 dBA	58.5 dBC	59.3 dBF
20-Jun-2010 11:00:56		20-Jun-2010 11:00:56	20-Jun-2010 11:00:56

Calibrated:	20-Jun-2010 08:58:03	Offset:	-48.1 dB
Checked:	20-Jun-2010 08:58:03	Level:	94.0 dB
Calibrator	not set	Level:	94.0 dB
Cal Records Count:	0		

Interval Records:	Disabled	Number Interval Records:	0
History Records:	Disabled	Number History Records:	0
Run/Stop Records:		Number Run/Stop Records:	2

Session Report

2/1/2017

Information Panel

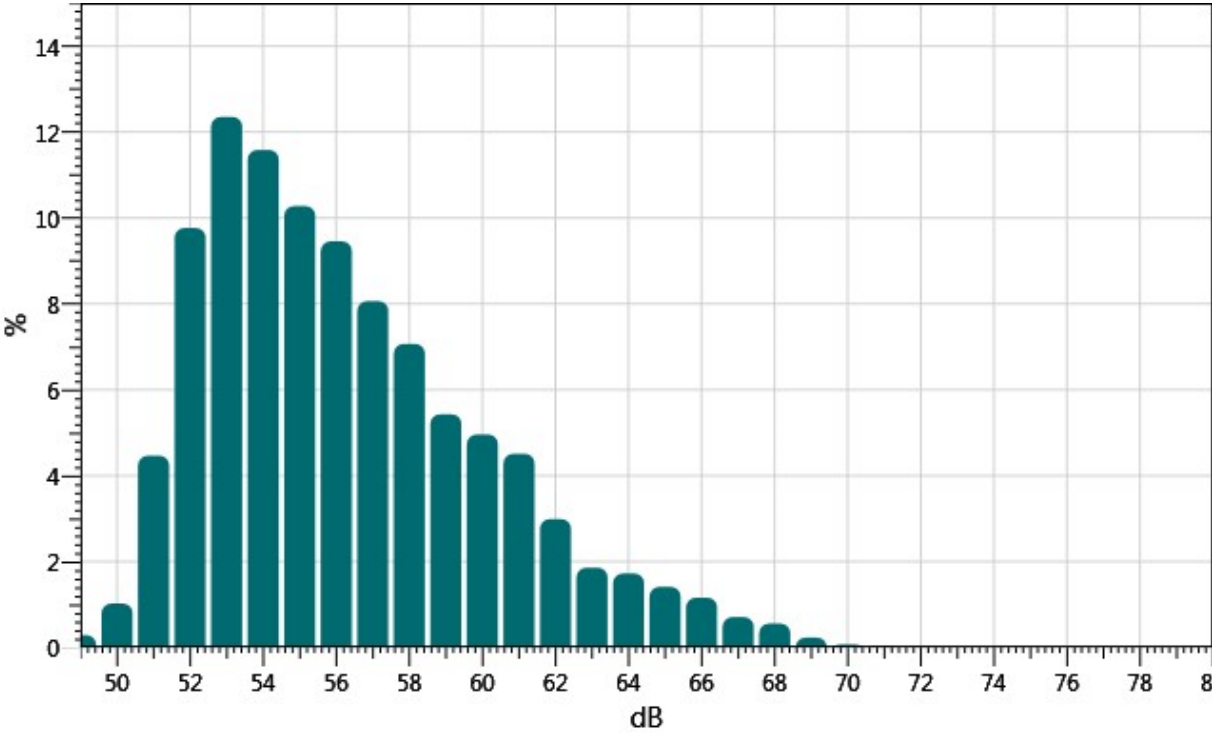
Name	S087_BLH080004_01022017_072920
Start Time	1/30/2017 2:57:12 PM
Stop Time	1/30/2017 3:12:12 PM
Device Name	BLH080004
Model Type	SoundPro DL
Device Firmware Rev	R.13H
Comments	Located between JV and Varsity Soccer Games (5 feet from each field) at Bellflower High School

Summary Data Panel

<u>Description</u>	<u>Meter</u>	<u>Value</u>	<u>Description</u>	<u>Meter</u>	<u>Value</u>
Leq	1	58.9 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF
Exchange Rate	2	3 dB	Weighting	2	A
Response	2	FAST			

