Appendix L

Environmental Noise Assessment

Environmental Noise Assessment

Scotts Valley Development Project

City of Vallejo, California

June 27, 2024

Project #240210

Prepared for:

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INTRODUCTION

The Scotts Valley Development project is located in the City of Vallejo, California.

The proposed project would consist of an eight-story casino that is proposed to have 238,266 square feet of gaming floor area and ballroom/event space that could accommodate a maximum of 2,500 guests. It would also include 24 single family Tribal residences, and a 12,555 square foot Tribal administration building. Two alternatives to the project have also been studied. Alternative B is a Reduced Intensity Alternative which consists of the same casino project but without the Tribal Housing and Offices. Alternative C is a Non-Gaming Alternative that would involve construction of 50 single family homes and three Tribal administration buildings with a total of 23,353 square feet of building space. This alternative would also include two commercial buildings with a total of 129,702 square feet of building space and two hotel buildings with a total of 264 hotel rooms.

Figure 1a-c shows the project site plans. **Figure 2** shows an aerial photo of the project site.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

SCOTTS VALLEY, VALLEJO, CA | Site Plan Scheme 4 With residential

10, June 2024

Steelman Partners℠

Scotts Valley Casino and Residential

City of Vallejo, California

Figure 1a

Scenario A Site Plan

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SCOTTS VALLEY, VALLEJO, CA | Site Plan Scheme 4 Without residential

10, June 2024

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Scotts Valley Casino and Residential

City of Vallejo, California

Figure 1b

Scenario B Site Plan

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SCOTTS VALLEY VALLEJO, CA | MASTER PLAN Scheme 1 | May 24, 2024 | Steelman Partners™

Scotts Valley Casino and Residential

City of Vallejo, California

Figure 1c

Scenario C Site Plan

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Scotts Valley Development Project

City of Vallejo, California

Figure 2

Noise Measurement Sites

Legend

Project Site

Noise Measurement - Long Term

0 ft | 500 ft | 1000 ft | 1750 ft

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 06/10/2024

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The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regards to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses.

The existing noise environment in the project area is primarily defined by traffic on I-80. To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at four locations on the project site. Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Location	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1	4/5/24	74	70	70	77	67	66	74
	4/6/24	72	68	68	79	65	64	74
	4/7/24	69	67	67	79	62	61	73
LT-2	4/5/24	62	58	56	67	55	54	65
	4/6/24	62	59	57	70	56	55	68
	4/7/24	59	57	55	67	52	52	65
LT-3	4/5/24	73	71	70	83	66	59	80
	4/6/24	73	72	70	89	64	59	80
	4/7/24	71	70	68	88	62	56	79
LT-4	4/5/24	67	63	61	72	61	59	69
	4/6/24	63	57	56	71	57	55	69
	4/7/24	61	57	56	69	55	54	67

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics, 2024.*

FUTURE TRAFFIC NOISE ENVIRONMENT AT OFF-SITE RECEPTORS

OFF-SITE TRAFFIC NOISE IMPACT ASSESSMENT METHODOLOGY

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors for existing and future, project and no-project conditions.

Existing and Cumulative noise levels due to traffic are calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn}, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the project traffic engineer (Abrams Associates, 2024), truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing and Cumulative conditions which would result from the project are provided in terms of L_{dn}.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations sensitive receptors may not receive full shielding from noise barriers or may be located at distances which vary from the assumed calculation distance.

Tables 3-7 summarize the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area. **Appendix C** provides the complete inputs and results of the FHWA traffic modeling.

TABLE 3: PREDICTED TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Existing no Project	Existing + Project	Change
Auto Mall Parkway	East of Project Access	47.4	47.7	0.3
Auto Mall Parkway	West of Project Access	53.5	54.1	0.6
N Ascot Parkway	South of Auto Mall Parkway	53.7	53.9	0.2
Auto Mall Parkway	East of Ascot Court	44.7	45.0	0.3
Columbus Parkway	West of Redwood Parkway	55.9	54.1	-1.8
Columbus Parkway	East of Redwood Parkway	56.5	57.0	0.5
Redwood Parkway	South of Columbus Parkway	51.6	51.2	-0.4
Admiral Callaghan Lane	East of Autoclub way	48.5	48.8	0.3
Plaza Drive	South of Admiral Callaghan Lane	50.7	50.8	0.1
Turner Parkway	East of Admiral Callaghan Lane	63.3	63.4	0.1
Admiral Callaghan Lane	South of Turner Parkway	57.8	58.2	0.4
Turner Parkway	East of Plaza Drive	56.1	56.2	0.1
Redwood Parkway	West of Ascot Parkway	59.7	59.8	0.1
Oakwood Avenue	South of Redwood Parkway	57.7	57.6	-0.1

TABLE 4: BASELINE TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Baseline no Project	Baseline + Project	Change
Auto Mall Parkway	East of Project Access	48.1	48.4	0.3
Auto Mall Parkway	West of Project Access	54.1	54.7	0.6
N Ascot Parkway	South of Auto Mall Parkway	54.1	54.3	0.2
Auto Mall Parkway	East of Ascot Court	45.2	45.5	0.3
Columbus Parkway	West of Redwood Parkway	56.4	56.7	0.3
Columbus Parkway	East of Redwood Parkway	57.2	57.6	0.4
Redwood Parkway	South of Columbus Parkway	51.7	51.7	0.0
Admiral Callaghan Lane	East of Autoclub way	48.9	49.2	0.3
Plaza Drive	South of Admiral Callaghan Lane	50.8	51.0	0.2
Turner Parkway	East of Admiral Callaghan Lane	63.6	63.7	0.1
Admiral Callaghan Lane	South of Turner Parkway	58.3	58.6	0.3
Turner Parkway	East of Plaza Drive	56.3	56.4	0.1
Redwood Parkway	West of Ascot Parkway	60.0	60.1	0.1
Oakwood Avenue	South of Redwood Parkway	57.8	57.9	0.1

TABLE 5: CUMULATIVE SCENARIO A TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Cumulative no Project	Cumulative + Project	Change
Auto Mall Parkway	East of Project Access	48.8	48.6	-0.2
Auto Mall Parkway	West of Project Access	54.8	55.0	0.2
N Ascot Parkway	South of Auto Mall Parkway	54.8	55.0	0.2
Auto Mall Parkway	East of Ascot Court	45.9	46.2	0.3
Columbus Parkway	West of Redwood Parkway	57.1	57.4	0.3
Columbus Parkway	East of Redwood Parkway	57.9	58.2	0.3
Redwood Parkway	South of Columbus Parkway	52.5	52.5	0.0
Admiral Callaghan Lane	East of Autoclub way	49.5	49.7	0.2
Plaza Drive	South of Admiral Callaghan Lane	50.8	51.0	0.2
Turner Parkway	East of Admiral Callaghan Lane	64.3	64.4	0.1
Admiral Callaghan Lane	South of Turner Parkway	59.0	59.3	0.3
Turner Parkway	East of Plaza Drive	57.1	57.1	0.0
Redwood Parkway	West of Ascot Parkway	60.7	60.8	0.1
Oakwood Avenue	South of Redwood Parkway	58.5	59.4	0.9

TABLE 6: CUMULATIVE SCENARIO B TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Cumulative no Project	Cumulative + Project	Change
Auto Mall Parkway	East of Project Access	48.8	49.0	0.2
Auto Mall Parkway	West of Project Access	54.8	55.3	0.5
N Ascot Parkway	South of Auto Mall Parkway	54.8	55.0	0.2
Auto Mall Parkway	East of Ascot Court	45.9	46.1	0.2
Columbus Parkway	West of Redwood Parkway	57.1	57.4	0.3
Columbus Parkway	East of Redwood Parkway	57.9	58.2	0.3
Redwood Parkway	South of Columbus Parkway	52.5	52.5	0.0
Admiral Callaghan Lane	East of Autoclub way	49.5	49.7	0.2
Plaza Drive	South of Admiral Callaghan Lane	50.8	51.0	0.2
Turner Parkway	East of Admiral Callaghan Lane	64.3	64.4	0.1
Admiral Callaghan Lane	South of Turner Parkway	59.0	59.3	0.3
Turner Parkway	East of Plaza Drive	57.1	57.1	0.0
Redwood Parkway	West of Ascot Parkway	60.7	60.8	0.1
Oakwood Avenue	South of Redwood Parkway	58.5	58.6	0.1

TABLE 7: CUMULATIVE SCENARIO C TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Cumulative no Project	Cumulative + Project	Change
Auto Mall Parkway	East of Project Access	48.8	49.0	0.2
Auto Mall Parkway	West of Project Access	54.8	55.1	0.3
N Ascot Parkway	South of Auto Mall Parkway	54.8	54.9	0.1
Auto Mall Parkway	East of Ascot Court	45.9	46.1	0.2
Columbus Parkway	West of Redwood Parkway	57.1	57.3	0.2
Columbus Parkway	East of Redwood Parkway	57.9	58.1	0.2
Redwood Parkway	South of Columbus Parkway	52.5	52.5	0.0
Admiral Callaghan Lane	East of Autoclub way	49.5	49.6	0.1
Plaza Drive	South of Admiral Callaghan Lane	50.8	50.9	0.1
Turner Parkway	East of Admiral Callaghan Lane	64.3	64.4	0.1
Admiral Callaghan Lane	South of Turner Parkway	59.0	59.3	0.3
Turner Parkway	East of Plaza Drive	57.1	57.1	0.0
Redwood Parkway	West of Ascot Parkway	60.7	60.8	0.1
Oakwood Avenue	South of Redwood Parkway	58.5	58.6	0.1

Based upon the **Tables 3-7** data, the proposed project is predicted to result in an increase in a maximum traffic noise level increase of 0.6 dBA.

EVALUATION OF PROJECT OPERATIONAL NOISE ON EXISTING SENSITIVE RECEPTORS

Project site traffic circulation and HVAC noise are considered to be the primary noise sources for this project. The following is a list of assumptions used for the noise modeling. The data used is based upon a combination of manufacturer's provided data and Saxelby Acoustics data from similar operations.

On-Site Circulation:	The project is projected to generate 8,551 daily trips with 740 trips in the evening peak hour (Abrams Associates). Parking lot movements are predicted to generate a sound exposure level (SEL) of 71 dBA SEL at 50 feet for cars and 85 dBA SEL at 50 feet for trucks. Saxelby Acoustics data.
Casino HVAC:	Assumes ten ten-ton HVAC units servicing the proposed casino. The units were assumed to have a sound level rating of 100 dBA. Steady state HVAC noise does not fluctuate greatly, so exceedances of the City's maximum noise level standard are not predicted to occur. Manufacturer's data.
Residential HVAC:	Assumes a single three-ton HVAC unit for each residential unit. The units were assumed to have a sound level rating of 70 dBA (manufacturer's data). Steady state HVAC noise does not fluctuate greatly, so exceedances of the City's maximum noise level standard are not predicted to occur.

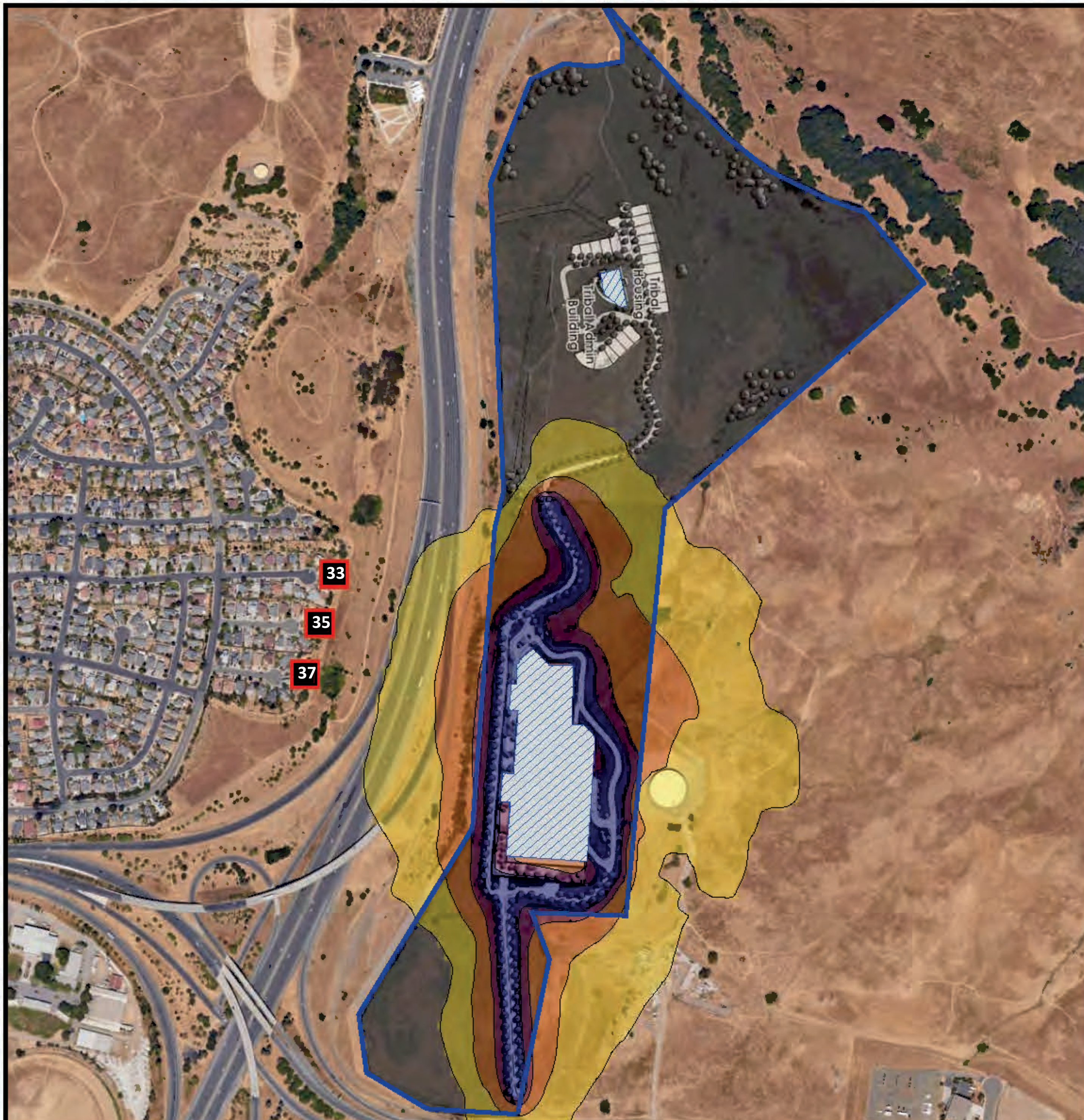
Saxelby Acoustics used the SoundPLAN noise prediction model. Inputs to the model included sound power levels for the proposed amenities, existing and proposed buildings, terrain type, and locations of sensitive receptors. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). ISO 9613 is the most commonly used method for calculating exterior noise propagation. **Figures 3-5** shows the noise level contours resulting from operation of the project.

