.

NOISE IMPACT ANALYSIS

SLATER AVENUE MIXED-USE PROJECT

CITY OF FOUNTAIN VALLEY

Lead Agency:

City of Fountain Valley
10200 Slater Avenue
Fountain Valley, CA 92708

Prepared by:

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Project No. 21082

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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 Fountain Valley
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
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 Slater Avenue Mixed-Use 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 in the City of Fountain Valley (City). The approximately 3.34-acre project site is currently developed with three commercial buildings with associated parking lots. The project site is bounded by El Corazon Avenue and multi-family residences to the north, multi-family residences to the east, Slater Avenue and City Hall to the south, and San Mateo Street and commercial uses 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 the multi-family residences to the north that are located as near as 20 feet to the north of the project site. There are also multi-family residences located as near as 70 feet to the east of the project site. The nearest school is Kazuo Masuda Middle School that is located as near as a quarter mile to the east of the project site.

1.3 Proposed Project Description

The proposed project would consist of development of a four and five story mixed-use development with a restaurant and a residential complex with 270 residential units, associated parking garage and amenities that include a courtyard with pool and spa, a club/lounge, a golf/lounge, a fitness center, and a roof deck. The proposed restaurant will include 5,000 square feet of interior dining space and an additional 2,000 square feet of outdoor dining space. The proposed site plan is shown in Figure 2.

1.4 Standard Noise Regulatory Conditions

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

City of Fountain Valley Noise Regulations

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

- Section 6.08.140 Trash collection noise and time limitations
- Section 6.28.050 Exterior noise standards
- Section 6.28.060 Interior noise standards
- 6.28.070(5) Construction time limitations
- 6.28.148 Commercial delivery noise and time limitations

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 2700-27207 – On Road Vehicle Noise Limits
- California Vehicle Code Section 38365-38350 – Off-Road Vehicle Noise Limits

1.5 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?

No impact.

1.6 Project Design Features Incorporated into the Proposed Project

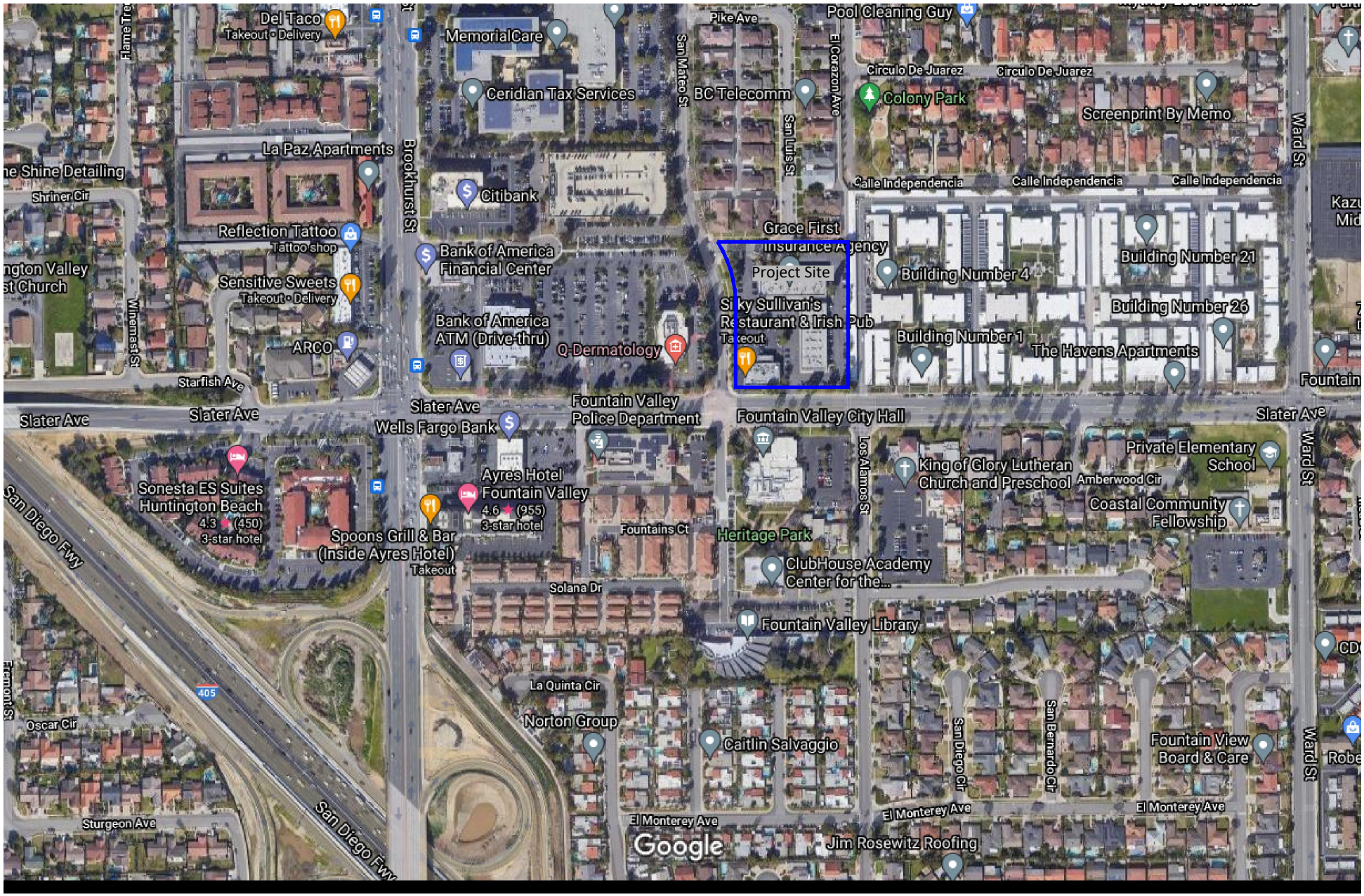
This analysis was based on implementation of the following project design features that are either already depicted on the proposed project site plan and architectural plans or are required from City and State Regulations.

Project Design Feature 1:
The project applicant shall require that all construction activities, including pouring of concrete for the proposed parking structure, occur during the City's allowable hours of construction that is detailed in Section 6.28.070(5) of the City's Municipal Code that exempts construction noise that occurs between 7:00 a.m. and 8:00 p.m. Monday through Friday and between 9:00 a.m. and 8:00 p.m. on Saturdays from the City's noise standards.

Project Design Feature 2:
The project applicant shall restrict the installation of an outdoor sound system at the outdoor dining area of the proposed restaurant located on the southwest corner of the project site.

1.7 Mitigation Measures for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above and the Project Design Features detailed above in Section 1.6 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.