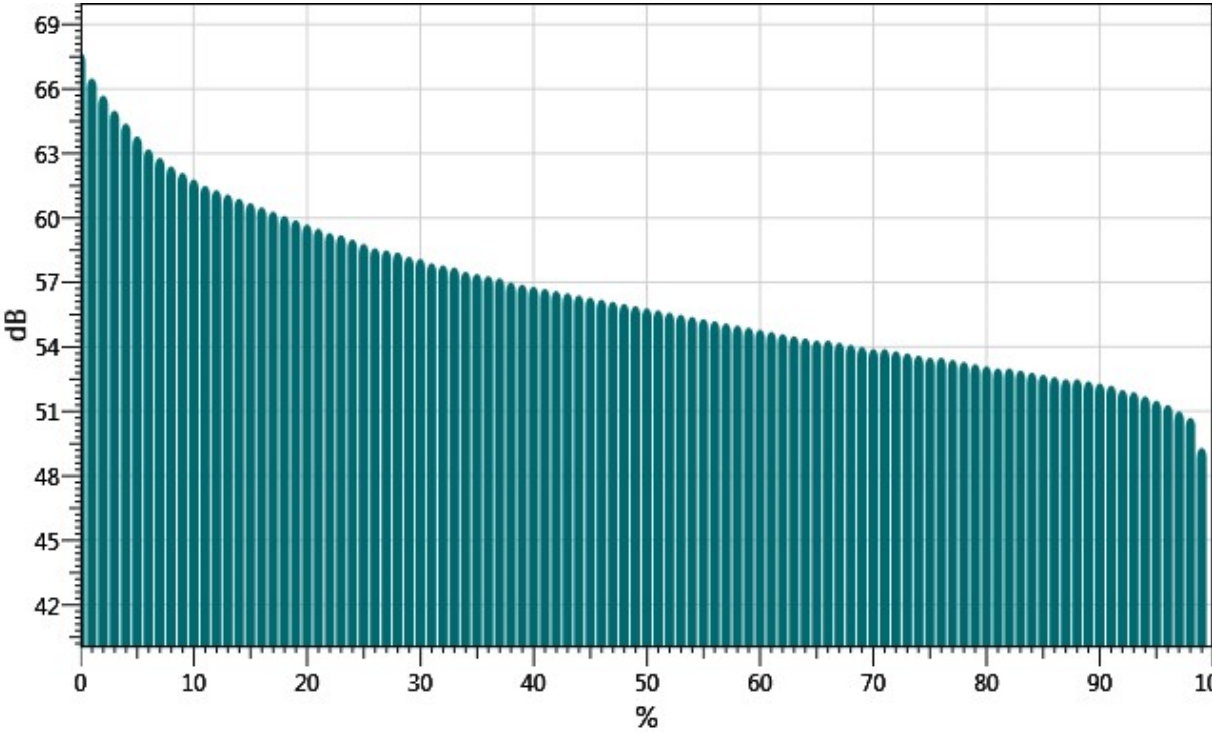
Statistics Chart

S087_BLH080004_01022017_072920: Statistics Chart



Exceedance Chart

S087_BLH080004_01022017_072920: Exceedance Chart



Statistics Table

dB:	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
49:	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.06	0.11	0.05	0.29
50:	0.03	0.02	0.02	0.05	0.07	0.13	0.14	0.15	0.20	0.22	1.02
51:	0.27	0.43	0.25	0.49	0.41	0.41	0.45	0.50	0.53	0.73	4.47
52:	0.73	0.66	0.75	0.90	0.93	1.19	1.23	1.08	1.13	1.16	9.76
53:	1.26	1.36	1.12	1.16	1.21	1.29	1.22	1.26	1.20	1.27	12.35
54:	1.51	1.51	0.86	1.14	1.18	1.09	0.99	1.05	1.15	1.10	11.58
55:	1.05	1.08	1.09	1.14	1.07	0.98	1.02	0.93	0.95	0.96	10.27
56:	0.98	0.88	0.95	0.98	0.90	1.08	0.99	0.90	0.93	0.86	9.45
57:	1.02	1.07	0.68	0.95	0.83	0.81	0.69	0.66	0.69	0.67	8.06
58:	0.75	0.73	0.74	0.76	0.72	0.74	0.70	0.65	0.69	0.58	7.07
59:	0.52	0.52	0.57	0.55	0.58	0.51	0.54	0.50	0.54	0.59	5.43
60:	0.55	0.54	0.42	0.47	0.47	0.48	0.48	0.57	0.50	0.47	4.96
61:	0.52	0.47	0.50	0.47	0.46	0.44	0.50	0.42	0.40	0.34	4.51
62:	0.38	0.33	0.30	0.26	0.28	0.31	0.26	0.26	0.33	0.30	2.99
63:	0.26	0.25	0.15	0.18	0.18	0.15	0.21	0.16	0.16	0.15	1.86
64:	0.19	0.22	0.17	0.17	0.16	0.17	0.17	0.18	0.15	0.14	1.72
65:	0.15	0.13	0.13	0.12	0.12	0.11	0.14	0.17	0.19	0.15	1.41
66:	0.14	0.17	0.09	0.14	0.14	0.11	0.11	0.09	0.09	0.08	1.16
67:	0.12	0.08	0.06	0.07	0.06	0.07	0.07	0.07	0.06	0.05	0.71
68:	0.06	0.07	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.56
69:	0.04	0.03	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.23
70:	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.07
71:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
72:	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

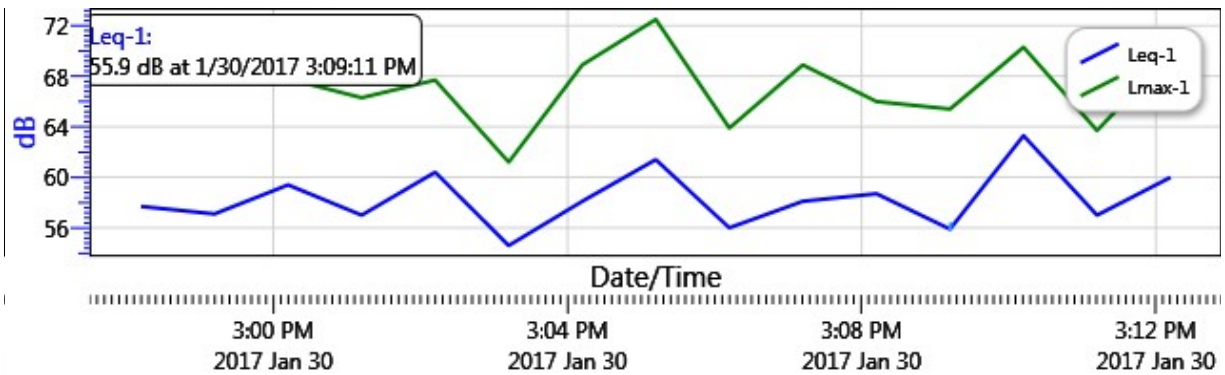
Exceedance Table

.	0%	1%	2%	3%	4%	5%	6%	%7	%8	%9
0%:		67.7	66.5	65.7	65.0	64.4	63.8	63.2	62.8	62.4
10%:	62.1	61.8	61.5	61.3	61.1	60.9	60.7	60.5	60.3	60.1
20%:	59.9	59.7	59.5	59.3	59.2	59.0	58.8	58.6	58.5	58.4
30%:	58.2	58.1	57.9	57.8	57.7	57.5	57.4	57.3	57.2	57.0
40%:	56.9	56.8	56.7	56.6	56.5	56.4	56.3	56.2	56.1	56.0
50%:	55.9	55.8	55.7	55.6	55.5	55.4	55.3	55.2	55.1	55.0
60%:	54.9	54.8	54.7	54.6	54.5	54.4	54.3	54.3	54.2	54.1

70%:	54.0	53.9	53.9	53.8	53.7	53.6	53.5	53.5	53.4	53.3
80%:	53.2	53.1	53.0	53.0	52.9	52.8	52.7	52.6	52.5	52.5
90%:	52.4	52.3	52.2	52.0	51.9	51.7	51.5	51.3	51.0	50.7
100%:	49.3									

Logged Data Chart

S087_BLH080004_01022017_072920: Logged Data Chart



Site 1 - On Tree Near Lunch Shelters
September 21, 2019 9:40:02 AM
Sampling Time = 1 sec Freq Weighting=A
Record Num = 39597
Leq = 58.7
Min = 48.4 Min Leq hr at 10:11 AM 53.2
Max = 89.5 Max Leq hr at 6:46 PM 61.7

Site 1 - On Tree Near Lunch Shelters

SPL Time Leq (1 hour Avg.)