Scotts Valley Development Project
Scotts Valley Development Project

City of Vallejo, California

Figure 3

Scenario A
Project Operational Noise Contours
Leq,d, dB(A)



Noise Level, dB(A)		
45 <	<=	50
50 <	<=	55
55 <	<=	60
60 <		

Legend

- Project Building
- Existing Building
- Project Site

Scale 1:700

0 100200 400 600 800 feet

N

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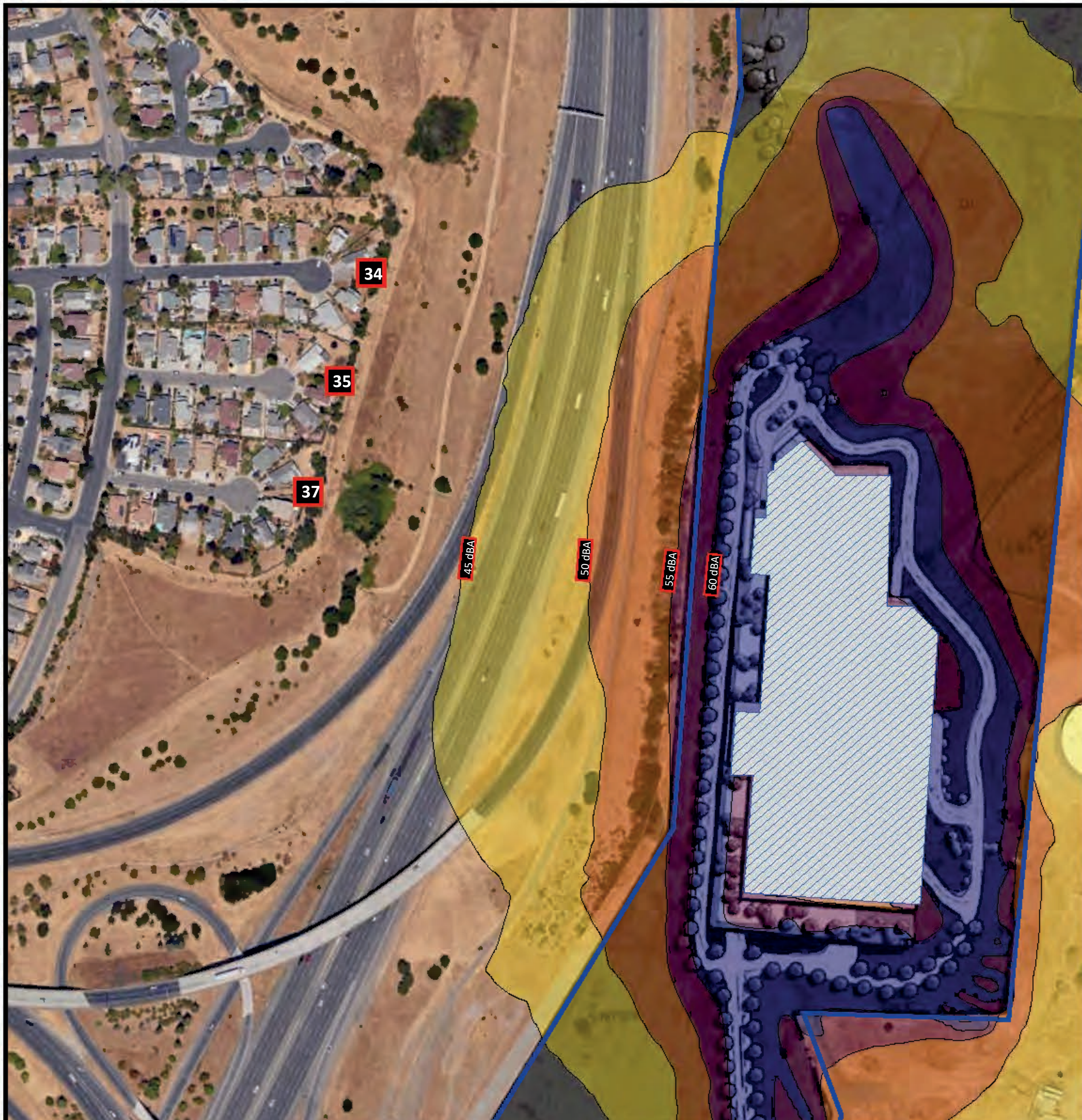

Scotts Valley Development Project
Scotts Valley Development Project

City of Vallejo, California

Figure 4

Scenario B
Project Operational Noise Contours
Leq,d, dB(A)

Noise Level, dB(A)

45 <	<=	50
50 <	<=	55
55 <	<=	60
60 <		

Legend

- Project Building
- Existing Building
- Project Site

Scale 1:320

0 50 100 200 300 400 feet

N

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Scotts Valley Development Project
Scotts Valley Development Project

City of Vallejo, California

Figure 5

Scenario C
Project Operational Noise Contours
Leq,d, dB(A)

Noise Level, dB(A)

45 <	(yellow)	<=	50
50 <	(orange)	<=	55
55 <	(purple)	<=	60
60 <	(dark blue)		

Legend

- Project Building
- Existing Building
- Project Site

Scale 1:700

0 100200 400 600 800 feet

N

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CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed project, noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in **Table 8**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 8: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximum Level, dBA at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 9** shows the typical vibration levels produced by construction equipment.

TABLE 9: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: Transit Noise and Vibration Impact Assessment Guidelines. Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project.

STATE

California Environmental Quality Act

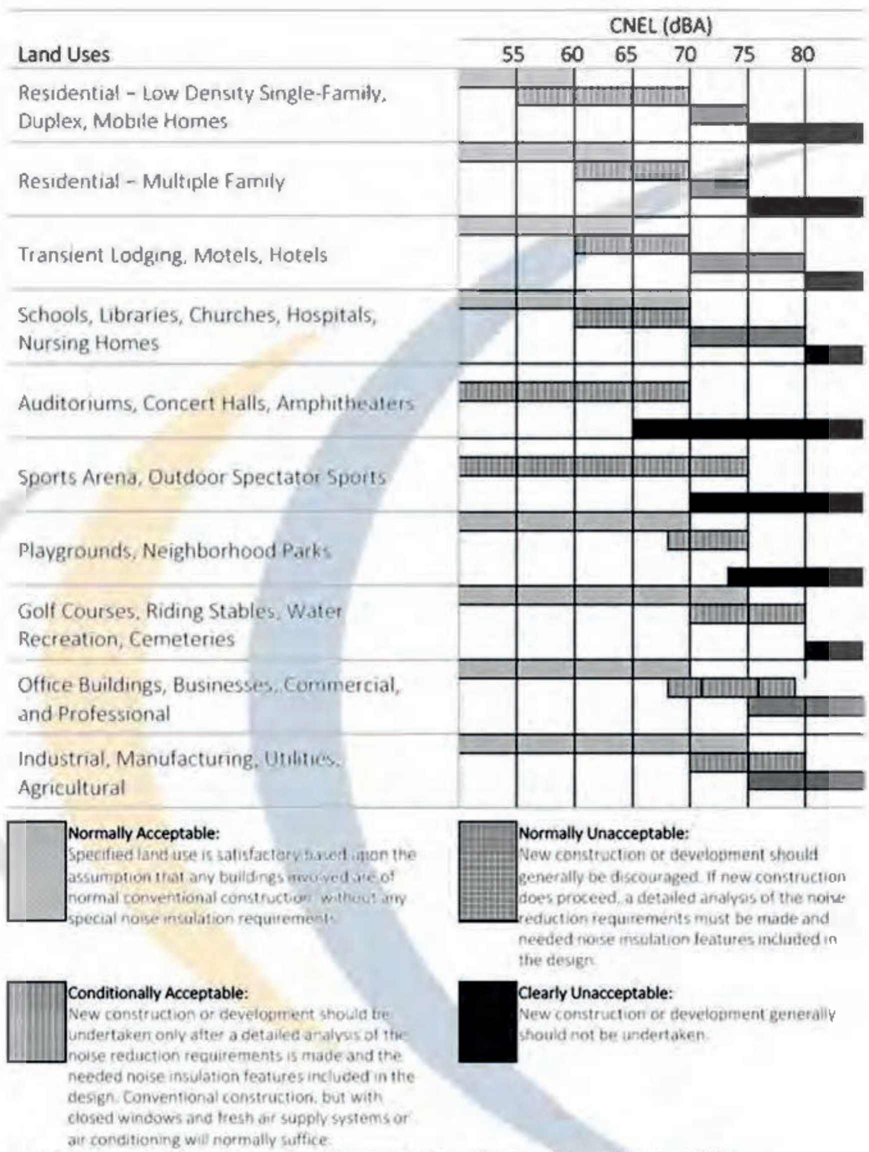
The proposed project is not subject to the requirements of the California Environmental Quality Act (CEQA). However, for context, CEQA requirements are discussed in this report. The 2024 CEQA Statute & Guidelines Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed in more detail under the Thresholds of Significance section.

LOCAL

The proposed project is not subject to the requirements of the City of Vallejo. However, for context the City's noise standards are reviewed in this report.

City of Vallejo General Plan

TABLE 10: CALIFORNIA LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



Source: Governor's Office of Planning and Research, General Plan Guidelines, November 2003

Action NBE-5.13C Update City regulations to restrict the allowable hours to between 7 AM and 7 PM on weekdays for construction, demolition, maintenance, and loading/unloading activities that may impact noise-sensitive land uses.

Action NBE-5.14A	Update City regulations to establish quantified vibration level limits similar to commonly used guidelines found in the Federal Transit Administration document "Transit Noise and Vibration Impact Assessment" (2006).
Action NBE-5.15A	For new single-family residential projects, use a standard of 60 L_{dn} for exterior noise in private use areas, and require appropriate impact mitigation.
Action NBE-5.15B	For new multi-family residential projects, use a standard of 65 L_{dn} in outdoor areas, excluding balconies, and require appropriate impact mitigation.
Action NBE-5.15C	For new mixed-use projects that include a residential component, use a standard of 65 L_{dn} in outdoor areas, excluding balconies, and require the design to minimize commercial noise intrusion into residential areas, including by separating residential areas from noise-generating sources such as mechanical equipment, entertainment facilities, gathering places, loading bays, parking lots, driveways, and trash enclosures to the extent reasonably feasible.
Action NBE-5.15D	Require maximum interior noise levels at 45 L_{dn} in all new residential units, and require appropriate impact mitigation.
Action NBE-5.15E	When approving new development, limit project-related noise increases to the following for permanent stationary and transportation-related noise sources: • no more than 10 dB in non-residential areas; • no more than 5 dB in residential areas where the with project noise level is less than the maximum "normally acceptable" level in the Noise and Land Use Compatibility figure; and • no more than 3 dB where the with-project noise level exceeds the "normally acceptable" level in Noise and Land Use Compatibility figure.

City of Vallejo Municipal Code: 16.502.09 - Noise.

2. Noise standards. Table 16.502-C (**Table 11**) classifies uses and facilities and establishes exterior and interior noise standards applicable to all uses and facilities in each classification that is not exempt from these requirements pursuant to Subsection B. The requirements impose limits on regularly occurring noise for the specified time periods, averaged over an hour, and do not apply to incidental, infrequent, or unexpected noise, which are subject to Vallejo Municipal Code Chapter 7.84, Regulations of Noise Disturbances. The prohibitions contained in Municipal Code Chapter 7.84, apply to all land uses and activities in the city, and, in the case of a conflict, the more restrictive provisions apply.