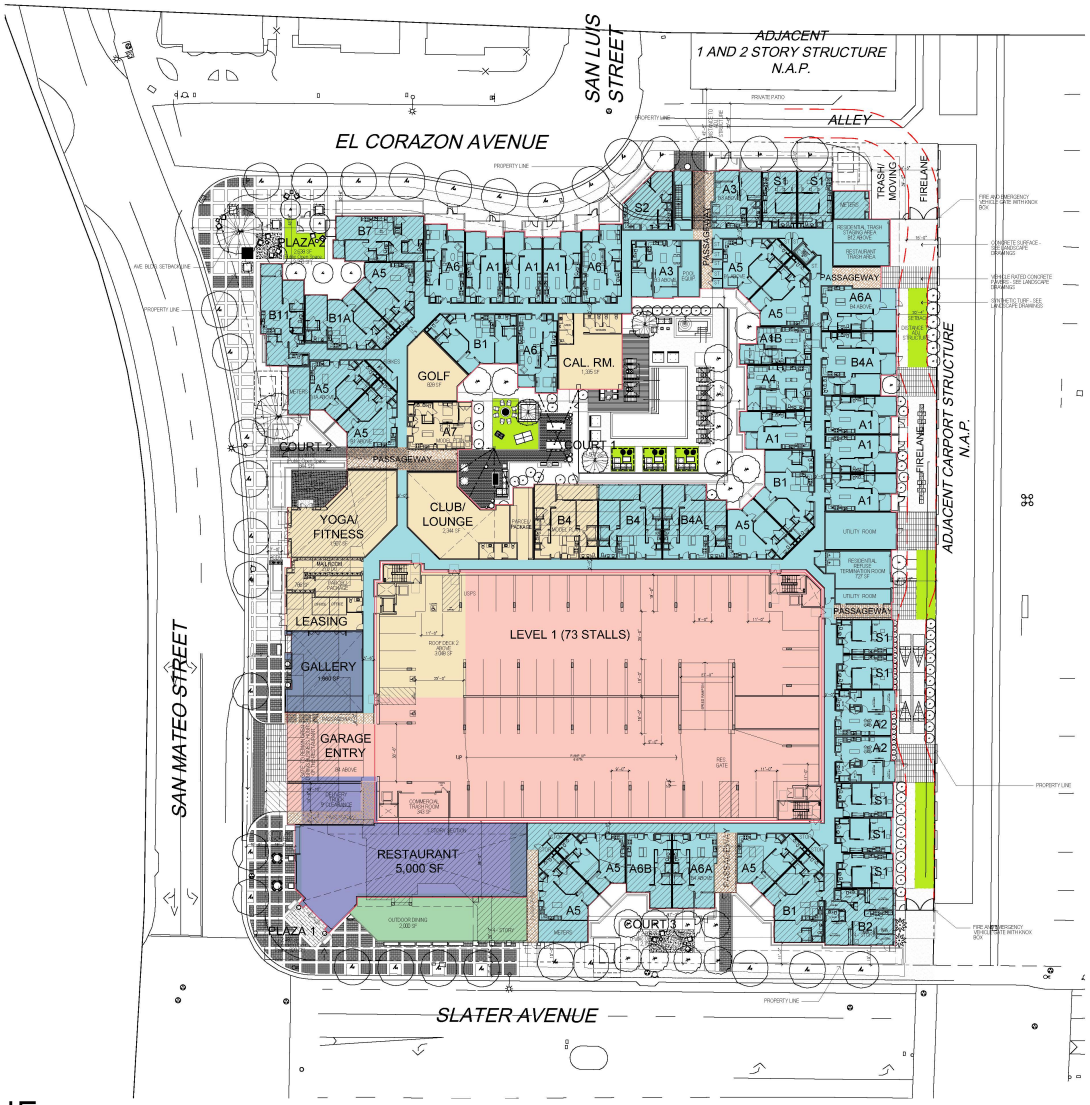


Imagery ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

SOURCE: Google Maps.

VISTA ENVIRONMENTAL

Figure 1
Project Location Map



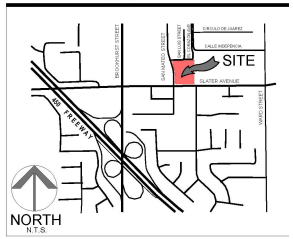
SITE PLAN NOTES

1. THIS ARCHITECTURAL SITE PLAN IS PROVIDED FOR OVERALL SITE REFERENCE. THE LOCATION OF ITEMS INCLUDED IN THIS SET OF PLANS IS FOR AGENCY DEPARTMENT USE ONLY.
2. THIS SITE PLAN IS FOR REFERENCE ONLY, AS AN ARCHITECTURAL PLAN FOR GENERAL LAYOUT AND IDENTIFICATION PURPOSES ONLY
3. FOR LOT LINE DIMENSIONS & HORIZONTAL CONTROL, SEE CIVIL DRAWINGS
4. FOR HARDSCAPE AND ALL SITE IMPROVEMENTS, SEE LANDSCAPE DRAWINGS
5. FOR PARKING GARAGE, SEE ALSO A2.0-A2.2
6. FOR "FIRE LANE" DESIGN, SEE CIVIL AND LANDSCAPE DRAWINGS
7. FOR PERIMETER FENCING, SEE LANDSCAPE DRAWINGS
8. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR SPECIFIC SITE REQUIREMENTS
9. ALL PROPERTY LINES, EASEMENTS, AND BUILDINGS, EXISTING AND PROPOSED ARE SHOWN ON THIS PLAN BUT MUST BE VERIFIED WITH THE CIVIL PLANS
10. BUILDING SIGNAGE IS DESIGNED BY OTHERS AND INSTALLED BY THE GENERAL CONTRACTOR.
11. SITE SIGNAGE IS DESIGNED BY OTHERS AND INSTALLED BY THE CONTRACTOR.
12. SITE WALLS ARE DESIGNED BY OTHERS
13. DECORATIVE SITE LIGHTING IS DESIGNED BY OTHERS.
14. SURFACE WATER MUST DRAIN AWAY FROM BUILDING SEE CIVIL AND LANDSCAPE PLANS FOR DRAINAGE DESIGN.
15. 15% OF THE UNITS ON THE SITE TO BE DEVELOPED AND OPERATED AS AFFORDABLE HOUSING.

LEGEND

- INDICATES AREA OF NON-RESIDENTIAL
- INDICATES AREA OF 5 STORIES
- INDICATES AREA OF AMENITIES
- INDICATES AREA OF PARKING STRUCTURE
- INDICATES AREA OF OUTDOOR COVERED DINING AREA
- INDICATES AREA OF 4-STORY SECTION OF BUILDING
- INDICATES ROOF DECK AREA OVER GARAGE

VICINITY MAP



NORTH

1"=30'-0" 0 15' 30' 60' 90'

SITE PLAN

A1.1

SLATER AVENUE

FOUNTAIN VALLEY, CA

DATE: 11.16.2021
JOB NO.: 2017-647

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1501 QUAIL STREET, SUITE 100A, NEWPORT BEACH, CA 92660
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(714) 639-9860

Architecture. Design. Relationships.

SOURCE: MJS Landscape Architecture.

VISTA ENVIRONMENTAL

Figure 2
Proposed Site 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 Fountain Valley 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 noise as the distance from the source increases. The manner in which noise 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 Fountain Valley. Noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise 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 Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, is the only guidance document from a government agency that defines 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

	Allowable Noise Impact Exposure dBA Leq or Ldn		
Existing Noise Exposure (dBA Leq or Ldn)	**Allowable Project Noise Exposure Before Moderate Impact**	**Allowable Combined Total Noise Exposure**	**Allowable Noise Exposure Increase Before Moderate Impact**
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Allowable Project Noise Exposure Before Moderate Impact	Allowable Combined Total Noise Exposure	Allowable Noise Exposure Increase Before Moderate Impact
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2018.