50.3	9:40:02	
49.5	9:40:03	
53.8	9:40:04	
61.4	9:40:05	
65.5	9:40:06	
62.4	9:40:07	
64.6	9:40:08	
60.7	9:40:09	
66.5	9:40:10	
62.5	9:40:11	
58.8	9:40:12	
55.2	9:40:13	
52.2	9:40:14	
57.8	9:40:15	
60.1	9:40:16	
61.9	9:40:17	
65.9	9:40:18	
66.2	9:40:19	
68.3	9:40:20	
64.5	9:40:21	
64.1	9:40:22	
64.6	9:40:23	
63.8	9:40:24	
66.9	9:40:25	
64.4	9:40:26	
60.8	9:40:27	
57.9	9:40:28	
56.9	9:40:29	
57.0	9:40:30	
56.8	9:40:31	
55.5	9:40:32	
56.8	9:40:33	
62.5	9:40:34	
67.4	9:40:35	
64.8	9:40:36	
62.3	9:40:37	
65.3	9:40:38	
65.9	9:40:39	
62.4	9:40:40	
60.7	9:40:41	
59.0	9:40:42	
56.1	9:40:43	
53.2	9:40:44	
51.2	9:40:45	
57.5	9:40:46	
63.4	9:40:47	
59.6	9:40:48	
56.0	9:40:49	
58.5	9:40:50	
58.9	9:40:51	
58.3	9:40:52	
62.7	9:40:53	
69.4	9:40:54	
66.3	9:40:55	
63.8	9:40:56	
61.0	9:40:57	
57.8	9:40:58	
56.2	9:40:59	
59.9	9:41:00	
60.9	9:41:01	
59.2	9:41:02	
55.7	9:41:03	
53.8	9:41:04	
52.9	9:41:05	
56.4	9:41:06	
63.9	9:41:07	
63.1	9:41:08	
67.0	9:41:09	
70.9	9:41:10	
70.5	9:41:11	
66.9	9:41:12	
65.7	9:41:13	
62.8	9:41:14	
60.0	9:41:15	
58.4	9:41:16	
64.0	9:41:17	
66.5	9:41:18	
62.4	9:41:19	
59.2	9:41:20	
57.2	9:41:21	
56.3	9:41:22	
55.5	9:41:23	
54.2	9:41:24	
53.3	9:41:25	
53.7	9:41:26	
53.6	9:41:27	
56.3	9:41:28	
58.9	9:41:29	
67.4	9:41:30	
66.4	9:41:31	
62.3	9:41:32	
58.6	9:41:33	
55.4	9:41:34	
53.4	9:41:35	
51.9	9:41:36	
51.7	9:41:37	
51.7	9:41:38	
51.4	9:41:39	
50.8	9:41:40	
50.3	9:41:41	
50.3	9:41:42	
49.9	9:41:43	
50.0	9:41:44	
50.4	9:41:45	
50.0	9:41:46	
49.9	9:41:47	
50.0	9:41:48	
50.0	9:41:49	
49.8	9:41:50	
49.6	9:41:51	
49.4	9:41:52	
49.3	9:41:53	
49.4	9:41:54	
49.4	9:41:55	
49.5	9:41:56	
49.4	9:41:57	
50.6	9:41:58	
50.3	9:41:59	
49.3	9:42:00	
49.0	9:42:01	
49.4	9:42:02	
49.6	9:42:03	
50.1	9:42:04	
50.8	9:42:05	
51.2	9:42:06	
51.6	9:42:07	
51.4	9:42:08	
51.5	9:42:09	
51.6	9:42:10	
52.5	9:42:11	
52.6	9:42:12	
52.3	9:42:13	
53.3	9:42:14	
51.6	9:42:15	
50.2	9:42:16	
49.7	9:42:17	
49.5	9:42:18	
49.5	9:42:19	
49.3	9:42:20	
49.2	9:42:21	
49.7	9:42:22	
49.7	9:42:23	
50.1	9:42:24	
50.1	9:42:25	
49.8	9:42:26	
49.6	9:42:27	
49.6	9:42:28	
49.7	9:42:29	
50.0	9:42:30	
50.3	9:42:31	
50.1	9:42:32	
51.2	9:42:33	
51.0	9:42:34	
50.2	9:42:35	
49.9	9:42:36	
50.1	9:42:37	
50.3	9:42:38	
50.4	9:42:39	
50.9	9:42:40	
51.0	9:42:41	
51.8	9:42:42	
51.5	9:42:43	
51.5	9:42:44	
51.5	9:42:45	
51.2	9:42:46	
50.7	9:42:47	
50.8	9:42:48	
50.1	9:42:49	
49.6	9:42:50	
49.3	9:42:51	

Site 2 - On Fence for Basketball Courts
September 21, 2019 9:46:51 AM
Sampling Time = 1 sec Freq Weighting=A
Record Num = 39512
Leq = 58.6
Min = 44.1 Min Leq hr at 2:09 PM 55.5
Max = 85.2 Max Leq hr at 7:42 PM 62.7

Site 2 - On Fence for Basketball Courts

SPL Time Leq (1 hour Avg.)