TABLE 11: MAXIMUM NOISE LEVEL BY NOISE ZONE, L_{EQ}

Noise Zoning District	Maximum Noise Level in dBA (level not exceeded more than 30 minutes in any hour)		Maximum Noise Level in dBA (level not to be exceeded more than 5 minutes in any hour)
	Measured at Property Line or District Boundary	Measured at Any Boundary of a Residential Zone	Between 10 PM and 7AM, Measured at Any Boundary of a Residential Zone
Single-Unit Residential	60	60	-
Multiple-Unit Residential	65	65	-
Commercial and Mixed-Use, Medical, Office	70	60	50 or ambient noise level
Light Industrial	75	65	50 or ambient noise level
General Industrial	75	65	50 or ambient noise level
Public Facilities and Community Use	65	60	50 or ambient noise level
Open Space and Recreational Districts	65	60	50 or ambient noise level

CRITERIA FOR ACCEPTABLE VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 12**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 12 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 12: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Transportation Related Earthborne Vibrations. Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

There are no specific Federal thresholds applicable to the proposed project. However, as discussed earlier CEQA guidance and review of local noise standards are considered in this report for context. Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. In addition to CEQA guidance, increased criteria from the Federal Interagency Committee on Noise (FICON) are also considered, as discussed below. Specific CEQA thresholds include the following:

Would the project:

a. 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?

b. Generate excessive groundborne vibration or groundborne noise levels?

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

The proposed project is not located within two miles of a public or private airport, therefore item “c” is not discussed any further in this study.

Noise Level Increase Criteria for Long-Term Project-Related Noise Level Increases

The California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it “increases substantially the ambient noise levels for adjoining areas.” Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project noise conditions. **Table 13** is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 13: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON).

Based on the **Table 13** data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the **Table 13** criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Temporary Construction Noise Impacts

There are no specific thresholds for construction noise that are applicable to the proposed project. For context, local and state of California standards are discussed below.

With temporary noise impacts (construction), identification of "substantial increases" depends upon the duration of the impact, the temporal daily nature of the impact, and the absolute change in decibel levels. Per the City of Vallejo General Plan, construction activities operating between 7:00 p.m. and 7:00 a.m. Monday through Friday are exempt from the ordinance.

The City has not adopted any formal standard for evaluating temporary construction noise which occurs within allowable hours. For short-term noise associated with Project construction, Saxelby Acoustics recommends use of the Caltrans increase criteria of 12 dBA (Caltrans Traffic Noise Protocol, 2020), applied to existing residential receptors in the project vicinity. This level of increase is approximately equivalent to a doubling of sound energy and has been the standard of significance for Caltrans projects at the state level for many years. Application of this standard to construction activities is considered reasonable considering the temporary nature of construction activities.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1: ***Would the project 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?***

Traffic Noise Increases at Off-Site Receptors

The FICON guidelines specify criteria to determine the significance of traffic noise impacts. Where existing traffic noise levels are greater than 65 dB L_{dn}, a +1.5 dB L_{dn} increase in roadway noise levels will be considered significant. According to **Tables 3-7**, the maximum increase is traffic noise at the nearest sensitive receptor is predicted to be 0.6 dBA. Therefore, impacts resulting from increased traffic noise would be considered ***less-than-significant***, and no mitigation is required.

Operational Noise at Existing Sensitive Receptors

As shown on **Figures 3-5**, the project is predicted to expose nearby residences to noise levels up to 37 dBA, L_{eq} during both daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. The predicted project noise levels would meet the City of Vallejo noise standard for non-transportation noise sources of 60 dBA, $L_{eq.}$ The predicted noise levels are also well below the measured nighttime noise levels of 54-59 dBA L_{eq} as shown in **Table 2** for site LT-4. Therefore, the project is not predicted to cause a substantial increase in ambient noise levels at the sensitive receptors closest to the project site.

This is a ***less-than-significant*** impact, and no mitigation is required.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. As indicated in **Table 8,** activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. Construction activities would also be temporary in nature and are anticipated to occur during normal daytime working hours.

The City of Vallejo General Plan exempts construction noise from the noise ordinance between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, provided that either no individual piece of equipment shall produce noise levels greater than 83 dBA at 25 feet or noise levels outside the property plane are less than 86 dBA. As shown in **Table 8**, construction equipment that may be used in the development of the project has the potential to exceed 83 dBA at 25 feet. However, the majority of project construction would occur away from the property boundary, therefore limiting noise levels at the property plane to below 86 dBA.

Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels; Saxelby Acoustics used this criterion to evaluate increases due to construction noise associated with the project. As shown in **Table 8**, construction equipment is predicted to generate noise levels of up to 90 dBA L_{max} at 50 feet. Construction noise is evaluated as occurring at the center of the site to represent average noise levels generated over the duration of construction across the project site. The nearest residential uses are located approximately 1,300 feet as measured from the center of the project site. At this distance, maximum construction noise levels would be up to 62 dBA. The average daytime maximum noise levels in the vicinity of the closest sensitive receptors was measured to be 69-72 dBA L_{max}, as shown in **Table 2** for site LT-4. Therefore, project construction would not cause an increase of greater than 12 dBA over existing ambient noise levels.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would occur during daytime hours.

Although construction activities are temporary in nature and would occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting from noise levels temporarily exceeding the threshold of significance due to construction would be considered ***potentially significant***. Recommended measure 1(a) would reduce construction noise impacts to ***less-than-significant*** relative to the thresholds discussed in this report.

Recommended Measures

1(a) The project shall establish the following as conditions of approval for any permit that results in the use of construction equipment:

- Construction shall be limited to between 7 AM and 7 PM on weekdays for construction, demolition, maintenance, and loading/unloading activities that may impact noise-sensitive land uses.
- All construction equipment powered by internal combustion engines shall be properly muffled and maintained.
- Quiet construction equipment, particularly air compressors, are to be selected whenever possible.
- All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- Unnecessary idling of internal combustion engines is prohibited.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Timing/Implementation: Implemented prior to approval of grading and/or building permits

Implementation of recommended measure 1(a) would help to reduce construction-generated noise levels. With mitigation, this impact would be considered ***less-than-significant*** relative to the thresholds discussed in this report.

Impact 2: Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 9** data indicates that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required relative to the thresholds discussed in this report.

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

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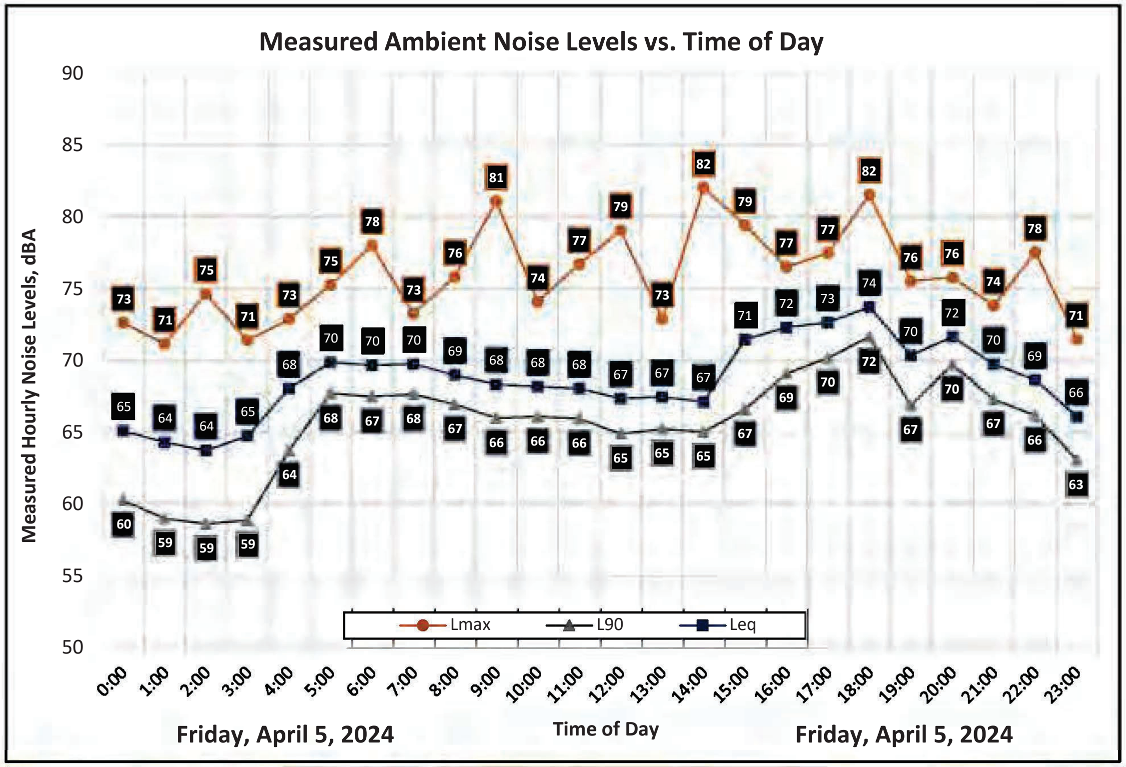
Appendix B: Continuous Ambient Noise Measurement Results

Appendix B1a: Continuous Noise Monitoring Results

Site: LT-1
Project: Scotts Valley Development Project
Meter: LDL 820-1
Location: North West of Project Site
Calibrator: CAL200
Coordinates: (10S 568733 4222872)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, April 5, 2024	0:00	65	73	65	60
Friday, April 5, 2024	1:00	64	71	64	59
Friday, April 5, 2024	2:00	64	75	63	59
Friday, April 5, 2024	3:00	65	71	64	59
Friday, April 5, 2024	4:00	68	73	68	64
Friday, April 5, 2024	5:00	70	75	70	68
Friday, April 5, 2024	6:00	70	78	70	67
Friday, April 5, 2024	7:00	70	73	70	68
Friday, April 5, 2024	8:00	69	76	69	67
Friday, April 5, 2024	9:00	68	81	68	66
Friday, April 5, 2024	10:00	68	74	68	66
Friday, April 5, 2024	11:00	68	77	68	66
Friday, April 5, 2024	12:00	67	79	67	65
Friday, April 5, 2024	13:00	67	73	67	65
Friday, April 5, 2024	14:00	67	82	67	65
Friday, April 5, 2024	15:00	71	79	71	67
Friday, April 5, 2024	16:00	72	77	72	69
Friday, April 5, 2024	17:00	73	77	72	70
Friday, April 5, 2024	18:00	74	82	74	72
Friday, April 5, 2024	19:00	70	76	70	67
Friday, April 5, 2024	20:00	72	76	71	70
Friday, April 5, 2024	21:00	70	74	70	67
Friday, April 5, 2024	22:00	69	78	68	66
Friday, April 5, 2024	23:00	66	71	66	63

Statistics	Leq	Lmax	L50	L90
Day Average	70	77	70	67
Night Average	67	74	66	63
Day Low	67	73	67	65
Day High	74	82	74	72
Night Low	64	71	63	59
Night High	70	78	70	68
Ldn	74	Day %		80
CNEL	74	Night %		20

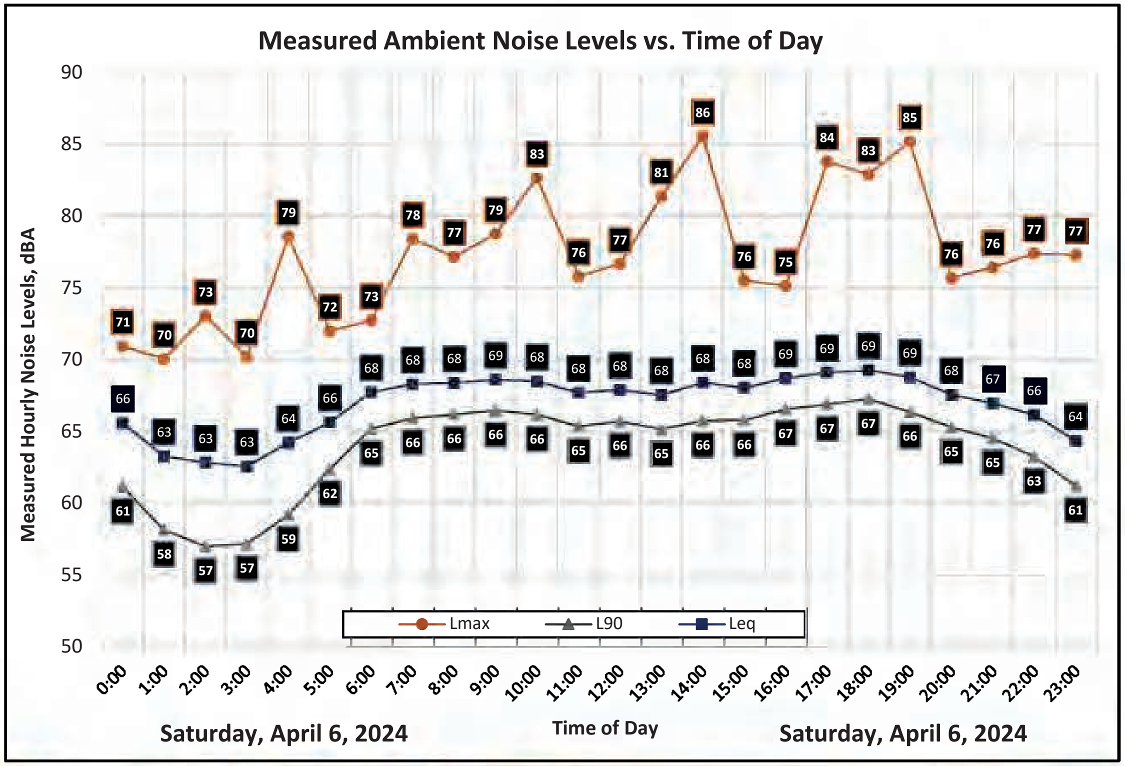


Appendix B1b: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, April 6, 2024	0:00	66	71	65	61
Saturday, April 6, 2024	1:00	63	70	63	58
Saturday, April 6, 2024	2:00	63	73	62	57
Saturday, April 6, 2024	3:00	63	70	62	57
Saturday, April 6, 2024	4:00	64	79	63	59
Saturday, April 6, 2024	5:00	66	72	65	62
Saturday, April 6, 2024	6:00	68	73	68	65
Saturday, April 6, 2024	7:00	68	78	68	66
Saturday, April 6, 2024	8:00	68	77	68	66
Saturday, April 6, 2024	9:00	69	79	68	66
Saturday, April 6, 2024	10:00	68	83	68	66
Saturday, April 6, 2024	11:00	68	76	67	65
Saturday, April 6, 2024	12:00	68	77	68	66
Saturday, April 6, 2024	13:00	68	81	67	65
Saturday, April 6, 2024	14:00	68	86	68	66
Saturday, April 6, 2024	15:00	68	76	68	66
Saturday, April 6, 2024	16:00	69	75	69	67
Saturday, April 6, 2024	17:00	69	84	69	67
Saturday, April 6, 2024	18:00	69	83	69	67
Saturday, April 6, 2024	19:00	69	85	68	66
Saturday, April 6, 2024	20:00	68	76	67	65
Saturday, April 6, 2024	21:00	67	76	67	65
Saturday, April 6, 2024	22:00	66	77	66	63
Saturday, April 6, 2024	23:00	64	77	64	61