The FTA Manual also provides guidance on construction noise and 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 detailed construction noise assessment are provided below in Table B.

Table B – FTA Construction Noise Criteria

Land Use	Day (dBA $Leq_{(8\text{-hour})}$)	Night (dBA $Leq_{(8\text{-hour})}$)	30-day Average (dBA Ldn)
Residential	80	70	75
Commercial	85	85	80[(1)]
Industrial	90	90	85[(1)]

Notes:
[(1)] Use a 24-hour $Leq_{(24\ hour)}$ instead of $Ldn_{(30\ day)}$.
Source: Federal Transit Administration, 2018.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the 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 regularity 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.

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 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 Fountain Valley General Plan and Municipal Code establishes the following applicable policies and regulations for the proposed project. It should be noted that neither the General Plan nor the Municipal Code provide any applicable standards for vibration.

City of Fountain Valley General Plan

The City of Fountain Valley has the authority to set land use noise standards and place restrictions on private activities that generate excessive or intrusive noise. Chapter 7, Noise Element, of the General Plan states that "noise concerns should be incorporated into land use planning to reduce future noise and land use incompatibility." The following goals and policies are set forth in the Noise Element of the General Plan.

Goal 7.1 Protect public health and welfare by eliminating existing noise problems and preventing significant degradation of the future acoustic environment.

Table C – City of Fountain Valley Exterior and Interior Noise Standards

Categories	Uses	Energy Average CNEL	
		Interior[1]	Exterior[2]
Residential	Single Family, Duplex, Multiple Family	45[3]	60
	Mobile	45*	60
Commercial	Hotel, Motel, Transient Lodging	45	60[4]
	Commercial Retail, Bank Restaurant	55	--
	Office Building, Research and Development, Professional Offices, City Office Building	45	--
	Amphitheatre, Concert Hall, Auditorium, Meeting Hall	45	--
	Gymnasium (Multipurpose)	50	--
	Sports Club	55	--
	Manufacturing, Warehousing, Wholesale, Utilities	65	--
	Movie Theatres	45	--
Institutional	Hospital, Schools' classroom	45	65
	Church, Library	45	--
Open Space	Parks	--	65

Notes:

[1] Indoor environment excluding, Bathrooms, toilets, closets, corridors.

[2] Outdoor environment limited to: Private yard of single family
Multi-family private patio or balcony which is served by means of exit from inside.
Mobile home Park
Hospital patio, office patio
Park's picnic area
School's playground
Hotel and motel recreation area

[3] Noise level requirement with closed windows. Mechanical ventilation system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of the UBC.

[4] Except those areas effected by aircraft noise.

* Due to the variable nature of mobile homes, a 15 dB outdoor to indoor noise reduction with windows closed should be assumed for indicating compliance with this standard.

Source: Figure 7-9, City of Fountain Valley General Plan, 1995.

Policies:

7.1.1 Incorporate noise considerations into land use planning decisions.

a. Establish acceptable limits of noise for various land uses throughout the community. The City adopts the noise standards presented in Figure 7-9 (see Table C above) which identify interior and exterior noise standards in relation to specific land uses; particularly residential areas, schools, hospitals, open space preserves and parks. The standards specify the maximum noise levels allowable for new developments impacted by noise sources operating in public or quasi-public property.

7.1.3 Establish measures to control non-transportation noise impacts.

a. The City shall enforce the Fountain Valley Noise Ordinance to mitigate noise conflicts between adjacent land uses. The Noise Ordinance establishes noise limits that cannot be exceeded at the property line. The Noise Ordinance, because it is a City statute, can only control noise generated on private property. Therefore, the primary function of the Noise Ordinance is to control stationary noise sources and construction noise.

b. The City shall evaluate noise generated by construction activities, and subject them to the requirements of the Noise Ordinance.

City of Fountain Valley Municipal Code

The Fountain Valley Municipal Code establishes the following applicable standards related to noise.

6.08.140 Standards for collections

(a) Equipment used by the contractor for collection and hauling of garbage and trash shall be such as to assure, in the opinion of the city manager, that adequate standards of collection will be maintained. It is the declared interest of the city that the contractor be able to provide a wide variety of containers to meet the capacity requirements of commercial, industrial and multiple residential users. Equipment used shall be watertight. Complete metal operating covers must be apart of the design of equipment employed. No material shall be permitted to leak, fall or be spilled onto city streets, alleys or highways. Any such leakage or spills occurring shall be immediately corrected and the area cleaned. Equipment used must employ adequate safety conditions for operating personnel and the public and must be maintained in good mechanical condition.

(b) All collections shall be made as quietly as possible and no unnecessarily noisy trucks or equipment shall be used. Employees of the contractor who are unnecessarily noisy or who violate the provisions of the California Vehicle Code and/or any applicable city ordinance in the collection of such materials shall be barred from the performance of any duties on city streets and rights-of-way upon demand of the city manager.

(c) Collections shall only be made between the hours of six-thirty a.m. and six-thirty p.m. unless the permission of the city manager is obtained

6.28.050 Exterior noise standards

(a) The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

Table D – City of Fountain Valley Exterior Noise Standards

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7 a.m. – 10 p.m.
	50 dB(A)	10 p.m. – 7 a.m.

Source: City of Fountain Valley Municipal Code, Section 6.28.050.

In the even the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by 5 dB(A).

(b) It is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either incorporated or unincorporated, to exceed:

(1) The noise standard for a cumulative period of more than thirty minute in any hour; or

(2) The noise standard plus five dB(A) for a cumulative period of more than fifteen minutes in any hour; or

(3) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour; or

(4) The noise standard plus fifteen dB(A) for a cumulative period of more than one minute in any hour; or

(5) The noise standard plus twenty dB(A) for any period of time.

(c) In the event the ambient noise level exceeds any of the first four noise limit categories set forth in subsection (b) of this section, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

6.28.060 Interior noise standards

(a) The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

Table E – City of Fountain Valley Exterior Noise Standards

Noise Zone	Noise Level	Time Period
1	55 dB(A)	7 a.m. – 10 p.m.
	45 dB(A)	10 p.m. – 7 a.m.

Source: City of Fountain Valley Municipal Code, Section 6.28.050.

In the even the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five dB(A).

(b) It is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either incorporated or unincorporated, to exceed:

(1) The interior noise standard for a cumulative period of more than five minute in any hour; or

(2) The interior noise standard plus five dB(A) for a cumulative period of more than one minute in any hour; or

(3) The interior noise standard plus ten dB(A) for any period of time.

(c) In the event the ambient noise level exceeds any of the first four noise limit categories set forth in subsection (b) of this section, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

6.28.070 Special provisions

The following activities shall be exempted from the provisions of this chapter:

(5) Noise sources associated with the construction, repair, remodeling or grading of any real property, provided said activities take place between the hours of seven a.m. and eight p.m. Monday through Friday, nine a.m. through eight p.m. on Saturday and at no time on Sunday or any legal holiday. For purposes of this exception the use of saws, buffers, sanders, drills, and sprayers shall be included, as shall similar activity.