58.4	9:46:51	
55.4	9:46:52	
54.2	9:46:53	
55.1	9:46:54	
63.4	9:46:55	
62.2	9:46:56	
68.6	9:46:57	
62.0	9:46:58	
59.7	9:46:59	
55.7	9:47:00	
61.7	9:47:01	
58.7	9:47:02	
58.5	9:47:03	
56.4	9:47:04	
64.3	9:47:05	
60.4	9:47:06	
56.9	9:47:07	
54.1	9:47:08	
56.7	9:47:09	
56.1	9:47:10	
58.3	9:47:11	
55.4	9:47:12	
53.7	9:47:13	
54.4	9:47:14	
58.5	9:47:15	
59.0	9:47:16	
57.3	9:47:17	
56.2	9:47:18	
55.1	9:47:19	
54.5	9:47:20	
56.1	9:47:21	
55.6	9:47:22	
56.1	9:47:23	
57.2	9:47:24	
58.0	9:47:25	
56.6	9:47:26	
63.8	9:47:27	
61.3	9:47:28	
58.1	9:47:29	
55.0	9:47:30	
52.2	9:47:31	
50.3	9:47:32	
49.0	9:47:33	
48.6	9:47:34	
46.4	9:47:35	
45.4	9:47:36	
50.7	9:47:37	
53.0	9:47:38	
56.6	9:47:39	
57.4	9:47:40	
57.3	9:47:41	
57.2	9:47:42	
57.9	9:47:43	
56.7	9:47:44	
55.2	9:47:45	
54.0	9:47:46	
53.0	9:47:47	
52.9	9:47:48	
54.2	9:47:49	
55.6	9:47:50	
57.9	9:47:51	
60.3	9:47:52	
60.1	9:47:53	
56.0	9:47:54	
55.6	9:47:55	
55.9	9:47:56	
61.8	9:47:57	
57.9	9:47:58	
64.4	9:47:59	
61.5	9:48:00	
59.2	9:48:01	
57.2	9:48:02	
55.4	9:48:03	
54.1	9:48:04	
52.6	9:48:05	
52.6	9:48:06	
63.4	9:48:07	
60.4	9:48:08	
66.2	9:48:09	
65.7	9:48:10	
62.0	9:48:11	
68.1	9:48:12	
64.0	9:48:13	
63.1	9:48:14	
62.3	9:48:15	
59.7	9:48:16	
56.6	9:48:17	
56.4	9:48:18	
62.1	9:48:19	
65.4	9:48:20	
63.0	9:48:21	
58.8	9:48:22	
56.8	9:48:23	
57.1	9:48:24	
56.3	9:48:25	
57.0	9:48:26	
58.1	9:48:27	
57.0	9:48:28	
52.8	9:48:29	
58.5	9:48:30	
64.3	9:48:31	
60.0	9:48:32	
65.8	9:48:33	
61.6	9:48:34	
57.5	9:48:35	
53.5	9:48:36	
50.0	9:48:37	
47.4	9:48:38	
46.3	9:48:39	
45.6	9:48:40	
45.5	9:48:41	
46.3	9:48:42	
48.6	9:48:43	
48.1	9:48:44	
48.8	9:48:45	
53.4	9:48:46	
54.3	9:48:47	
55.4	9:48:48	
57.6	9:48:49	
58.2	9:48:50	
69.4	9:48:51	
70.9	9:48:52	
68.4	9:48:53	
66.1	9:48:54	
71.8	9:48:55	
71.5	9:48:56	
70.1	9:48:57	
66.4	9:48:58	
62.8	9:48:59	
60.0	9:49:00	
58.4	9:49:01	
60.0	9:49:02	
59.7	9:49:03	
59.7	9:49:04	
60.4	9:49:05	
59.5	9:49:06	
58.3	9:49:07	
57.6	9:49:08	
57.9	9:49:09	
57.7	9:49:10	
72.5	9:49:11	
76.3	9:49:12	
73.2	9:49:13	
69.7	9:49:14	
68.6	9:49:15	
66.0	9:49:16	
63.1	9:49:17	
59.7	9:49:18	
56.2	9:49:19	
53.1	9:49:20	
51.7	9:49:21	
51.6	9:49:22	
50.4	9:49:23	
51.2	9:49:24	
53.9	9:49:25	
55.6	9:49:26	
56.9	9:49:27	
51.8	9:49:28	
58.7	9:49:29	
58.5	9:49:30	
58.2	9:49:31	
57.7	9:49:32	
57.5	9:49:33	
57.3	9:49:34	
56.7	9:49:35	
56.9	9:49:36	
57.4	9:49:37	
57.2	9:49:38	
57.2	9:49:39	
57.6	9:49:40	

Site 3 - On Light Post for Football Field
September 21, 2019 10:08:08 AM
Sampling Time = 1 sec Freq Weighting=A
Record Num = 38144
Leq = 53.6
Min = 42.0 Min Leq hr at 10:45 AM 50.2
Max = 76.5 Max Leq hr at 5:36 PM 56.6

Site 3 - On Light Post for Football Field

SPL Time Leq (1 hour Avg.)

65.5	10:08:09	
61.5	10:08:10	
60.4	10:08:11	
60.9	10:08:12	
60.5	10:08:13	
55.0	10:08:14	
57.7	10:08:15	
59.8	10:08:16	
62.3	10:08:17	
58.1	10:08:18	
64.0	10:08:19	
60.3	10:08:20	
56.5	10:08:21	
53.0	10:08:22	
56.7	10:08:23	
54.8	10:08:24	
51.9	10:08:25	
50.0	10:08:26	
52.7	10:08:27	
60.0	10:08:28	
59.6	10:08:29	
57.3	10:08:30	
54.9	10:08:31	
54.3	10:08:32	
56.0	10:08:33	
54.0	10:08:34	
54.0	10:08:35	
54.7	10:08:36	
53.4	10:08:37	
55.6	10:08:38	
63.0	10:08:39	
60.3	10:08:40	
58.1	10:08:41	
56.1	10:08:42	
54.9	10:08:43	
55.4	10:08:44	
55.2	10:08:45	
53.5	10:08:46	
53.9	10:08:47	
58.9	10:08:48	
56.5	10:08:49	
54.9	10:08:50	
60.4	10:08:51	
61.4	10:08:52	
57.5	10:08:53	
64.2	10:08:54	
60.3	10:08:55	
57.0	10:08:56	
54.8	10:08:57	
54.9	10:08:58	
55.1	10:08:59	
53.6	10:09:00	
54.6	10:09:01	
55.2	10:09:02	
56.9	10:09:03	
56.8	10:09:04	
59.8	10:09:05	