Statistics	Leq	Lmax	L50	L90
Day Average	68	79	68	66
Night Average	65	74	64	61
Day Low	67	75	67	65
Day High	69	86	69	67
Night Low	63	70	62	57
Night High	68	79	68	65
Ldn	72	Day %		81
CNEL	72	Night %		19

Site: LT-1
Project: Scotts Valley Development Project
Meter: LDL 820-1
Location: North West of Project Site
Calibrator: CAL200
Coordinates: (10S 568733 4222872)

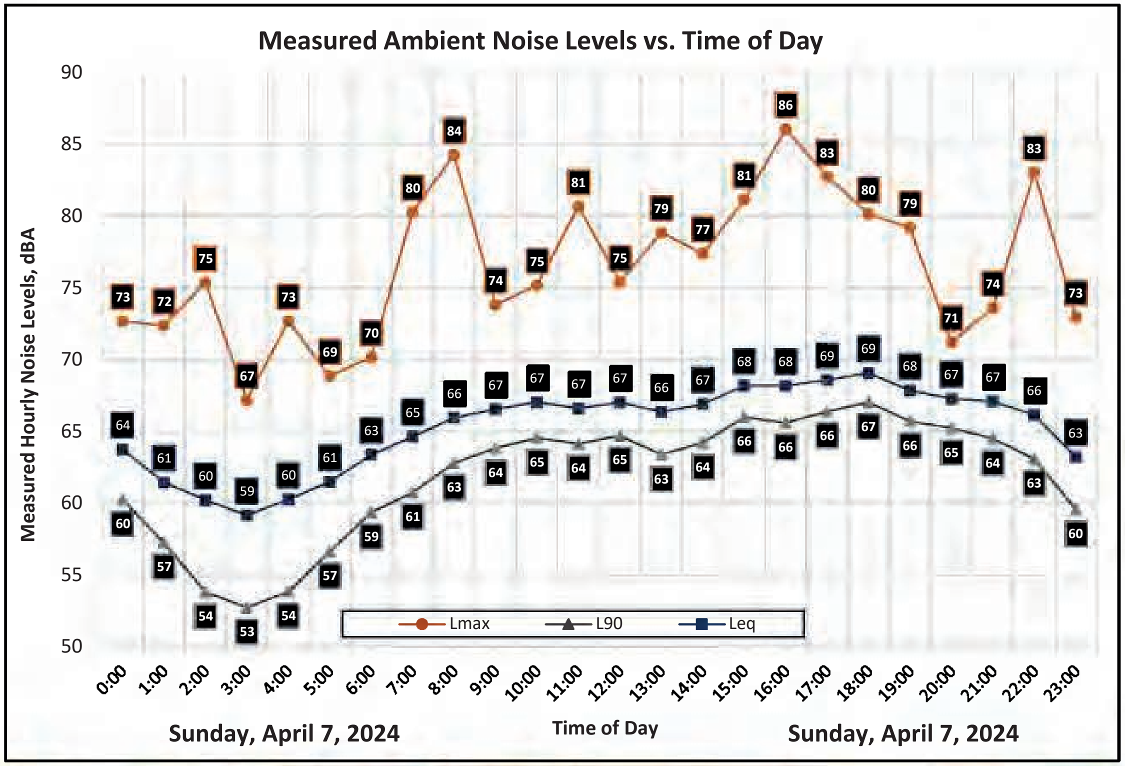


Appendix B1c: Continuous Noise Monitoring Results

Site: LT-1
Project: Scotts Valley Development Project
Meter: LDL 820-1
Location: North West of Project Site
Calibrator: CAL200
Coordinates: (10S 568733 4222872)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, April 7, 2024	0:00	64	73	63	60
Sunday, April 7, 2024	1:00	61	72	61	57
Sunday, April 7, 2024	2:00	60	75	59	54
Sunday, April 7, 2024	3:00	59	67	58	53
Sunday, April 7, 2024	4:00	60	73	59	54
Sunday, April 7, 2024	5:00	61	69	61	57
Sunday, April 7, 2024	6:00	63	70	63	59
Sunday, April 7, 2024	7:00	65	80	64	61
Sunday, April 7, 2024	8:00	66	84	65	63
Sunday, April 7, 2024	9:00	67	74	66	64
Sunday, April 7, 2024	10:00	67	75	67	65
Sunday, April 7, 2024	11:00	67	81	66	64
Sunday, April 7, 2024	12:00	67	75	67	65
Sunday, April 7, 2024	13:00	66	79	66	63
Sunday, April 7, 2024	14:00	67	77	67	64
Sunday, April 7, 2024	15:00	68	81	68	66
Sunday, April 7, 2024	16:00	68	86	67	66
Sunday, April 7, 2024	17:00	69	83	68	66
Sunday, April 7, 2024	18:00	69	80	69	67
Sunday, April 7, 2024	19:00	68	79	68	66
Sunday, April 7, 2024	20:00	67	71	67	65
Sunday, April 7, 2024	21:00	67	74	67	64
Sunday, April 7, 2024	22:00	66	83	66	63
Sunday, April 7, 2024	23:00	63	73	63	60

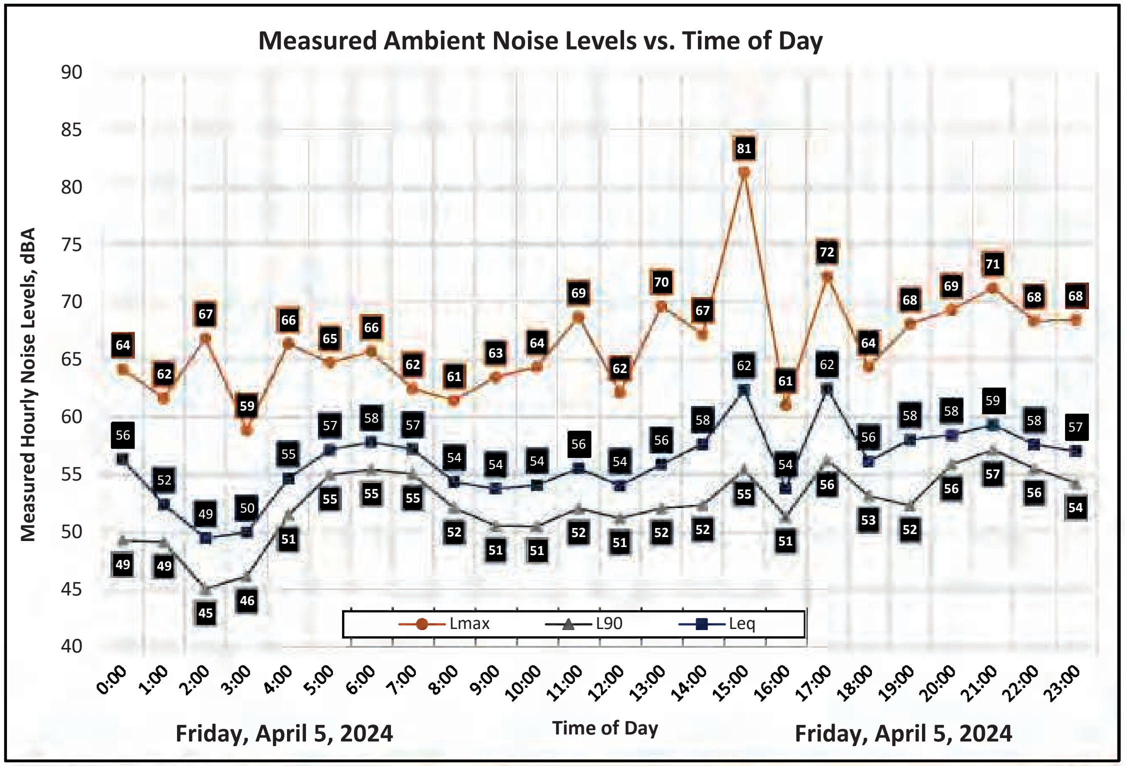
Statistics	Leq	Lmax	L50	L90
Day Average	67	79	67	65
Night Average	62	73	61	57
Day Low	65	71	64	61
Day High	69	86	69	67
Night Low	59	67	58	53
Night High	64	83	66	63
Ldn	69	Day %		87
CNEL	70	Night %		13



Appendix B2a: Continuous Noise Monitoring Results

Site: LT-2
Project: Scotts Valley Development Project
Location: South West of Project Site
Coordinates: (10S 568604 4221742)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, April 5, 2024	0:00	56	64	56	49
Friday, April 5, 2024	1:00	52	62	52	49
Friday, April 5, 2024	2:00	49	67	48	45
Friday, April 5, 2024	3:00	50	59	49	46
Friday, April 5, 2024	4:00	55	66	54	51
Friday, April 5, 2024	5:00	57	65	57	55
Friday, April 5, 2024	6:00	58	66	57	55
Friday, April 5, 2024	7:00	57	62	57	55
Friday, April 5, 2024	8:00	54	61	54	52
Friday, April 5, 2024	9:00	54	63	53	51
Friday, April 5, 2024	10:00	54	64	53	51
Friday, April 5, 2024	11:00	56	69	54	52
Friday, April 5, 2024	12:00	54	62	54	51
Friday, April 5, 2024	13:00	56	70	55	52
Friday, April 5, 2024	14:00	58	67	57	52
Friday, April 5, 2024	15:00	62	81	60	55
Friday, April 5, 2024	16:00	54	61	53	51
Friday, April 5, 2024	17:00	62	72	62	56
Friday, April 5, 2024	18:00	56	64	56	53
Friday, April 5, 2024	19:00	58	68	55	52
Friday, April 5, 2024	20:00	58	69	58	56
Friday, April 5, 2024	21:00	59	71	59	57
Friday, April 5, 2024	22:00	58	68	57	56
Friday, April 5, 2024	23:00	57	68	56	54
	Statistics	Leq	Lmax	L50	L90
	Day Average	58	67	56	53
	Night Average	55	65	54	51
	Day Low	54	61	53	51
	Day High	62	81	62	57
	Night Low	49	59	48	45
	Night High	58	68	57	56
	Ldn	62	Day %		77
	CNEL	62	Night %		23