(9) Noise sources associated with the landscape maintenance of real property, provided said activities take place between the hours of seven a.m. and eight p.m. Monday through Friday, nine a.m. through eight p.m. on Saturday, or nine a.m. through six p.m. on Sunday or legal holidays. For purposes of this exception, the phrase "landscape maintenance of real property" shall include, but not be limited to, the use of power mowers, edgers, chain saws, trimmers, hedgecutters, and other devices that are not hand-powered. Leaf blowers shall not be included in said exception and shall be regulated as provided in Chapter 6.10 of this code;

6.28.140 Commercial delivery prohibition

No person shall make, cause, accept or permit a delivery of goods, merchandise, material, equipment, meat, poultry, fish, groceries, dairy products, foodstuffs, food, or beverage within one hundred feet of a residentially zoned property between the hours of ten p.m. and seven a.m. or at any time on a Sunday or legal holiday so as to disturb the peace and quiet of any reasonable person of normal sensitivity residing in the area. Proof of such a violation may be established by the testimony of a peace officer, code enforcement officer, or any other person. For purposes of this section "delivery" shall not only mean the completed act of a delivery, but all preparatory and related steps taken within the one hundred-foot distance including, but not limited to, driving, stopping, idling or parking a vehicle, the opening or shutting of doors, or the movement of pallets, dolleys, floor jacks, or lifts.

5.0 EXISTING NOISE CONDITIONS

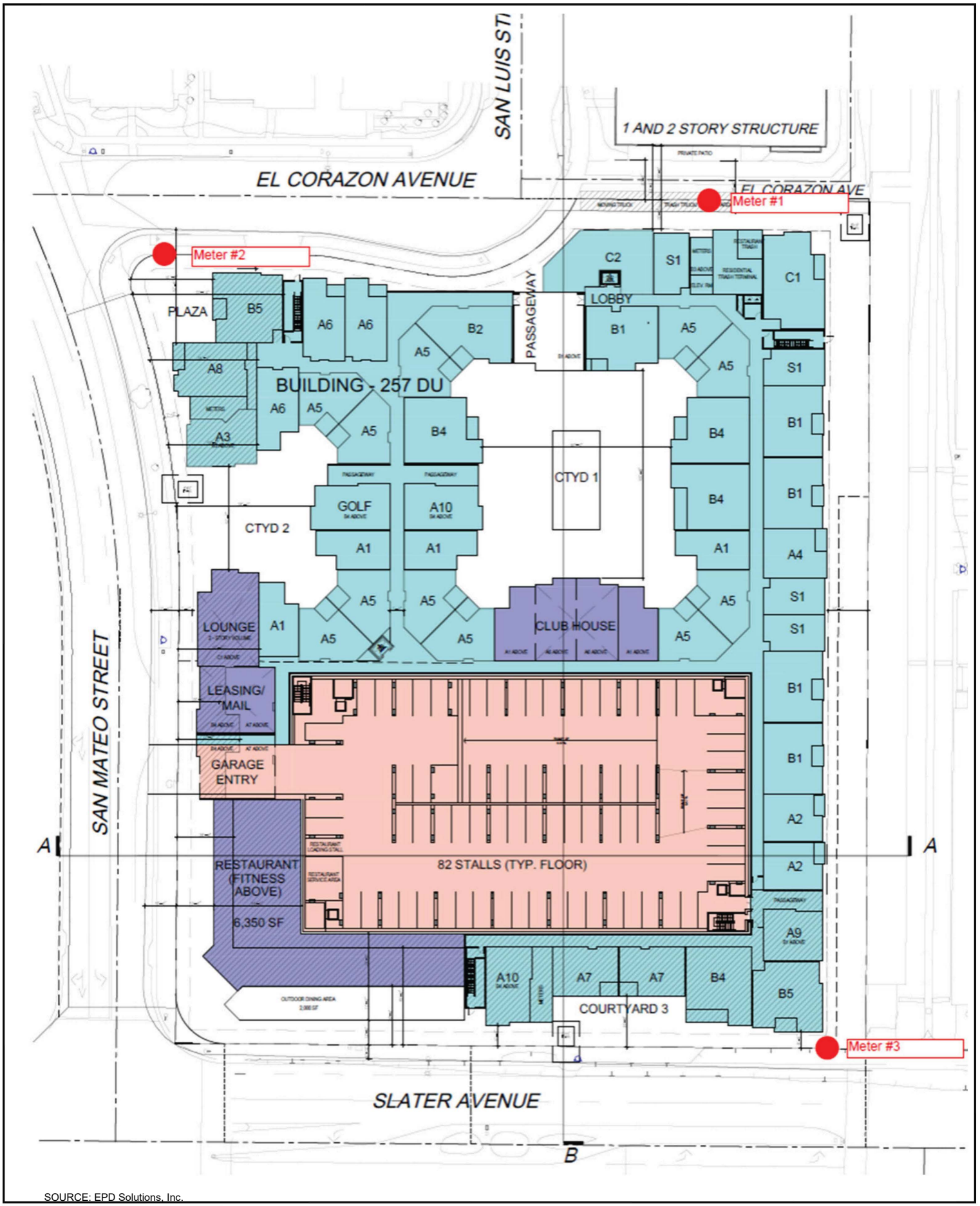
To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on Slater Avenue that is adjacent to the south side of the project site and San Mateo Street Avenue that is adjacent to the west side of the project site.

The noise monitoring locations were selected in order to obtain noise levels on the project site. Descriptions of the noise monitoring sites are provided below in Table F and are shown in Figure 3.

The results of the noise level measurements are presented in Table F. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table F also shows the L_{eq}, L_{max}, and CNEL, based on the entire measurement time. The noise monitoring data printouts are included in Appendix A.

Table F – Existing (Ambient) Noise Measurement Results

Site No.	Site Description	Average (dBA L_{eq})	Maximum (dBA L_{max})	(dBA $L_{eq\ 1\text{-}hour}$/Time) Minimum	(dBA $L_{eq\ 1\text{-}hour}$/Time) Maximum	Average (dBA CNEL)
1	Located near the northeast corner of the project site, approximately 115 feet east from the center point of the El Corazon Avenue and San Luis Street intersection.	53	74	41 1-2 a.m.	62 9-10 a.m.	55.9
2	Located near the northwest corner of the project site, approximately 35 feet south of El Corazon Avenue centerline and 70 feet east of San Mateo Street centerline	63	89	50 2-3 a.m.	69 8-9 p.m.	67.0
3	Located near the southeast corner of the project site, approximately 60 feet north of Slater Avenue centerline.	66	85	56 1-2 a.m.	70 10-11 a.m.	70.9



SOURCE: EPD Solutions, Inc.

VISTA ENVIRONMENTAL

Figure 3
Field Noise Monitoring Locations

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 G 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 Impact Analysis for the Slater Avenue Mixed Use Development Project* (Air Quality Analysis), prepared by EPD Solutions, Inc., July 2021.

Table G – 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])
Demolition				
Concrete/Industrial Saws	1	20	90	90
Excavators	3	40	85	81
Rubber Tired Dozers	2	40	85	82
Site Preparation				
Rubber Tired Dozers	3	40	85	82
Crawler Tractor	4	40	84	N/A
Grading				
Excavators	1	40	85	81
Grader	1	40	85	83
Rubber Tired Dozer	1	40	85	82
Crawler Tractor	3	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				
Cement & Mortar Mixers	2	40	85	79
Paver	1	50	85	77
Paving Equipment	2	50	85	77
Roller	2	20	85	80
Tractors/Loaders/ Backhoes[5]	1	40~~8~~	84	N/A
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.
[5] For the tractor, loader or backhoe, the tractor noise level was utilized, since it is the loudest of the three types of equipment.
Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table G 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 Table G 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 nosiest pieces of equipment as detailed in the FTA Manual. The RCNM model printouts are provided in Appendix B.