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	SLM_0002509_831_Data_001.06.ldbin
Meter	831		
Firmware	2.314		
User	GT		Location
Description	3609 Navajo PI		
Note	Approx 3 ft from East Prop Line and 14 ft East of Pickle Ball Court during Game		
Start Time	2021-03-05 11:49:45	Duration	0:10:00.0
End Time	2021-03-05 11:59:45	Run Time	0:10:00.0
		Pause Time	0:00:00.0

Results

Overall Metrics

LA _{eq}	63.6 dB		
LAE	91.4 dB	SEA	--- dB
EA	153.1 µPa²h		
LZ _{peak}	107.4 dB	2021-03-05 11:51:38	
LAS _{max}	77.6 dB	2021-03-05 11:51:38	
LAS _{min}	41.3 dB	2021-03-05 11:59:02	
LA _{eq}	63.6 dB		
LC _{eq}	64.8 dB	LC _{eq} - LA _{eq}	1.2 dB
LAI _{eq}	76.3 dB	LAI _{eq} - LA _{eq}	12.7 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	60	0:02:48.7
LAS > 85.0 dB	0	0:00:00.0
LZ _{peak} > 135.0 dB	0	0:00:00.0
LZ _{peak} > 137.0 dB	0	0:00:00.0
LZ _{peak} > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
63.6 dB	63.6 dB	0.0 dB	
LDEN	LDay	LEve	LNight
63.6 dB	63.6 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	63.6 dB		64.8 dB		69.3 dB	
LS _(max)	77.6 dB	2021-03-05 11:51:38	77.5 dB	2021-03-05 11:51:38	93.1 dB	2021-03-05 11:49:45
LF _(max)	86.2 dB	2021-03-05 11:51:38	86.0 dB	2021-03-05 11:51:38	97.6 dB	2021-03-05 11:49:45
LI _(max)	91.4 dB	2021-03-05 11:51:38	91.3 dB	2021-03-05 11:51:38	99.8 dB	2021-03-05 11:49:45
LS _(min)	41.3 dB	2021-03-05 11:59:02	53.5 dB	2021-03-05 11:59:03	57.4 dB	2021-03-05 11:55:39
LF _(min)	36.3 dB	2021-03-05 11:51:07	51.2 dB	2021-03-05 11:59:02	54.5 dB	2021-03-05 11:55:08
LI _(min)	45.6 dB	2021-03-05 11:55:40	53.8 dB	2021-03-05 11:59:02	58.6 dB	2021-03-05 11:55:39
L _{Peak(max)}	106.9 dB	2021-03-05 11:51:38	106.9 dB	2021-03-05 11:51:38	107.4 dB	2021-03-05 11:51:38