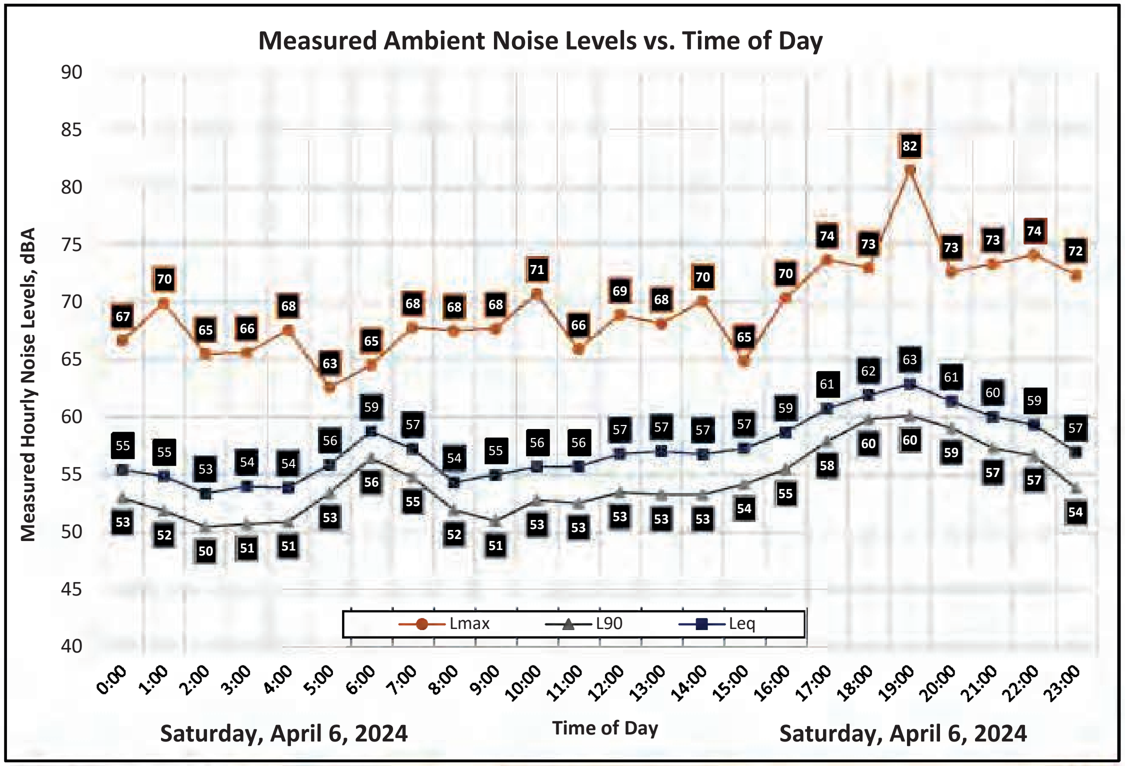


Appendix B2b: Continuous Noise Monitoring Results

Site: LT-2
Project: Scotts Valley Development Project
Location: South West of Project Site
Coordinates: (10S 568604 4221742)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, April 6, 2024	0:00	55	67	55	53
Saturday, April 6, 2024	1:00	55	70	54	52
Saturday, April 6, 2024	2:00	53	65	53	50
Saturday, April 6, 2024	3:00	54	66	53	51
Saturday, April 6, 2024	4:00	54	68	53	51
Saturday, April 6, 2024	5:00	56	63	56	53
Saturday, April 6, 2024	6:00	59	65	58	56
Saturday, April 6, 2024	7:00	57	68	57	55
Saturday, April 6, 2024	8:00	54	68	54	52
Saturday, April 6, 2024	9:00	55	68	54	51
Saturday, April 6, 2024	10:00	56	71	55	53
Saturday, April 6, 2024	11:00	56	66	55	53
Saturday, April 6, 2024	12:00	57	69	56	53
Saturday, April 6, 2024	13:00	57	68	56	53
Saturday, April 6, 2024	14:00	57	70	56	53
Saturday, April 6, 2024	15:00	57	65	57	54
Saturday, April 6, 2024	16:00	59	70	58	55
Saturday, April 6, 2024	17:00	61	74	60	58
Saturday, April 6, 2024	18:00	62	73	62	60
Saturday, April 6, 2024	19:00	63	82	62	60
Saturday, April 6, 2024	20:00	61	73	61	59
Saturday, April 6, 2024	21:00	60	73	59	57
Saturday, April 6, 2024	22:00	59	74	59	57
Saturday, April 6, 2024	23:00	57	72	56	54

Statistics	Leq	Lmax	L50	L90
Day Average	59	70	57	55
Night Average	56	68	55	53
Day Low	54	65	54	51
Day High	63	82	62	60
Night Low	53	63	53	50
Night High	59	74	59	57
Ldn	62	Day %		80
CNEL	63	Night %		20



Appendix B2c: Continuous Noise Monitoring Results

Site: LT-2

Project: Scotts Valley Development Project

Location: South West of Project Site

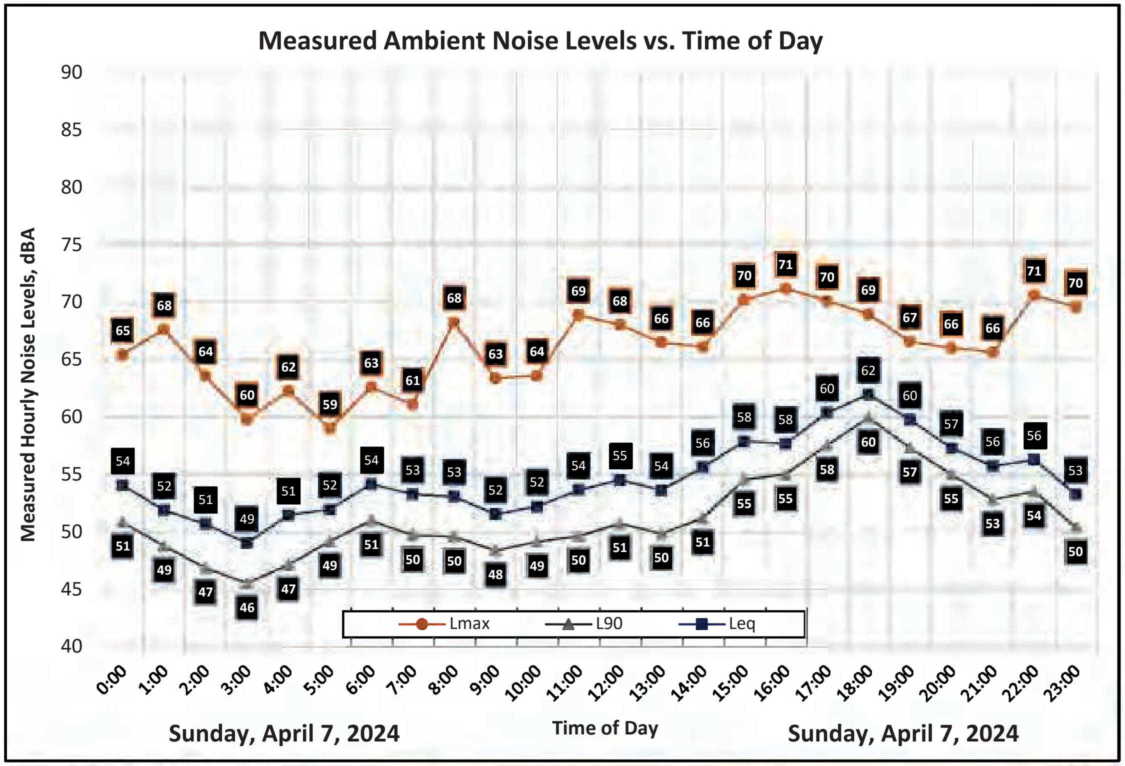
Coordinates: (10S 568604 4221742)

Meter: LDL 820-5

Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, April 7, 2024	0:00	54	65	53	51
Sunday, April 7, 2024	1:00	52	68	51	49
Sunday, April 7, 2024	2:00	51	64	50	47
Sunday, April 7, 2024	3:00	49	60	48	46
Sunday, April 7, 2024	4:00	51	62	50	47
Sunday, April 7, 2024	5:00	52	59	52	49
Sunday, April 7, 2024	6:00	54	63	53	51
Sunday, April 7, 2024	7:00	53	61	53	50
Sunday, April 7, 2024	8:00	53	68	52	50
Sunday, April 7, 2024	9:00	52	63	51	48
Sunday, April 7, 2024	10:00	52	64	51	49
Sunday, April 7, 2024	11:00	54	69	52	50
Sunday, April 7, 2024	12:00	55	68	53	51
Sunday, April 7, 2024	13:00	54	66	53	50
Sunday, April 7, 2024	14:00	56	66	55	51
Sunday, April 7, 2024	15:00	58	70	57	55
Sunday, April 7, 2024	16:00	58	71	57	55
Sunday, April 7, 2024	17:00	60	70	60	58
Sunday, April 7, 2024	18:00	62	69	62	60
Sunday, April 7, 2024	19:00	60	67	59	57
Sunday, April 7, 2024	20:00	57	66	57	55
Sunday, April 7, 2024	21:00	56	66	55	53
Sunday, April 7, 2024	22:00	56	71	55	54
Sunday, April 7, 2024	23:00	53	70	53	50

Statistics	Leq	Lmax	L50	L90
Day Average	57	67	55	53
Night Average	52	65	52	49
Day Low	52	61	51	48
Day High	62	71	62	60
Night Low	49	59	48	46
Night High	54	71	55	54
Ldn	59	Day %		85
CNEL	60	Night %		15

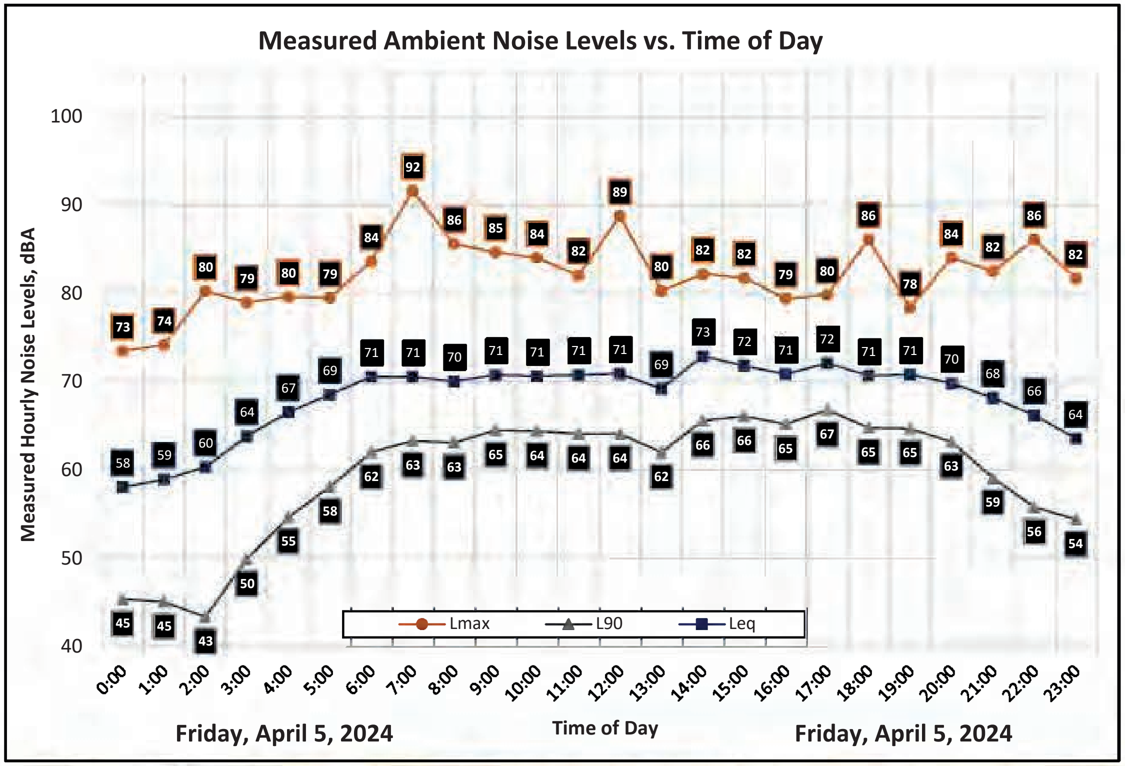


Appendix B3a: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, April 5, 2024	0:00	58	73	49	45
Friday, April 5, 2024	1:00	59	74	50	45
Friday, April 5, 2024	2:00	60	80	50	43
Friday, April 5, 2024	3:00	64	79	58	50
Friday, April 5, 2024	4:00	67	80	64	55
Friday, April 5, 2024	5:00	69	79	66	58
Friday, April 5, 2024	6:00	71	84	69	62
Friday, April 5, 2024	7:00	71	92	69	63
Friday, April 5, 2024	8:00	70	86	69	63
Friday, April 5, 2024	9:00	71	85	70	65
Friday, April 5, 2024	10:00	71	84	70	64
Friday, April 5, 2024	11:00	71	82	70	64
Friday, April 5, 2024	12:00	71	89	70	64
Friday, April 5, 2024	13:00	69	80	68	62
Friday, April 5, 2024	14:00	73	82	72	66
Friday, April 5, 2024	15:00	72	82	71	66
Friday, April 5, 2024	16:00	71	79	70	65
Friday, April 5, 2024	17:00	72	80	72	67
Friday, April 5, 2024	18:00	71	86	70	65
Friday, April 5, 2024	19:00	71	78	70	65
Friday, April 5, 2024	20:00	70	84	69	63
Friday, April 5, 2024	21:00	68	82	67	59
Friday, April 5, 2024	22:00	66	86	64	56
Friday, April 5, 2024	23:00	64	82	60	54

Statistics	Leq	Lmax	L50	L90
Day Average	71	83	70	64
Night Average	66	80	59	52
Day Low	68	78	67	59
Day High	73	92	72	67
Night Low	58	73	49	43
Night High	71	86	69	62
Ldn	73	Day %		86
CNEL	74	Night %		14

Site: LT-3
Project: Scotts Valley Development Project
Meter: LDL 821-1
Location: South Side of Project Site
Calibrator: CAL200
Coordinates: 10S 568693 4221406