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.

FHWA Model Traffic Noise Prediction Model Inputs

The roadway parameters used for this study are presented in Table H. The roadway classifications are based on the City's General Plan Circulation Element (City of Fountain Valley, 2008). 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 exists along the sides of all analyzed roadways, soft site conditions were modeled.

Table H – FHWA Model Roadway Parameters

Roadway	Segment	General Plan Classification	Vehicle Speed (MPH)	Distance to Nearest Receptor[1] (feet)
Slater Avenue	West of Brookhurst Street	Primary	40	95
Slater Avenue	West of San Mateo Street	Primary	40	245
Slater Avenue	East of San Mateo Street	Primary	40	65
Slater Avenue	East of Ward Street	Secondary	40	60
Brookhurst Street	South of Slater Avenue	Major	45	80
Brookhurst Street	North of Slater Avenue	Major	45	85
Brookhurst Street	North of Warner Avenue	Major	45	65
San Mateo Street	North of Project Driveway	Local	30	45
San Mateo Street	South of Warner Avenue	Local	30	55

Notes:
[1] Distance measured from nearest offsite residential structure to centerline of roadway.
Source: City of Fountain Valley, 2019.

The average daily traffic (ADT) volumes were obtained from *Slater Avenue Mixed-Use Traffic Impact Analysis* (Traffic Impact Analysis), prepared by EPD Solutions, Inc., July 12, 2021. The ADT volumes were calculated by multiplying the PM peak hour intersection volumes by 12. The ADT volumes used in this analysis are shown in Table I.

Table I – Average Daily Traffic Volumes

		Average Daily Traffic Volumes			
Roadway	Segment	Existing	Existing + Project	Year 2023	Year 2023 + Project
Slater Avenue	West of Brookhurst Street	29,220	29,300	30,460	30,540
Slater Avenue	West of San Mateo Street	32,540	32,980	34,230	34,670
Slater Avenue	East of San Mateo Street	31,630	31,720	33,270	33,360
Slater Avenue	East of Ward Street	30,200	30,290	31,700	31,790
Brookhurst Street	South of Slater Avenue	55,920	56,240	59,330	59,650
Brookhurst Street	North of Slater Avenue	52,600	52,620	55,490	55,510
Brookhurst Street	North of Warner Avenue	59,650	59,720	62,580	62,650
San Mateo Street	North of Project Driveway	5,630	5,680	5,850	5,900
San Mateo Street	South of Warner Avenue	3,970	4,020	4,130	4,180

Source: EPD Solutions, Inc., 2021.

The vehicle mixes used in the FHWA-RD-77-108 Model are shown in Table J and the Arterial vehicle mix was obtained from the General Plan Noise Element (City of Fountain Valley, 1995) and the Local vehicle mix is based on typical vehicle mix observed in Southern California for similar local roadways. The vehicle

mix provides the hourly distribution percentages of automobiles, medium trucks, and heavy trucks for input into the FHWA model.

Table J – Roadway Vehicle Mixes

Vehicle Type	Traffic Flow Distributions			
	Day (7 a.m. to 7 p.m.)	Evening (7 p.m. to 10 p.m.)	Night (10 p.m. to 7 a.m.)	Overall
Local Vehicle Mix				
Automobiles	73.60%	13.60%	10.22%	97.42%
Medium Trucks	0.90%	0.90%	0.04%	1.84%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%
Arterial Vehicle Mix				
Automobiles	75.51%	12.57%	9.34%	97.42%
Medium Trucks	1.56%	0.09%	1.9%	1.84%
Heavy Trucks	0.64%	0.02%	0.08%	0.74%

Source: City of Fountain Valley, 1995.

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 K gives approximate vibration levels for particular construction activities. The data in Table K provides a reasonable estimate for a wide range of soil conditions.

Table K – 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 K and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table G.

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 demolition of the existing three commercial buildings and associated parking lots, site preparation and grading of the 3.34-acre project site, building construction of the proposed restaurant and residential complex, paving of the onsite roads and parking lots, and application of architectural coatings. Noise impacts from construction activities 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 the multi-family residences to the north that are located as near as 20 feet to the north of the project site. There are also multi-family residences located as near as 70 feet to the east of the project site

Section 6.28.070(5) of the City's Municipal Code exempts construction noise that occurs between 7:00 a.m. and 8:00 p.m. Monday through Friday and between 9:00 a.m. and 8:00 p.m. on Saturdays from the City's noise standards. All construction activities associated with the proposed project would occur during the allowable hours for construction activities as detailed in Section 6.28.070(5) of the Municipal Code. The project applicant has stated that all construction activities, including concrete pouring activities for the proposed parking structure, will occur during the City's allowable hours of construction. Project Design Feature 1 has been incorporated into this analysis in order to ensure all construction activities would occur during the allowable hours of construction as detailed in Section 6.28.070(5) of the City's Municipal Code.

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 impacts 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 G that shows the anticipated construction equipment per phase. The results are shown below in Table L and the RCNM printouts are provided in Appendix B.

Table L – Construction Noise Levels at the Nearest Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:	
	Nearest Homes to the North[1]	Nearest Homes to the East[2]
Demolition	73	73
Site Preparation	74	74
Grading	74	74
Building Construction	74	73
Paving	71	71
Painting	60	60
FTA Construction Noise Threshold[4]	**80**	**80**
Exceed Thresholds?	No	No

[1] The nearest homes to the north are located as near as 235 feet from the center of the project site.
[2] The nearest homes to the east are located as near as 245 feet from the center of the project site.
[4] The FTA Construction noise thresholds are detailed above in Table B.
Source: RCNM, Federal Highway Administration, 2006

Table L shows that the greatest noise impacts would occur during site preparation, grading and building construction phases, with a noise level as high as 74 dBA Leq at the nearest homes to the north. Table L also shows that none of the construction phases would exceed the FTA noise standard of 80 dB at the nearby homes. Therefore, through adherence to the limitation of allowable construction times provided in Section 6.28.070(5) of the Municipal Code, construction-related noise levels would not exceed any standards established in the General Plan or Noise Ordinance nor would construction activities create a substantial temporary increase in ambient noise levels from construction of the proposed project. Impacts would be less than significant.

Operational-Related Noise

The proposed project would consist of the development of a mixed-use development with a restaurant and a residential complex with 270 residential units. Potential noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the nearby roadways and from onsite activities, which have been analyzed separately below.

Roadway Vehicular Noise Impact to Nearby 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.

Policy 7.1.2 from the City's General Plan Noise Element, requires measures to be established to reduce noise impacts from traffic noise sources. However, the General Plan does not quantify what is a significant degradation of the future acoustic environment. As such this impact analysis has utilized guidance from the Federal Transit Administration (FTA, 2018) that provides thresholds for increases in ambient noise from vehicular traffic based on increases to ambient noise. Based on FTA thresholds, an impact would occur if existing noise levels at noise-sensitive land uses (e.g. residential, etc.) are less than 60 dBA CNEL and the project creates an increase of 3 dBA CNEL or greater project-related noise level increase; or if existing noise levels range from 60 to 65 dBA CNEL and the project creates 2 dBA CNEL or greater noise level increase.