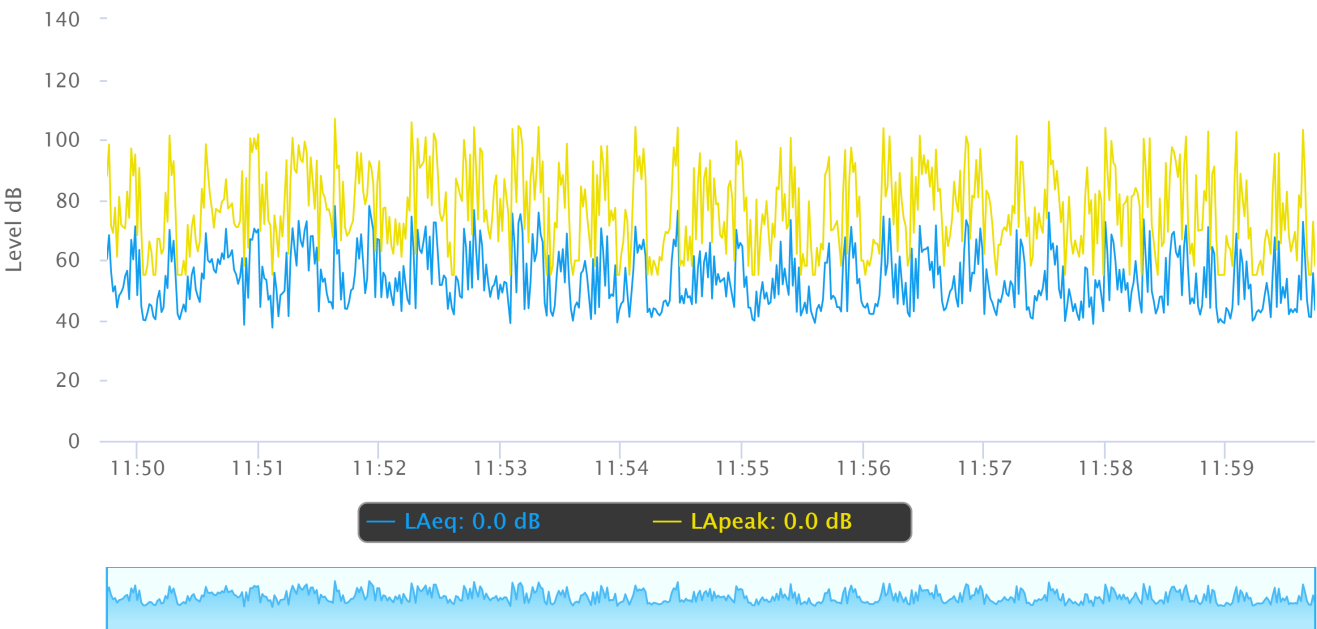
Overloads

Count	Duration	OBA Count	OBA Duration
0	0:00:00.0	0	0:00:00.0

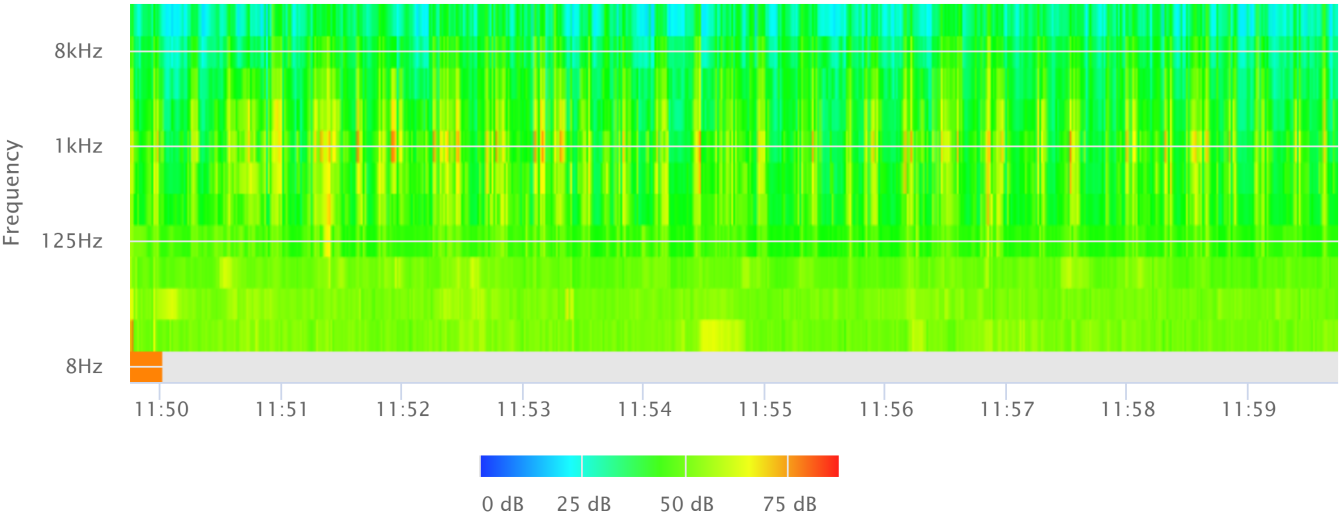
Statistics

LAS 5.0	70.2 dB
LAS 10.0	68.1 dB
LAS 33.3	61.3 dB
LAS 50.0	56.5 dB
LAS 66.6	52.5 dB
LAS 90.0	46.4 dB

Time History



OBA 1/1 Leq



General Information													
Serial Number												02509	
Model												831	
Firmware Version												2.000	
Filename												831_Data.001	
User												GT	
Job Description													
Location	Indian Wells Tennis Garden at practice courts												
Measurement Description													
Start Time	Wednesday, 2011 November 09 10:27:24												
Stop Time	Wednesday, 2011 November 09 10:42:24												
Duration												00:15:00.5	
Run Time												00:14:43.5	
Pause												00:00:17.0	
Pre Calibration	Wednesday, 2011 November 09 10:21:42												
Post Calibration												None	
Calibration Deviation												---	
Note													
Approx 5 feet from 4 some playing a tennis match with another tennis match 60 feet away 65 F, 30.2 in Hg, 24% humidity, 2 mph wind, clear sky													
Overall Data													
LAeq												50.7	dB
LASmax	2011 Nov 09 10:29:47											72.9	dB
LZpeak (max)	2011 Nov 09 10:30:04											98.3	dB
LASmin	2011 Nov 09 10:34:07											41.5	dB
LCeq												60.9	dB
LAeq												50.7	dB
LCeq - LAeq												10.3	dB
LA1eq												58.1	dB
LAeq												50.7	dB
LA1eq - LAeq												7.4	dB
Ldn												50.7	dB
LDay 07:00-23:00												50.7	dB
LNight 23:00-07:00												---	dB
Lden												50.7	dB
LDay 07:00-19:00												50.7	dB
LEvening 19:00-23:00												---	dB
LNight 23:00-07:00												---	dB
LAE												80.1	dB
# Overloads												0	
Overload Duration												0.0	s
# OBA Overloads												0	
OBA Overload Duration												0.0	s
Statistics													
LAS5.00												54.3	dBA
LAS10.00												52.8	dBA
LAS33.30												48.8	dBA
LAS50.00												47.0	dBA
LAS66.60												45.7	dBA
LAS90.00												44.0	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)												1 / 0.6 s	
LAS > 85.0 dB (Exceedence Counts / Duration)												0 / 0.0 s	
LZpeak > 135.0 dB (Exceedence Counts / Duration)												0 / 0.0 s	
LZpeak > 137.0 dB (Exceedence Counts / Duration)												0 / 0.0 s	
LZpeak > 140.0 dB (Exceedence Counts / Duration)												0 / 0.0 s	
Settings													
RMS Weight												A Weighting	
Peak Weight												Z Weighting	
Detector												Slow	
Preamp												PRM831	
Integration Method												Linear	
OBA Range												Low	
OBA Bandwidth												1/1 and 1/3	
OBA Freq. Weighting												Z Weighting	
OBA Max Spectrum												At Bin Max	
Gain												+0	dB
Under Range Limit												25.9	dB
Under Range Peak												76.3	dB
Noise Floor												16.8	dB
Overload												141.9	dB
1/1 Spectra													
Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k	
LZeq	55.1	53.6	55.6	58.7	52.8	49.2	48.4	46.1	41.6	36.3	30.3	20.2	
LZSmax	77.5	69.5	72.0	65.3	65.7	62.9	74.1	66.7	63.5	50.8	42.9	35.4	
LZSmin	44.5	49.4	50.2	51.2	46.2	42.1	38.1	34.8	30.7	23.8	15.2	11.3	

1/3 Spectra												
Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	51.0	49.7	50.2	49.0	49.2	48.5	48.3	50.4	52.8	51.1	56.2	52.7
LZSmax	69.3	70.4	74.9	65.3	65.4	60.5	60.0	61.5	72.0	61.8	63.5	64.5
LZSmin	35.9	37.0	39.1	41.1	41.4	42.6	42.7	44.8	44.3	44.0	45.8	44.5
Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	47.8	48.3	48.0	45.3	44.0	43.5	42.6	43.8	44.1	40.8	42.0	41.2
LZSmax	58.8	63.7	64.2	58.0	56.1	61.0	66.8	70.5	69.8	55.2	58.4	66.3
LZSmin	41.1	41.0	39.6	37.9	36.4	35.8	33.8	32.9	32.5	30.2	29.9	29.7
Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	38.9	35.5	35.0	32.8	31.8	29.0	27.2	25.5	22.5	18.4	13.8	9.2
LZSmax	62.3	53.6	53.2	47.2	48.0	46.4	40.0	38.1	35.9	34.8	28.4	19.8
LZSmin	27.4	24.9	23.5	20.7	18.5	15.8	12.4	9.8	7.2	6.2	6.4	6.8