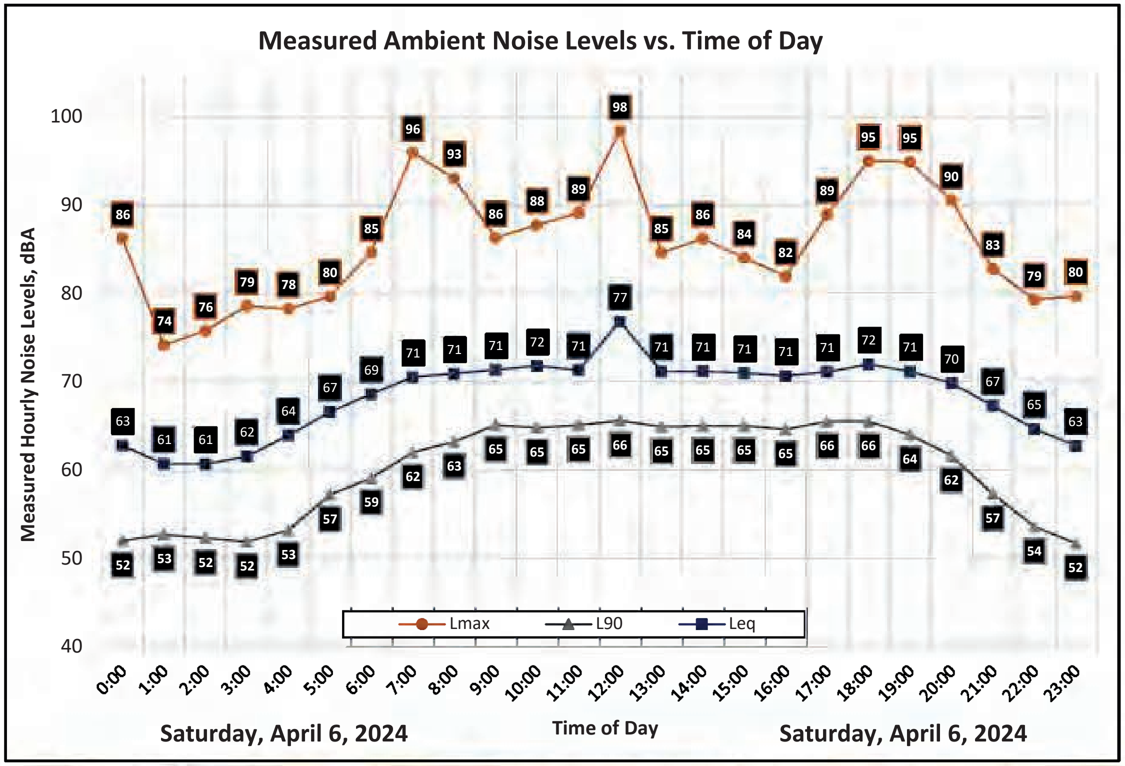


Appendix B3b: Continuous Noise Monitoring Results

Site: LT-3
Project: Scotts Valley Development Project
Meter: LDL 821-1
Location: South Side of Project Site
Calibrator: CAL200
Coordinates: 10S 568693 4221406

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, April 6, 2024	0:00	63	86	56	52
Saturday, April 6, 2024	1:00	61	74	56	53
Saturday, April 6, 2024	2:00	61	76	56	52
Saturday, April 6, 2024	3:00	62	79	56	52
Saturday, April 6, 2024	4:00	64	78	58	53
Saturday, April 6, 2024	5:00	67	80	64	57
Saturday, April 6, 2024	6:00	69	85	67	59
Saturday, April 6, 2024	7:00	71	96	68	62
Saturday, April 6, 2024	8:00	71	93	69	63
Saturday, April 6, 2024	9:00	71	86	70	65
Saturday, April 6, 2024	10:00	72	88	71	65
Saturday, April 6, 2024	11:00	71	89	71	65
Saturday, April 6, 2024	12:00	77	98	71	66
Saturday, April 6, 2024	13:00	71	85	71	65
Saturday, April 6, 2024	14:00	71	86	70	65
Saturday, April 6, 2024	15:00	71	84	70	65
Saturday, April 6, 2024	16:00	71	82	70	65
Saturday, April 6, 2024	17:00	71	89	70	66
Saturday, April 6, 2024	18:00	72	95	71	66
Saturday, April 6, 2024	19:00	71	95	70	64
Saturday, April 6, 2024	20:00	70	90	68	62
Saturday, April 6, 2024	21:00	67	83	65	57
Saturday, April 6, 2024	22:00	65	79	62	54
Saturday, April 6, 2024	23:00	63	80	58	52

Statistics	Leq	Lmax	L50	L90
Day Average	72	89	70	64
Night Average	64	80	59	54
Day Low	67	82	65	57
Day High	77	98	71	66
Night Low	61	74	56	52
Night High	69	86	67	59
Ldn	73	Day %		91
CNEL	73	Night %		9

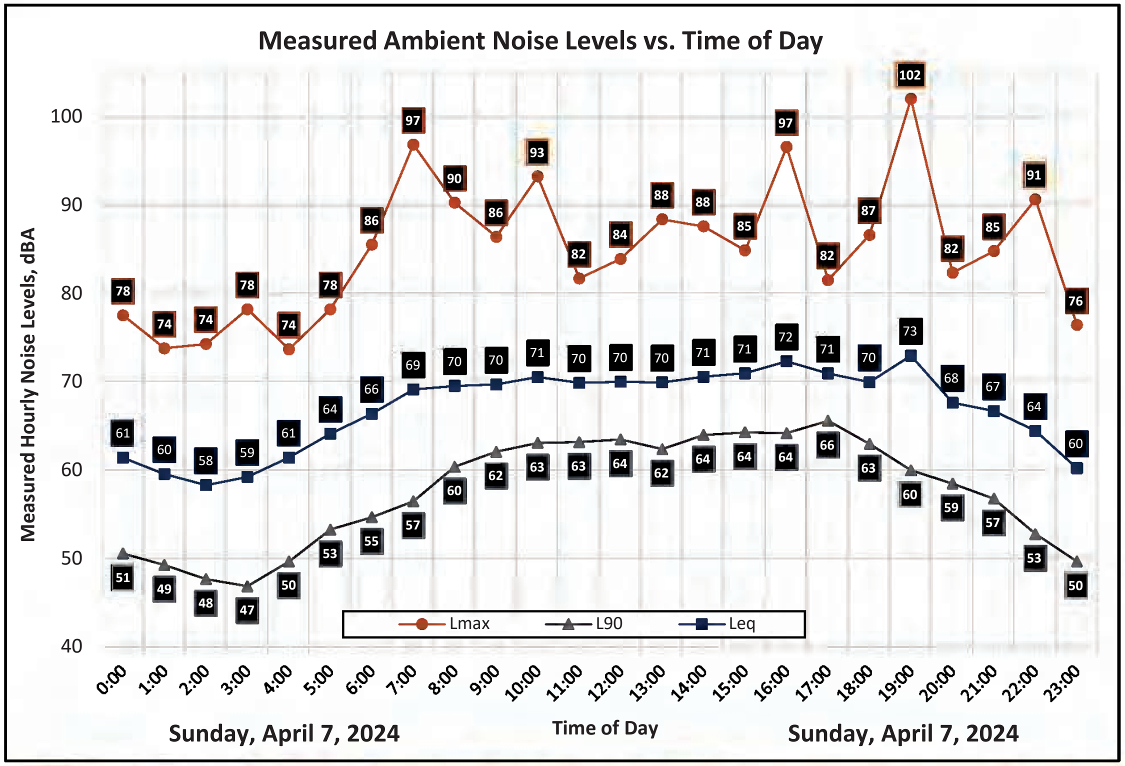


Appendix B3c: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, April 7, 2024	0:00	61	78	56	51
Sunday, April 7, 2024	1:00	60	74	54	49
Sunday, April 7, 2024	2:00	58	74	52	48
Sunday, April 7, 2024	3:00	59	78	51	47
Sunday, April 7, 2024	4:00	61	74	55	50
Sunday, April 7, 2024	5:00	64	78	60	53
Sunday, April 7, 2024	6:00	66	86	63	55
Sunday, April 7, 2024	7:00	69	97	65	57
Sunday, April 7, 2024	8:00	70	90	67	60
Sunday, April 7, 2024	9:00	70	86	68	62
Sunday, April 7, 2024	10:00	71	93	69	63
Sunday, April 7, 2024	11:00	70	82	69	63
Sunday, April 7, 2024	12:00	70	84	70	64
Sunday, April 7, 2024	13:00	70	88	69	62
Sunday, April 7, 2024	14:00	71	88	70	64
Sunday, April 7, 2024	15:00	71	85	70	64
Sunday, April 7, 2024	16:00	72	97	70	64
Sunday, April 7, 2024	17:00	71	82	70	66
Sunday, April 7, 2024	18:00	70	87	69	63
Sunday, April 7, 2024	19:00	73	102	67	60
Sunday, April 7, 2024	20:00	68	82	66	59
Sunday, April 7, 2024	21:00	67	85	64	57
Sunday, April 7, 2024	22:00	64	91	60	53
Sunday, April 7, 2024	23:00	60	76	54	50

Statistics	Leq	Lmax	L50	L90
Day Average	70	88	68	62
Night Average	62	79	56	51
Day Low	67	82	64	57
Day High	73	102	70	66
Night Low	58	74	51	47
Night High	66	91	63	55
Ldn	71	Day %		92
CNEL	72	Night %		8

Site: LT-3
Project: Scotts Valley Development Project
Location: South Side of Project Site
Coordinates: 10S 568693 4221406
Meter: LDL 821-1
Calibrator: CAL200

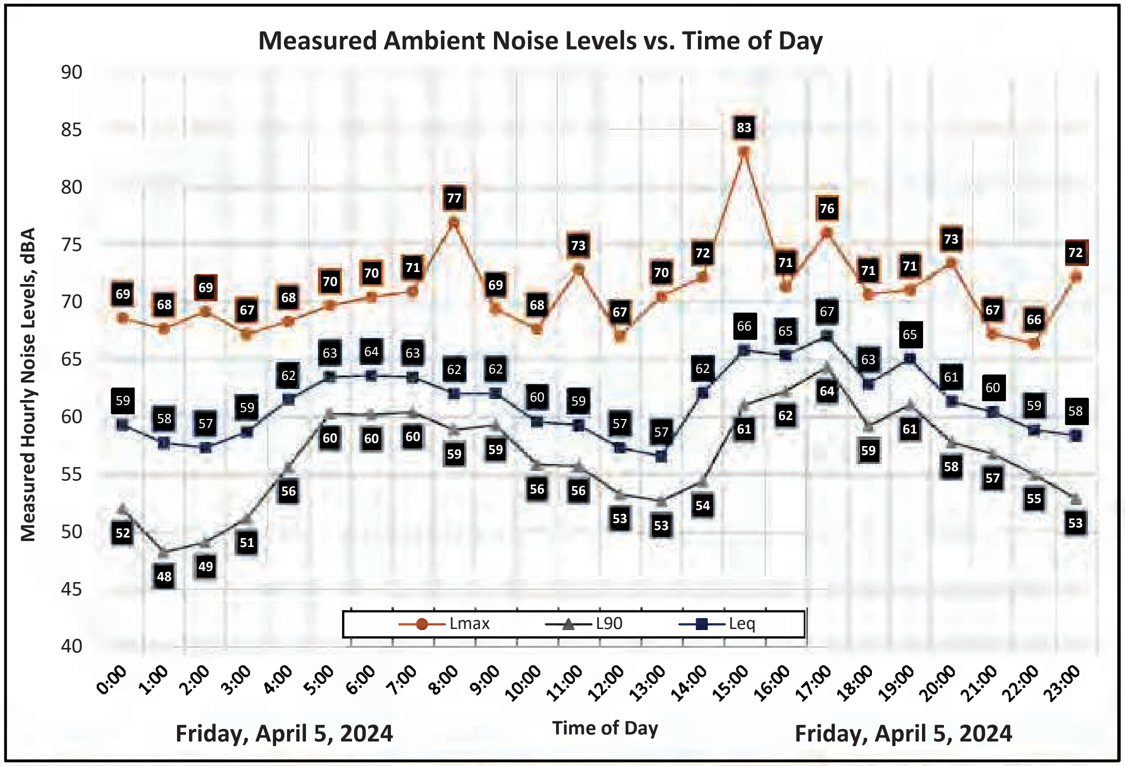


Appendix B3a: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, April 5, 2024	0:00	59	69	58	52
Friday, April 5, 2024	1:00	58	68	56	48
Friday, April 5, 2024	2:00	57	69	55	49
Friday, April 5, 2024	3:00	59	67	57	51
Friday, April 5, 2024	4:00	62	68	61	56
Friday, April 5, 2024	5:00	63	70	63	60
Friday, April 5, 2024	6:00	64	70	63	60
Friday, April 5, 2024	7:00	63	71	63	60
Friday, April 5, 2024	8:00	62	77	61	59
Friday, April 5, 2024	9:00	62	69	62	59
Friday, April 5, 2024	10:00	60	68	59	56
Friday, April 5, 2024	11:00	59	73	59	56
Friday, April 5, 2024	12:00	57	67	57	53
Friday, April 5, 2024	13:00	57	70	56	53
Friday, April 5, 2024	14:00	62	72	62	54
Friday, April 5, 2024	15:00	66	83	65	61
Friday, April 5, 2024	16:00	65	71	65	62
Friday, April 5, 2024	17:00	67	76	67	64
Friday, April 5, 2024	18:00	63	71	62	59
Friday, April 5, 2024	19:00	65	71	65	61
Friday, April 5, 2024	20:00	61	73	61	58
Friday, April 5, 2024	21:00	60	67	60	57
Friday, April 5, 2024	22:00	59	66	58	55
Friday, April 5, 2024	23:00	58	72	58	53

Statistics	Leq	Lmax	L50	L90
Day Average	63	72	61	58
Night Average	61	69	59	54
Day Low	57	67	56	53
Day High	67	83	67	64
Night Low	57	66	55	48
Night High	64	72	63	60
Ldn	67	Day %		76
CNEL	68	Night %		24

Site: LT-4
Project: Scotts Valley Development Project
Meter: LDL 820-8
Location: South of Project Site
Calibrator: CAL200
Coordinates: 10S 568410 4221990