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 C. The proposed project's potential offsite traffic noise impacts have been analyzed for the existing year and project opening year 2023 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 M.

Table M – Existing Year Project Traffic Noise Contributions

		dBA CNEL at Nearest Receptor[1]			
Roadway	Segment	Existing No Project	Existing Plus Project	Project Contribution	Increase Threshold[2]
Slater Avenue	West of Brookhurst Street	64.8	64.8	0.0	+1 dBA
Slater Avenue	West of San Mateo Street	58.8	58.9	0.1	+3 dBA
Slater Avenue	East of San Mateo Street	67.9	67.9	0.0	+1 dBA
Slater Avenue	East of Ward Street	68.1	68.1	0.0	+1 dBA
Brookhurst Street	South of Slater Avenue	70.6	70.6	0.0	+1 dBA
Brookhurst Street	North of Slater Avenue	69.9	69.9	0.0	+1 dBA
Brookhurst Street	North of Warner Avenue	72.7	72.7	0.0	+1 dBA
San Mateo Street	North of Project Driveway	58.9	59.0	0.1	+3 dBA
San Mateo Street	South of Warner Avenue	56.1	56.1	0.0	+3 dBA

Notes:
[1] Distance to nearest sensitive receptors shown in Table H, does not take into account existing noise barriers.
[2] Increase Threshold obtained from the FTA's allowable noise impact exposures
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 existing conditions. Impacts would be less than significant.

Opening Year 2023 Conditions

The proposed project's potential offsite traffic noise impacts have been calculated through a comparison of the project opening year 2023 scenario to the opening year 2023 with project scenario. The results of this comparison are shown in Table N.

Table N – Opening Year 2023 Project Traffic Noise Contributions

		dBA CNEL at Nearest Receptor[1]			
Roadway	Segment	Year 2023	Year 2025 Plus Project	Project Contribution	Increase Threshold[2]
Slater Avenue	West of Brookhurst Street	64.9	64.9	0.0	+1 dBA
Slater Avenue	West of San Mateo Street	59.1	59.1	0.0	+3 dBA
Slater Avenue	East of San Mateo Street	68.1	68.1	0.0	+1 dBA
Slater Avenue	East of Ward Street	68.3	68.3	0.0	+1 dBA
Brookhurst Street	South of Slater Avenue	70.9	70.9	0.0	+1 dBA
Brookhurst Street	North of Slater Avenue	70.1	70.1	0.0	+1 dBA
Brookhurst Street	North of Warner Avenue	72.9	72.9	0.0	+1 dBA
San Mateo Street	North of Project Driveway	59.1	59.1	0.0	+3 dBA
San Mateo Street	South of Warner Avenue	56.3	56.3	0.0	+3 dBA

Notes:
[1] Distance to nearest sensitive receptors shown in Table H, does not take into account existing noise barriers.
[2] Increase Threshold obtained from the FTA's allowable noise impact exposures
Source: FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

Table N 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 project opening year 2023 conditions. Impacts would be less than significant.

Onsite Noise Impacts to Nearby Homes

The operation of the proposed project may create an increase in onsite noise levels from rooftop mechanical equipment, roof deck common area, dog relief areas, pool and spa area, trash collection activities, truck deliveries, and the proposed restaurant's outdoor dining area.

Section 6.28.050 of the City's Municipal Code limits noise created on the project site at the nearby residential properties to 55 dBA between 7 a.m. and 10 p.m. and to 50 dBA between 10 p.m. and 7 a.m.. It should be noted that noise from trash collection activities is exempt from Section 6.28.050 of the Municipal Code, provided that collection activities adhere to the standards provided in Section 6.08.140 of the Municipal Code, that requires collections to be made as quietly as possible and limits collections to be between 6:30 a.m. and 6:30 p.m.. In addition, truck deliveries are exempt from Section 6.28.050 of the Municipal Code, provided that truck deliveries adhere to the standards provided in Section 6.28.148 of the Municipal Code that restricts truck deliveries from occurring between 10 p.m. and 7 a.m. or at any time on a Sunday or legal holiday. As such, no further analysis of trash collections or truck deliveries are provided in this analysis.

In order to determine the noise impacts from the operation of rooftop mechanical equipment, roof deck common area, dog relief areas, pool and spa area, and outdoor dining area, reference noise

measurements were taken of each noise source and the reference noise measurements output files are provided in Appendix D. For the outdoor dining area, the reference noise measurement was taken at the Mosaic Bar and Grill outdoor dining area that had an active outdoor sound system that was playing music quietly that was approximately equal to ambient noise levels. The project applicant has stated that the proposed outdoor dining area would not have an outdoor sound system. Project Design Feature 2 has been included that restricts the installation of an outdoor sound system at the proposed outdoor dining area.

In order to account for the noise reduction provided by the proposed structures and parapet wall on the roof as well as the existing carport structure, adjacent to the east side of the project site, the wall attenuation equations from the *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans, September 2013, were utilized and the noise calculation spreadsheet along with the reference noise measurements are provided in Appendix D. Representative receivers to the north and east of the project site were analyzed and the results are shown in Table O.

Table O – Operational Noise Levels at the Nearby Homes

	Nearest Homes to North		Nearest Homes to East	
Noise Source	Distance - Source to Property Line (feet)	Noise Level (dBA Leq)	Distance - Source to Property Line (feet)	Noise Level (dBA Leq)
Rooftop Equipment[1]	95	26	90	21
Dog Relief Area[2]	95	25	70	25
Roof Deck Common Area[3]	290	22	330	21
Pool and Spa Area[4]	130	28	150	27
Outdoor Dining Area[5]	400	25	270	27
Combined Noise Level		**33**		**33**
City Noise Standards (day/night)		**55/50**		**55/50**
Exceed City Noise Standard?		**No/No**		**No/No**

Notes:
[1] Rooftop equipment is based on a reference noise measurement of 65.1 dBA at 6 feet.
[2] Dog Relief Area is based on a reference noise measurement of 60.2 dBA at 10 feet.
[3] Roof deck common area is based on the outdoor dining area reference noise measurement.
[4] Pool and spa area is based on a reference noise measurement of 66.6 dBA at 15 feet.
[5] Outdoor dining area is based on a reference noise measurement of 62.6 at 5 feet.
Source: Noise calculation methodology from Caltrans, 2013 (see Appendix D).

Table O shows that the proposed project's worst-case operational noise from the simultaneous operation of all noise sources on the project site would create a noise level of 33 dBA at the homes to the north and east of the project site. The worst-case operational noise level of 33 dBA would be within the City's residential noise standards of 55 dBA between 7 a.m. and 10 p.m. and 50 dBA between 10 p.m. and 7 a.m. Therefore, the onsite operational noise impacts would be less than significant.

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 demolition of the existing three commercial buildings and associated parking lots, site preparation and grading of the 3.34-acre project site, building construction of the proposed restaurant and residential complex, paving of the onsite roads and parking lots, 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 the multi-family residences to the north that are located as near as 20 feet to the north of the project site.