Calibration History												
Preamp	Date										dB re. 1V/Pa	
Direct	07 Dec 2010 00:05:22										-26.4	
PRM831	09 Nov 2011 10:21:33										-24.4	
PRM831	26 Oct 2011 13:26:59										-25.4	
PRM831	23 Oct 2011 07:00:42										-25.5	
PRM831	21 Oct 2011 19:18:27										-25.9	
PRM831	21 Oct 2011 11:49:55										-25.1	
PRM831	20 Oct 2011 18:13:39										-24.9	
PRM831	20 Oct 2011 15:24:54										-25.2	
PRM831	16 Sep 2011 05:30:45										-26.0	
PRM831	15 Sep 2011 20:04:18										-26.6	
PRM831	26 Jul 2011 15:57:55										-25.7	
PRM831	06 Jun 2011 10:37:42										-24.9	

Summary

File Name	831_Data.002
Serial Number	0002509
Model	Model 831
Firmware Version	2.301
User	GT
Location	At 7080 Mayten Ave - Edge of MFR Parking Lot
Job Description	Mayten & Foothill
Note	
Measurement Description	
Start	2015-09-10 15:54:09
Stop	2015-09-10 16:10:10
Duration	0:16:00.5
Run Time	0:16:00.5
Pause	0:00:00.0
Pre Calibration	2015-09-10 15:32:49
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamp	PRM831		
Microphone Correction	Off		
Integration Method	Linear		
OBA Range	High		
OBA Bandwidth	1/1 and 1/3		
OBA Freq. Weighting	Z Weighting		
OBA Max Spectrum	Bin Max		
Gain	0.0 dB		
Overload	143.1 dB		
	A	C	Z
Under Range Peak	75.6	72.6	77.6 dB
Under Range Limit	26.1	26.4	31.8 dB
Noise Floor	17.0	17.3	22.5 dB

Results

LAeq	52.1 dB	
LAE	81.9 dB	
EA	17.242 $\mu\text{Pa}^2\text{h}$	
LApeak (max)	2015-09-10 16:03:36	98.6 dB
LASmax	2015-09-10 16:03:36	74.6 dB
LASmin	2015-09-10 15:54:57	41.3 dB
SEA	-99.9 dB	

LAS > 65.0 dB (Exceedance Counts / Duration)	6	11.6 s
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LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	Ldn':00-23:00 3:00-07:00			Lden
	52.1	52.1	-99.9	52.1
LCeq	65.0 dB			
LAeq	52.1 dB			
LCeq - LAeq	12.9 dB			
LAeq	61.6 dB			
LAeq	52.1 dB			
LAeq - LAeq	9.5 dB			
# Overloads	0			
Overload Duration	0.0 s			
# OBA Overloads	0			
OBA Overload Duration	0.0 s			

Statistics	
LAS5.00	55.0 dB
LAS10.00	53.4 dB
LAS33.30	49.1 dB
LAS50.00	47.1 dB
LAS66.60	45.8 dB
LAS90.00	43.9 dB

Calibration History

Preamp	Date re. 1V/Pa		6.3
PRM831	2015-09-10 15:32:49	-25.6	73.9
PRM831	2015-08-14 17:54:36	-26.3	36.4
PRM831	2015-08-05 20:29:18	-24.7	64.2
PRM831	2015-07-24 14:47:10	-25.6	60.9
PRM831	2015-05-05 14:56:20	-25.8	61.2
PRM831	2015-04-22 8:42:55	-26.3	58.2
PRM831	2015-04-17 11:29:03	-26.3	21.3
PRM831	2015-04-17 9:59:48	-26.0	30.6
PRM831	2015-04-17 8:00:28	-26.0	9.4
PRM831	2061-08-11 15:40:00	-26.0	44.2
PRM831	2014-10-15 14:30:38	-26.0	72.4

File Translated: Z:\Vista Env\2007\070801 - Orange-SullyMiller\Noise\Noise Measurements\Pool\Pool.slm1
 Model/Serial Number: 824 / A3176
 Firmware/Software Revs: 4.283 / 3.120
 Name: Vista Environmental
 Descr1: 1021 Didrikson Way
 Descr2: Laguna Beach, CA 92651
 Setup/Setup Descr: slm&rt.a.ssa / SLM & Real-Time Analyzer
 Location: Laguna Beach High School Pool
 Note1: 15' southeast of pool approximately 50 people in pool area
 Note2: outside of wrought iron fence

Overall Any Data

Start Time: 29-Jul-2009 14:27:25
 Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	66.6 dBA	68.9 dBC	69.4 dBF
SEL:	94.4 dBA	96.7 dBC	97.2 dBF
Peak:	102.2 dBA	103.5 dBC	103.5 dBF
29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmax (slow):	77.3 dBA	77.1 dBC	77.1 dBF
29-Jul-2009 14:35:38	29-Jul-2009 14:27:26	29-Jul-2009 14:27:26	29-Jul-2009 14:27:26
Lmin (slow):	60.5 dBA	65.1 dBC	65.5 dBF
29-Jul-2009 14:30:48	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59
Lmax (fast):	82.5 dBA	81.1 dBC	81.5 dBF
29-Jul-2009 14:35:38	29-Jul-2009 14:35:38	29-Jul-2009 14:35:38	29-Jul-2009 14:35:38
Lmin (fast):	57.9 dBA	63.7 dBC	64.3 dBF
29-Jul-2009 14:31:15	29-Jul-2009 14:27:39	29-Jul-2009 14:27:39	29-Jul-2009 14:27:39
Lmax (impulse):	84.0 dBA	85.1 dBC	85.1 dBF
29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmin (impulse):	60.8 dBA	65.1 dBC	65.5 dBF
29-Jul-2009 14:30:48	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59	29-Jul-2009 14:31:59