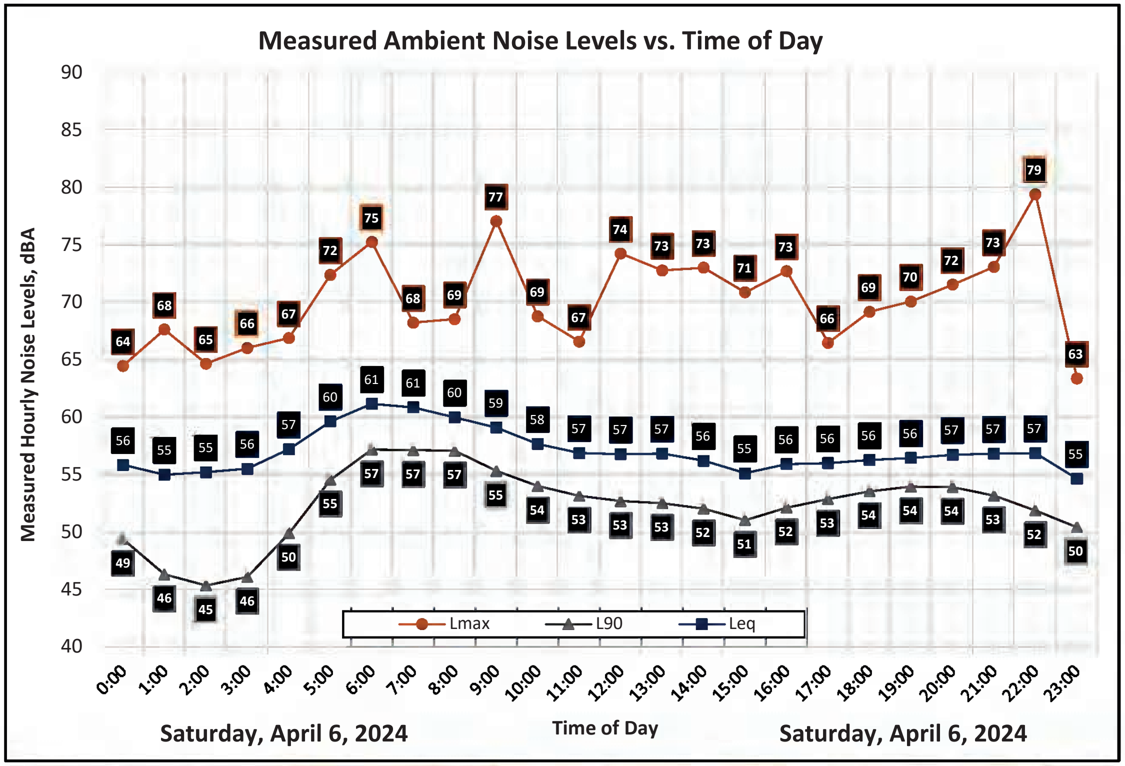


Appendix B3b: Continuous Noise Monitoring Results

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, April 6, 2024	0:00	56	64	55	49
Saturday, April 6, 2024	1:00	55	68	53	46
Saturday, April 6, 2024	2:00	55	65	53	45
Saturday, April 6, 2024	3:00	56	66	54	46
Saturday, April 6, 2024	4:00	57	67	56	50
Saturday, April 6, 2024	5:00	60	72	59	55
Saturday, April 6, 2024	6:00	61	75	61	57
Saturday, April 6, 2024	7:00	61	68	60	57
Saturday, April 6, 2024	8:00	60	69	60	57
Saturday, April 6, 2024	9:00	59	77	58	55
Saturday, April 6, 2024	10:00	58	69	57	54
Saturday, April 6, 2024	11:00	57	67	56	53
Saturday, April 6, 2024	12:00	57	74	56	53
Saturday, April 6, 2024	13:00	57	73	56	53
Saturday, April 6, 2024	14:00	56	73	55	52
Saturday, April 6, 2024	15:00	55	71	54	51
Saturday, April 6, 2024	16:00	56	73	55	52
Saturday, April 6, 2024	17:00	56	66	55	53
Saturday, April 6, 2024	18:00	56	69	56	54
Saturday, April 6, 2024	19:00	56	70	56	54
Saturday, April 6, 2024	20:00	57	72	56	54
Saturday, April 6, 2024	21:00	57	73	56	53
Saturday, April 6, 2024	22:00	57	79	55	52
Saturday, April 6, 2024	23:00	55	63	54	50

Statistics	Leq	Lmax	L50	L90
Day Average	57	71	56	54
Night Average	57	69	55	50
Day Low	55	66	54	51
Day High	61	77	60	57
Night Low	55	63	53	45
Night High	61	79	61	57
Ldn	63	Day %		65
CNEL	64	Night %		35

Site: LT-4
Project: Scotts Valley Development Project
Location: South of Project Site
Coordinates: 10S 568410 4221990
Meter: LDL 820-8
Calibrator: CAL200

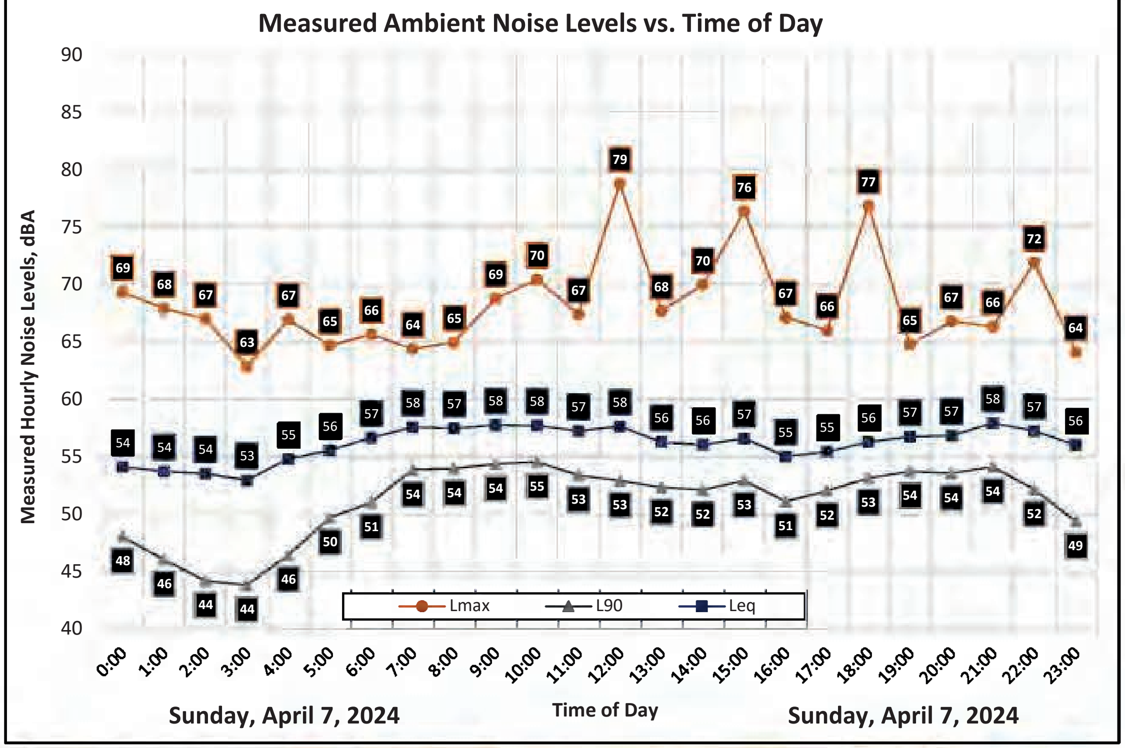


Appendix B3c: Continuous Noise Monitoring Results

Site: LT-4
Project: Scotts Valley Development Project
Location: South of Project Site
Coordinates: 10S 568410 4221990
Meter: LDL 820-8
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, April 7, 2024	0:00	54	69	53	48
Sunday, April 7, 2024	1:00	54	68	52	46
Sunday, April 7, 2024	2:00	54	67	51	44
Sunday, April 7, 2024	3:00	53	63	51	44
Sunday, April 7, 2024	4:00	55	67	53	46
Sunday, April 7, 2024	5:00	56	65	55	50
Sunday, April 7, 2024	6:00	57	66	56	51
Sunday, April 7, 2024	7:00	58	64	57	54
Sunday, April 7, 2024	8:00	57	65	57	54
Sunday, April 7, 2024	9:00	58	69	57	54
Sunday, April 7, 2024	10:00	58	70	57	55
Sunday, April 7, 2024	11:00	57	67	56	53
Sunday, April 7, 2024	12:00	58	79	56	53
Sunday, April 7, 2024	13:00	56	68	55	52
Sunday, April 7, 2024	14:00	56	70	55	52
Sunday, April 7, 2024	15:00	57	76	56	53
Sunday, April 7, 2024	16:00	55	67	54	51
Sunday, April 7, 2024	17:00	55	66	55	52
Sunday, April 7, 2024	18:00	56	77	55	53
Sunday, April 7, 2024	19:00	57	65	56	54
Sunday, April 7, 2024	20:00	57	67	56	54
Sunday, April 7, 2024	21:00	58	66	57	54
Sunday, April 7, 2024	22:00	57	72	56	52
Sunday, April 7, 2024	23:00	56	64	55	49

Statistics	Leq	Lmax	L50	L90
Day Average	57	69	56	53
Night Average	55	67	54	48
Day Low	55	64	54	51
Day High	58	79	57	55
Night Low	53	63	51	44
Night High	57	72	56	52
Ldn	61	Day %		75
CNEL	62	Night %		25



Appendix C: Traffic Noise Calculation Inputs and Results

Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project
Description: Existing Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	15,520	83	0	17	1.0%	1.0%	45	670	-5	208	96	45	47.4
2	Auto Mall Parkway	West of Project Access	31,290	83	0	17	1.0%	1.0%	45	900	0	331	154	71	53.5
3	N Ascot Parkway	South of Auto Mall Parkway	4,130	83	0	17	1.0%	1.0%	35	70	-5	57	27	12	53.7
4	Auto Mall Parkway	South of Auto Mall Parkway	12,390	83	0	17	1.0%	1.0%	45	870	-5	179	83	38	44.7
5	Columbus Parkway	East of Ascot Court	11,720	83	0	17	1.0%	1.0%	45	150	-5	172	80	37	55.9
6	Columbus Parkway	West of Redwood Parkway	9,120	83	0	17	1.0%	1.0%	45	115	-5	146	68	31	56.5
7	Redwood Parkway	East of Redwood Parkway	3,740	83	0	17	1.0%	1.0%	35	90	-5	53	25	12	51.6
8	Admiral Callaghan Lan	South of Columbus Parkway	20,340	83	0	17	1.0%	1.0%	35	450	-5	165	77	36	48.5
9	Plaza Drive	West of Plaza Drive	10,400	83	0	17	1.0%	1.0%	35	205	-5	106	49	23	50.7
10	Turner Parkway	South of Admiral Callaghan Lane	8,390	83	0	17	1.0%	1.0%	35	55	0	92	43	20	63.3
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	16,970	83	0	17	1.0%	1.0%	35	205	0	147	68	32	57.8
12	Turner Parkway	South of Turner Parkway	8,030	83	0	17	1.0%	1.0%	35	75	-5	89	41	19	56.1
13	Redwood Parkway	East of Plaza Drive	7,640	83	0	17	1.0%	1.0%	35	90	0	86	40	19	59.7
14	Oakwood Avenue	West of Ascot Parkway	6,180	83	0	17	1.0%	1.0%	30	90	0	63	29	14	57.7

Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project
Description: Existing Plus Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	16,740	83	0	17	1.0%	1.0%	45	670	-5	218	101	47	47.7
2	Auto Mall Parkway	West of Project Access	36,310	83	0	17	1.0%	1.0%	45	900	0	366	170	79	54.1
3	N Ascot Parkway	South of Auto Mall Parkway	4,370	83	0	17	1.0%	1.0%	35	70	-5	59	28	13	53.9
4	Auto Mall Parkway	South of Auto Mall Parkway	13,370	83	0	17	1.0%	1.0%	45	870	-5	188	87	40	45.0
5	Columbus Parkway	East of Ascot Court	7,810	83	0	17	1.0%	1.0%	45	150	-5	131	61	28	54.1
6	Columbus Parkway	West of Redwood Parkway	10,100	83	0	17	1.0%	1.0%	45	115	-5	156	72	34	57.0
7	Redwood Parkway	East of Redwood Parkway	3,370	83	0	17	1.0%	1.0%	35	90	-5	50	23	11	51.2
8	Admiral Callaghan Lan	South of Columbus Parkway	21,830	83	0	17	1.0%	1.0%	35	450	-5	173	80	37	48.8
9	Plaza Drive	West of Plaza Drive	10,700	83	0	17	1.0%	1.0%	35	205	-5	108	50	23	50.8
10	Turner Parkway	South of Admiral Callaghan Lane	8,600	83	0	17	1.0%	1.0%	35	55	0	93	43	20	63.4
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	18,360	83	0	17	1.0%	1.0%	35	205	0	154	72	33	58.2
12	Turner Parkway	South of Turner Parkway	8,120	83	0	17	1.0%	1.0%	35	75	-5	90	42	19	56.2
13	Redwood Parkway	East of Plaza Drive	7,860	83	0	17	1.0%	1.0%	35	90	0	88	41	19	59.8
14	Oakwood Avenue	West of Ascot Parkway	6,030	83	0	17	1.0%	1.0%	30	90	0	62	29	13	57.6