Since neither the Municipal nor the General Plan provide a quantifiable vibration threshold, guidance from the *Transportation and Construction-Induced Vibration Guidance Manual*, prepared by Caltrans, April 2020, has been utilized, which defines the level of distinctly perceptible vibration 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 K 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 homes (20 feet to north) would be 0.114 inch per second PPV. The vibration level at the nearest offsite structure where people likely sit, would be below the distinctly perceptible vibration level of 0.25 inch per second PPV, detailed above. Impacts would be less than significant.

Operations-Related Vibration Impacts

The proposed project would consist of the development of a mixed-use development with a restaurant and a residential complex with 270 residential units. The on-going operation of the proposed project would not include the operation of any known vibration sources. 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 John Wayne Airport that is located 5.3 miles southeast of the project site. The project site is located outside of the 60 dBA CNEL noise contours of this airport. Therefore, the proposed project would not be exposed to excessive aircraft noise. Impacts would be less than significant.

Level of Significance

Less than significant impact.

8.0 REFERENCES

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City of Fountain Valley, *Fountain Valley Municipal Code Chapter 6.28 Noise Control,* February 2021.

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EPD Solutions, Inc., *Slater Avenue Mixed-Use Traffic Impact Analysis,* July 12, 2021.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

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

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APPENDIX A

Field Noise Measurements Printouts

	Slater Avenue			San Mateo/El Corazon			NE Corner (Trash Bins)		
Time									
00-01	58	72	48	54	79	48	42	53	41
01-02	56	73	46	52	79	47	41	56	39
02-03	56	74	48	50	72	46	48	63	38
03-04	56	75	56	52	71	43	44	54	38
04-05	69	77	56	55	72	47	48	61	38
05-06	64	78	48	59	75	58	49	69	39
06-07	Cv	Cv	Cv	62	78	52	51	68	44
07-08	Cv	Cv	Cv	65	82	52	Cg	Cg	Cg
08-09	Cv	Cv	Cv	63	77	53	Cg	Cg	Cg
09-10	Cv	Cv	Cv	65	85	53	62	68	47
10-11	70	80	49	67	88	51	54	67	48
11-12	68	84	57	61	89	54	54	68	47
12-13	68	78	58	61	77	54	55	66	59
13-14	69	84	58	62	88	54	54	66	59
14-15	68	85	58	63	81	55	54	70	51
15-16	68	81	54	64	89	52	53	67	49
16-17	68	84	54	63	82	53	54	64	48
17-18	68	81	57	62	76	54	54	71	49
18-19	68	85	56	61	79	53	53	63	49
19-20	65	78	55	62	82	53	52	66	48
20-21	64	78	51	69	80	59	48	74	47
21-22	66	80	49	69	84	48	44	66	43
22-23	60	79	48	55	71	50	44	56	41
23-24	59	74	48	54	75	49	43	54	41
	LEQ	Lmax	Lmin	LEQ	Lmax	Lmin	Leq	Lmax	Lmin

Cv = contaminated due to vandalized meter Cg = contaminated due to car detailer generator

	Slater Avenue			San Mateo/El Corazon			NE Corner (Trash Bins)		
Time									
00-01	58	72	48	54	79	48	42	53	41
01-02	56	73	46	52	79	47	41	56	39
02-03	56	74	48	50	72	46	48	63	38
03-04	56	75	56	52	71	43	44	54	38
04-05	69	77	56	55	72	47	48	61	38
05-06	64	78	48	59	75	58	49	69	39
06-07	67	Cv	Cv	62	78	52	51	68	44
07-08	67	Cv	Cv	65	82	52	52.5	Cg	Cg
08-09	67	Cv	Cv	63	77	53	52.5	Cg	Cg
09-10	67	Cv	Cv	65	85	53	62	68	47
10-11	70	80	49	67	88	51	54	67	48
11-12	68	84	57	61	89	54	54	68	47
12-13	68	78	58	61	77	54	55	66	59
13-14	69	84	58	62	88	54	54	66	59
14-15	68	85	58	63	81	55	54	70	51
15-16	68	81	54	64	89	52	53	67	49
16-17	68	84	54	63	82	53	54	64	48
17-18	68	81	57	62	76	54	54	71	49
18-19	68	85	56	61	79	53	53	63	49
19-20	65	78	55	62	82	53	52	66	48
20-21	64	78	51	69	80	59	48	74	47
21-22	66	80	49	69	84	48	44	66	43
22-23	60	79	48	55	71	50	44	56	41
23-24	59	74	48	54	75	49	43	54	41
	LEQ	Lmax	Lmin	LEQ	Lmax	Lmin	Leq	Lmax	Lmin
	56	85		50	89		41	74	Leq 24
	70			69			62		

	Slater Ave			San Mateo/El Corazon			NE Corner		
630957.344	68	6309573.445	251188.6432	64	2511886.4	15848.93	52	158489.3
398107.171	66	3981071.706	158489.3192	62	1584893.2	12589.25	51	125892.5
398107.171	66	3981071.706	100000	60	1000000	63095.73	58	630957.3
398107.171	66	3981071.706	158489.3192	62	1584893.2	25118.86	54	251188.6
7943282.35	79	79432823.47	316227.766	65	3162277.7	63095.73	58	630957.3
2511886.43	74	25118864.32	794328.2347	69	7943282.3	79432.82	59	794328.2
5011872.34	77	50118723.36	1584893.192	72	15848932	125892.5	61	1258925
5011872.34	67	5011872.336	3162277.66	65	3162277.7	177827.9	52.5	177827.9
5011872.34	67	5011872.336	1995262.315	63	1995262.3	177827.9	52.5	177827.9
5011872.34	67	5011872.336	3162277.66	65	3162277.7	1584893	62	1584893
10000000	70	10000000	5011872.336	67	5011872.3	251188.6	54	251188.6
6309573.44	68	6309573.445	1258925.412	61	1258925.4	251188.6	54	251188.6
6309573.44	68	6309573.445	1258925.412	61	1258925.4	316227.8	55	316227.8
7943282.35	69	7943282.347	1584893.192	62	1584893.2	251188.6	54	251188.6
6309573.44	68	6309573.445	1995262.315	63	1995262.3	251188.6	54	251188.6
6309573.44	68	6309573.445	2511886.432	64	2511886.4	199526.2	53	199526.2
6309573.44	68	6309573.445	1995262.315	63	1995262.3	251188.6	54	251188.6
6309573.44	68	6309573.445	1584893.192	62	1584893.2	251188.6	54	251188.6
6309573.44	68	6309573.445	1258925.412	61	1258925.4	199526.2	53	199526.2
3162277.66	70	10000000	1584893.192	67	5011872.3	158489.3	57	501187.2
2511886.43	69	7943282.347	7943282.347	74	25118864	63095.73	53	199526.2
3981071.71	71	12589254.12	7943282.347	74	25118864	25118.86	49	79432.82
1000000	70	10000000	316227.766	65	3162277.7	25118.86	54	251188.6
794328.235	69	7943282.347	251188.6432	64	2511886.4	19952.62	53	199526.2
105887797		298544932	48183154.42		121340593	4839810		9244561
66.4	**CNEL**	**70.9**	eq 24	**63.0**	**CNEL**	**67.0**	24	**53.0**	**CNEL**	**55.9**