Spectra

Date: 29-Jul-2009 Time: 14:27:25 Run Time: 00:10:00.6

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	53.4		55.1		30.1		630	56.9		58.5		46.3	
16.0	53.2	58.3	55.5	62.1	34.1	38.6	800	58.6		63.6		48.1	
20.0	53.9		59.7		35.7		1000	59.4	63.7	61.4	70.3	46.9	51.8
25.0	52.0		54.5		36.2		1250	58.7		68.5		45.8	
31.5	54.0	58.6	66.8	68.4	37.7	43.4	1600	57.2		62.8		47.0	
40.0	55.0		62.6		40.7		2000	55.2	60.3	64.7	76.3	45.2	50.1
50.0	55.4		65.5		43.7		2500	53.3		75.8		42.8	
63.0	56.3	59.9	60.0	67.1	44.1	47.9	3150	50.2		72.3		41.7	
80.0	53.0		57.8		41.2		4000	47.2	52.6	52.6	72.4	39.2	44.4
100	54.3		54.1		39.3		5000	43.8		56.0		36.4	
125	60.9	62.0	60.7	62.2	55.1	55.3	6300	39.7		50.4		32.7	
160	49.5		53.6		38.4		8000	36.4	42.0	41.5	51.1	29.8	35.1
200	49.1		56.0		40.8		10000	33.3		37.3		26.3	
250	49.9	54.7	57.2	62.0	41.8	46.5	12500	30.2		34.6		23.3	
315	50.6		58.1		42.5		16000	26.8	32.4	32.3	37.0	20.8	26.5
400	53.5		61.8		46.5		20000	23.4		26.8		20.7	
500	56.1	60.5	62.6	66.1	47.0	51.4							

Ln Start Level: 15 dB
 L1.00 0.0 dBA L50.00 0.0 dBA L95.00 0.0 dBA
 L5.00 0.0 dBA L90.00 0.0 dBA L99.00 0.0 dBA

Detector: Slow
 Weighting: A
 SPL Exceedance Level 1: 85.0 dB Exceeded: 0 times
 SPL Exceedance level 2: 120 dB Exceeded: 0 times
 Peak-1 Exceedance Level: 105 dB Exceeded: 0 times
 Peak-2 Exceedance Level: 100 dB Exceeded: 1 times
 Hysteresis: 2
 Overloaded: 0 time(s)
 Paused: 0 times for 00:00:00.0

File Translated: Z:\Vista Env\2007\070801 - Orange-SullyMiller\Noise\Noise Measurements\Pool\Pool.slm1
Model/Serial Number: 824 / A3176

Current Any Data

Start Time: 29-Jul-2009 14:27:25
Elapsed Time: 00:10:00.6

	A Weight	C Weight	Flat
Leq:	66.6 dBA	68.9 dBC	69.4 dBF
SEL:	94.4 dBA	96.7 dBC	97.2 dBF
Peak:	102.2 dBA	103.5 dBC	103.5 dBF
29-Jul-2009 14:29:27		29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmax (slow):	77.3 dBA	77.1 dBC	77.1 dBF
29-Jul-2009 14:35:38		29-Jul-2009 14:27:26	29-Jul-2009 14:27:26
Lmin (slow):	60.5 dBA	65.1 dBC	65.5 dBF
29-Jul-2009 14:30:48		29-Jul-2009 14:31:59	29-Jul-2009 14:31:59
Lmax (fast):	82.5 dBA	81.1 dBC	81.5 dBF
29-Jul-2009 14:35:38		29-Jul-2009 14:35:38	29-Jul-2009 14:35:38
Lmin (fast):	57.9 dBA	63.7 dBC	64.3 dBF
29-Jul-2009 14:31:15		29-Jul-2009 14:27:39	29-Jul-2009 14:27:39
Lmax (impulse):	84.0 dBA	85.1 dBC	85.1 dBF
29-Jul-2009 14:29:27		29-Jul-2009 14:29:27	29-Jul-2009 14:29:27
Lmin (impulse):	60.8 dBA	65.1 dBC	65.5 dBF
29-Jul-2009 14:30:48		29-Jul-2009 14:31:59	29-Jul-2009 14:31:59

Calibrated:	29-Jul-2009 14:25:33	Offset:	-48.0 dB
Checked:	29-Jul-2009 14:25:33	Level:	94.0 dB
Calibrator	not set	Level:	94.0 dB
Cal Records Count:	1		

Interval Records:	Disabled	Number Interval Records:	0
History Records:	Disabled	Number History Records:	0
Run/Stop Records:		Number Run/Stop Records:	2

Onsite Activity Areas Noise Calculations - Nearest Home to Each Use

Stationary Noise Sources	Reference		Proposed Homes	
	Distance	Leq	Distance	Leq
Tot Lot	5	66.6	75	43
Soccer Field	5	58.9	60	37
Shade Structures	30	58.7	35	57
Tennis/Pickle Ball Courts	14	63.6	50	53
Parking Lot	5	52.1	45	33
Recreation Center	15	66.6	15	67
Combined Noise Levels				67

1 (Line Source: hard=0, soft=-.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Without		With Wall		Exterior Observer Height (feet)	Source Height (feet)	Barrier to receiver - b (all)	path difference			line of sight (slope)	Barrier Atten
			Height of Wall (feet)	Level at Residence	Noise Level at Residence	Noise Level at Residence				source to barrier - a	source to receiver - c	y =a+b-c (auto)		
Tot Lot	10	75	6	43	36	31	5	3	10.050	75.060	85.024	0.086	1	0.246
Soccer Field	10	60	6	37	31	51	5	5	10.050	60.008	70.000	0.058	1	0.166
Shade Structures	10	35	6	57	51	46	5	5	10.050	35.014	45.000	0.064	1	0.182
Tennis/Pickle Ball C	10	50	6	53	46	25	5	5	10.050	50.010	60.000	0.060	1	0.170
Parking Lot	10	45	6	33	25	60	5	3	10.050	45.100	55.036	0.113	1	0.323
Recreation Center	10	15	6	67	60		5	5	10.050	15.033	25.000	0.083	1	0.237

Combined Noise Levels With Sound Walls 60