Appendix C-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project

Description: Baseline Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

												Contours (ft.) - No Offset			
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	18,520	83	0	17	1.0%	1.0%	45	670	-5	234	108	50	48.1
2	Auto Mall Parkway	West of Project Access	36,090	83	0	17	1.0%	1.0%	45	900	0	364	169	79	54.1
3	N Ascot Parkway	South of Auto Mall Parkway	4,510	83	0	17	1.0%	1.0%	35	70	-5	61	28	13	54.1
4	Auto Mall Parkway	South of Auto Mall Parkway	13,900	83	0	17	1.0%	1.0%	45	870	-5	193	90	42	45.2
5	Columbus Parkway	East of Ascot Court	13,200	83	0	17	1.0%	1.0%	45	150	-5	186	87	40	56.4
6	Columbus Parkway	West of Redwood Parkway	10,530	83	0	17	1.0%	1.0%	45	115	-5	160	74	35	57.2
7	Redwood Parkway	East of Redwood Parkway	3,850	83	0	17	1.0%	1.0%	35	90	-5	55	25	12	51.7
8	Admiral Callaghan Lan	South of Columbus Parkway	22,590	83	0	17	1.0%	1.0%	35	450	-5	177	82	38	48.9
9	Plaza Drive	West of Plaza Drive	10,800	83	0	17	1.0%	1.0%	35	205	-5	108	50	23	50.8
10	Turner Parkway	South of Admiral Callaghan Lane	8,900	83	0	17	1.0%	1.0%	35	55	0	95	44	21	63.6
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	19,120	83	0	17	1.0%	1.0%	35	205	0	159	74	34	58.3
12	Turner Parkway	South of Turner Parkway	8,430	83	0	17	1.0%	1.0%	35	75	-5	92	43	20	56.3
13	Redwood Parkway	East of Plaza Drive	8,120	83	0	17	1.0%	1.0%	35	90	0	90	42	19	60.0
14	Oakwood Avenue	West of Ascot Parkway	6,240	83	0	17	1.0%	1.0%	30	90	0	64	30	14	57.8

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Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project
Description: Baseline Plus Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	19,740	83	0	17	1.0%	1.0%	45	670	-5	244	113	53	48.4
2	Auto Mall Parkway	West of Project Access	41,110	83	0	17	1.0%	1.0%	45	900	0	397	184	86	54.7
3	N Ascot Parkway	South of Auto Mall Parkway	4,750	83	0	17	1.0%	1.0%	35	70	-5	63	29	14	54.3
4	Auto Mall Parkway	South of Auto Mall Parkway	14,880	83	0	17	1.0%	1.0%	45	870	-5	202	94	43	45.5
5	Columbus Parkway	East of Ascot Court	14,180	83	0	17	1.0%	1.0%	45	150	-5	195	91	42	56.7
6	Columbus Parkway	West of Redwood Parkway	11,510	83	0	17	1.0%	1.0%	45	115	-5	170	79	37	57.6
7	Redwood Parkway	East of Redwood Parkway	3,850	83	0	17	1.0%	1.0%	35	90	-5	55	25	12	51.7
8	Admiral Callaghan Lan	South of Columbus Parkway	24,080	83	0	17	1.0%	1.0%	35	450	-5	185	86	40	49.2
9	Plaza Drive	West of Plaza Drive	11,100	83	0	17	1.0%	1.0%	35	205	-5	110	51	24	51.0
10	Turner Parkway	South of Admiral Callaghan Lane	9,110	83	0	17	1.0%	1.0%	35	55	0	97	45	21	63.7
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	20,510	83	0	17	1.0%	1.0%	35	205	0	166	77	36	58.6
12	Turner Parkway	South of Turner Parkway	8,520	83	0	17	1.0%	1.0%	35	75	-5	93	43	20	56.4
13	Redwood Parkway	East of Plaza Drive	8,340	83	0	17	1.0%	1.0%	35	90	0	91	42	20	60.1
14	Oakwood Avenue	West of Ascot Parkway	6,460	83	0	17	1.0%	1.0%	30	90	0	65	30	14	57.9

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Appendix C-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project
Description: Cumulative Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	21,550	83	0	17	1.0%	1.0%	45	670	-5	258	120	56	48.8
2	Auto Mall Parkway	West of Project Access	42,410	83	0	17	1.0%	1.0%	45	900	0	406	188	87	54.8
3	N Ascot Parkway	South of Auto Mall Parkway	5,340	83	0	17	1.0%	1.0%	35	70	-5	68	31	15	54.8
4	Auto Mall Parkway	South of Auto Mall Parkway	16,400	83	0	17	1.0%	1.0%	45	870	-5	215	100	46	45.9
5	Columbus Parkway	East of Ascot Court	15,560	83	0	17	1.0%	1.0%	45	150	-5	208	97	45	57.1
6	Columbus Parkway	West of Redwood Parkway	12,360	83	0	17	1.0%	1.0%	45	115	-5	178	83	38	57.9
7	Redwood Parkway	East of Redwood Parkway	4,600	83	0	17	1.0%	1.0%	35	90	-5	61	28	13	52.5
8	Admiral Callaghan Lan	South of Columbus Parkway	25,680	83	0	17	1.0%	1.0%	35	450	-5	193	90	42	49.5
9	Plaza Drive	West of Plaza Drive	10,800	83	0	17	1.0%	1.0%	35	205	-5	108	50	23	50.8
10	Turner Parkway	South of Admiral Callaghan Lane	10,590	83	0	17	1.0%	1.0%	35	55	0	107	50	23	64.3
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	22,550	83	0	17	1.0%	1.0%	35	205	0	177	82	38	59.0
12	Turner Parkway	South of Turner Parkway	10,060	83	0	17	1.0%	1.0%	35	75	-5	103	48	22	57.1
13	Redwood Parkway	East of Plaza Drive	9,670	83	0	17	1.0%	1.0%	35	90	0	101	47	22	60.7
14	Oakwood Avenue	West of Ascot Parkway	7,430	83	0	17	1.0%	1.0%	30	90	0	72	33	15	58.5

Appendix C-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project

Description: Cumulative Plus Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	20,540	83	0	17	1.0%	1.0%	45	670	-5	250	116	54	48.6
2	Auto Mall Parkway	West of Project Access	44,340	83	0	17	1.0%	1.0%	45	900	0	418	194	90	55.0
3	N Ascot Parkway	South of Auto Mall Parkway	5,580	83	0	17	1.0%	1.0%	35	70	-5	70	32	15	55.0
4	Auto Mall Parkway	South of Auto Mall Parkway	17,380	83	0	17	1.0%	1.0%	45	870	-5	224	104	48	46.2
5	Columbus Parkway	East of Ascot Court	16,540	83	0	17	1.0%	1.0%	45	150	-5	217	101	47	57.4
6	Columbus Parkway	West of Redwood Parkway	13,340	83	0	17	1.0%	1.0%	45	115	-5	188	87	40	58.2
7	Redwood Parkway	East of Redwood Parkway	4,600	83	0	17	1.0%	1.0%	35	90	-5	61	28	13	52.5
8	Admiral Callaghan Lan	South of Columbus Parkway	27,170	83	0	17	1.0%	1.0%	35	450	-5	201	93	43	49.7
9	Plaza Drive	West of Plaza Drive	11,100	83	0	17	1.0%	1.0%	35	205	-5	110	51	24	51.0
10	Turner Parkway	South of Admiral Callaghan Lane	10,800	83	0	17	1.0%	1.0%	35	55	0	108	50	23	64.4
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	23,940	83	0	17	1.0%	1.0%	35	205	0	184	86	40	59.3
12	Turner Parkway	South of Turner Parkway	10,150	83	0	17	1.0%	1.0%	35	75	-5	104	48	22	57.1
13	Redwood Parkway	East of Plaza Drive	9,890	83	0	17	1.0%	1.0%	35	90	0	102	47	22	60.8
14	Oakwood Avenue	West of Ascot Parkway	9,090	83	0	17	1.0%	1.0%	30	90	0	82	38	18	59.4
20	0	0	0	0	0		0.0%	0.0%	0	0	0				
21	0	0	0	0	0		0.0%	0.0%	0	0	0				
22	0	0	0	0	0		0.0%	0.0%	0	0	0				
23	0	0	0	0	0		0.0%	0.0%	0	0	0				
24	0	0	0	0	0		0.0%	0.0%	0	0	0				
25	0	0	0	0	0		0.0%	0.0%	0	0	0				
26	0	0	0	0	0		0.0%	0.0%	0	0	0				
27	0	0	0	0	0		0.0%	0.0%	0	0	0				
28	0	0	0	0	0		0.0%	0.0%	0	0	0				

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Appendix C-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project

Description: Cumulative (Scenario B) Plus Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	22,810	83	0	17	1.0%	1.0%	45	670	-5	268	125	58	49.0
2	Auto Mall Parkway	West of Project Access	47,240	83	0	17	1.0%	1.0%	45	900	0	436	202	94	55.3
3	N Ascot Parkway	South of Auto Mall Parkway	5,570	83	0	17	1.0%	1.0%	35	70	-5	70	32	15	55.0
4	Auto Mall Parkway	South of Auto Mall Parkway	17,330	83	0	17	1.0%	1.0%	45	870	-5	223	104	48	46.1
5	Columbus Parkway	East of Ascot Court	16,490	83	0	17	1.0%	1.0%	45	150	-5	216	100	47	57.4
6	Columbus Parkway	West of Redwood Parkway	13,290	83	0	17	1.0%	1.0%	45	115	-5	187	87	40	58.2
7	Redwood Parkway	East of Redwood Parkway	4,600	83	0	17	1.0%	1.0%	35	90	-5	61	28	13	52.5
8	Admiral Callaghan Lan	South of Columbus Parkway	27,090	83	0	17	1.0%	1.0%	35	450	-5	200	93	43	49.7
9	Plaza Drive	West of Plaza Drive	11,090	83	0	17	1.0%	1.0%	35	205	-5	110	51	24	51.0
10	Turner Parkway	South of Admiral Callaghan Lane	10,800	83	0	17	1.0%	1.0%	35	55	0	108	50	23	64.4
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	23,890	83	0	17	1.0%	1.0%	35	205	0	184	85	40	59.3
12	Turner Parkway	South of Turner Parkway	10,140	83	0	17	1.0%	1.0%	35	75	-5	104	48	22	57.1
13	Redwood Parkway	East of Plaza Drive	9,870	83	0	17	1.0%	1.0%	35	90	0	102	47	22	60.8
14	Oakwood Avenue	West of Ascot Parkway	7,630	83	0	17	1.0%	1.0%	30	90	0	73	34	16	58.6
20	0	0	0	0	0		0.0%	0.0%	0	0	0				
21	0	0	0	0	0		0.0%	0.0%	0	0	0				
22	0	0	0	0	0		0.0%	0.0%	0	0	0				
23	0	0	0	0	0		0.0%	0.0%	0	0	0				
24	0	0	0	0	0		0.0%	0.0%	0	0	0				
25	0	0	0	0	0		0.0%	0.0%	0	0	0				
26	0	0	0	0	0		0.0%	0.0%	0	0	0				
27	0	0	0	0	0		0.0%	0.0%	0	0	0				
28	0	0	0	0	0		0.0%	0.0%	0	0	0				

Appendix C-4

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 240210 Scotts Valley Development Project
Description: Cumulative (Scenario C) Plus Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

												Contours (ft.) - No Offset			
Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	60 dBA	65 dBA	70 dBA	Level, dBA
1	Auto Mall Parkway	East of Project Access	22,370	83	0	17	1.0%	1.0%	45	670	-5	265	123	57	49.0
2	Auto Mall Parkway	West of Project Access	45,370	83	0	17	1.0%	1.0%	45	900	0	424	197	91	55.1
3	N Ascot Parkway	South of Auto Mall Parkway	5,480	83	0	17	1.0%	1.0%	35	70	-5	69	32	15	54.9
4	Auto Mall Parkway	South of Auto Mall Parkway	16,980	83	0	17	1.0%	1.0%	45	870	-5	220	102	47	46.1
5	Columbus Parkway	East of Ascot Court	16,140	83	0	17	1.0%	1.0%	45	150	-5	213	99	46	57.3
6	Columbus Parkway	West of Redwood Parkway	12,940	83	0	17	1.0%	1.0%	45	115	-5	184	85	40	58.1
7	Redwood Parkway	East of Redwood Parkway	4,600	83	0	17	1.0%	1.0%	35	90	-5	61	28	13	52.5
8	Admiral Callaghan Lan	South of Columbus Parkway	26,550	83	0	17	1.0%	1.0%	35	450	-5	197	92	43	49.6
9	Plaza Drive	West of Plaza Drive	10,960	83	0	17	1.0%	1.0%	35	205	-5	109	51	24	50.9
10	Turner Parkway	South of Admiral Callaghan Lane	10,710	83	0	17	1.0%	1.0%	35	55	0	108	50	23	64.4
11	Admiral Callaghan Lan	East of Admiral Callaghan Lane	23,680	83	0	17	1.0%	1.0%	35	205	0	183	85	39	59.3
12	Turner Parkway	South of Turner Parkway	10,100	83	0	17	1.0%	1.0%	35	75	-5	104	48	22	57.1
13	Redwood Parkway	East of Plaza Drive	9,790	83	0	17	1.0%	1.0%	35	90	0	102	47	22	60.8
14	Oakwood Avenue	West of Ascot Parkway	7,550	83	0	17	1.0%	1.0%	30	90	0	72	34	16	58.6
20	0	0	0	0	0		0.0%	0.0%	0	0	0				
21	0	0	0	0	0		0.0%	0.0%	0	0	0				
22	0	0	0	0	0		0.0%	0.0%	0	0	0				
23	0	0	0	0	0		0.0%	0.0%	0	0	0				
24	0	0	0	0	0		0.0%	0.0%	0	0	0				
25	0	0	0	0	0		0.0%	0.0%	0	0	0				
26	0	0	0	0	0		0.0%	0.0%	0	0	0				
27	0	0	0	0	0		0.0%	0.0%	0	0	0				
28	0	0	0	0	0		0.0%	0.0%	0	0	0				

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