APPENDIX B

RCNM Model Construction Noise Calculation Printouts

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Demolition

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to North	Residential	53	53	53

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	235	0
Excavator	No	40		80.7	235	0
Excavator	No	40		80.7	235	0
Excavator	No	40		80.7	235	0
Dozer	No	40		81.7	235	0
Dozer	No	40		81.7	235	0

			Results			
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	76.1	69.1	N/A	N/A	N/A	N/A
Excavator	67.3	63.3	N/A	N/A	N/A	N/A
Excavator	67.3	63.3	N/A	N/A	N/A	N/A
Excavator	67.3	63.3	N/A	N/A	N/A	N/A
Dozer	68.2	64.2	N/A	N/A	N/A	N/A
Dozer	68.2	64.2	N/A	N/A	N/A	N/A
Total	**76**	**73**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Demolition

				---- Receptor #2 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to East	Residential	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	245	0
Excavator	No	40		80.7	245	0
Excavator	No	40		80.7	245	0
Excavator	No	40		80.7	245	0
Dozer	No	40		81.7	245	0
Dozer	No	40		81.7	245	0

		Calculated (dBA)		Results			
				Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		75.8	68.8	N/A	N/A	N/A	N/A
Excavator		66.9	62.9	N/A	N/A	N/A	N/A
Excavator		66.9	62.9	N/A	N/A	N/A	N/A
Excavator		66.9	62.9	N/A	N/A	N/A	N/A
Dozer		67.9	63.9	N/A	N/A	N/A	N/A
Dozer		67.9	63.9	N/A	N/A	N/A	N/A
	Total	**76**	**73**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Site Preparation

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to North	Residential	53	53	53

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	235	0
Dozer	No	40		81.7	235	0
Dozer	No	40		81.7	235	0
Tractor	No	40	84		235	0
Tractor	No	40	84		235	0
Tractor	No	40	84		235	0
Tractor	No	40	84		235	0

		Calculated (dBA)		Results		Noise Limits (dBA)	
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		68.2	64.2	N/A	N/A	N/A	N/A
Dozer		68.2	64.2	N/A	N/A	N/A	N/A
Dozer		68.2	64.2	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
	Total	**71**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Site Preparation

				---- Receptor #2 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to East	Residential	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	245	0
Dozer	No	40		81.7	245	0
Dozer	No	40		81.7	245	0
Tractor	No	40	84		245	0
Tractor	No	40	84		245	0
Tractor	No	40	84		245	0
Tractor	No	40	84		245	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		67.9	63.9	N/A	N/A	N/A	N/A
Dozer		67.9	63.9	N/A	N/A	N/A	N/A
Dozer		67.9	63.9	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
	Total	**70**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to North	Residential	53	53	53

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	235	0
Grader	No	40	85		235	0
Dozer	No	40		81.7	235	0
Tractor	No	40	84		235	0
Tractor	No	40	84		235	0
Tractor	No	40	84		235	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Leq	Evening Lmax	Leq
Excavator		67.3	63.3	N/A	N/A	N/A	N/A
Grader		71.6	67.6	N/A	N/A	N/A	N/A
Dozer		68.2	64.2	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
	Total	**72**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Grading

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to East	Residential	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	245	0
Grader	No	40	85		245	0
Dozer	No	40		81.7	245	0
Tractor	No	40	84		245	0
Tractor	No	40	84		245	0
Tractor	No	40	84		245	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Leq	Evening Lmax	Leq
Excavator		66.9	62.9	N/A	N/A	N/A	N/A
Grader		71.2	67.2	N/A	N/A	N/A	N/A
Dozer		67.9	63.9	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
	Total	**71**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Building Construction

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to North	Residential	53	53	53

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	235	0
Gradall	No	40		83.4	235	0
Gradall	No	40		83.4	235	0
Gradall	No	40		83.4	235	0
Generator	No	50		80.6	235	0
Tractor	No	40	84		235	0
Front End Loader	No	40		79.1	235	0
Backhoe	No	40		77.6	235	0
Welder / Torch	No	40		74	235	0

		Calculated (dBA)		Results			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		67.1	59.1	N/A	N/A	N/A	N/A
Gradall		70.0	66.0	N/A	N/A	N/A	N/A
Gradall		70.0	66.0	N/A	N/A	N/A	N/A
Gradall		70.0	66.0	N/A	N/A	N/A	N/A
Generator		67.2	64.2	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
Front End Loader		65.7	61.7	N/A	N/A	N/A	N/A
Backhoe		64.1	60.1	N/A	N/A	N/A	N/A
Welder / Torch		60.6	56.6	N/A	N/A	N/A	N/A
	Total	**71**	**74**	N/A	N/A	N/A	N/A

Noise Limits (dBA)

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Building Construction

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to East	Residential	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	245	0
Gradall	No	40		83.4	245	0
Gradall	No	40		83.4	245	0
Gradall	No	40		83.4	245	0
Generator	No	50		80.6	245	0
Tractor	No	40	84		245	0
Front End Loader	No	40		79.1	245	0
Backhoe	No	40		77.6	245	0
Welder / Torch	No	40		74	245	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Crane		66.7	58.8	N/A	N/A	N/A	N/A
Gradall		69.6	65.6	N/A	N/A	N/A	N/A
Gradall		69.6	65.6	N/A	N/A	N/A	N/A
Gradall		69.6	65.6	N/A	N/A	N/A	N/A
Generator		66.8	63.8	N/A	N/A	N/A	N/A
Tractor		70.2	66.2	N/A	N/A	N/A	N/A
Front End Loader		65.3	61.3	N/A	N/A	N/A	N/A
Backhoe		63.8	59.8	N/A	N/A	N/A	N/A
Welder / Torch		60.2	56.2	N/A	N/A	N/A	N/A
	Total	**70**	**73**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to North	Residential	53	53	53.0

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	235	0
Concrete Mixer Truck	No	40		78.8	235	0
Paver	No	50		77.2	235	0
Paver	No	50		77.2	235	0
Paver	No	50		77.2	235	0
Roller	No	20		80	235	0
Roller	No	20		80	235	0
Tractor	No	40	84		235	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		65.4	61.4	N/A	N/A	N/A	N/A
Concrete Mixer Truck		65.4	61.4	N/A	N/A	N/A	N/A
Paver		63.8	60.8	N/A	N/A	N/A	N/A
Paver		63.8	60.8	N/A	N/A	N/A	N/A
Paver		63.8	60.8	N/A	N/A	N/A	N/A
Roller		66.6	59.6	N/A	N/A	N/A	N/A
Roller		66.6	59.6	N/A	N/A	N/A	N/A
Tractor		70.6	66.6	N/A	N/A	N/A	N/A
	Total	**71**	**71**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Paving

				---- Receptor #2 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Homes to East	Residential	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	245	0
Concrete Mixer Truck	No	40		78.8	245	0
Paver	No	50		77.2	245	0
Paver	No	50		77.2	245	0
Paver	No	50		77.2	245	0
Roller	No	20		80	245	0
Roller	No	20		80	245	0
Tractor	No	40	84		245	0

			Results			
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	65.0	61.0	N/A	N/A	N/A	N/A
Concrete Mixer Truck	65.0	61.0	N/A	N/A	N/A	N/A
Paver	63.4	60.4	N/A	N/A	N/A	N/A
Paver	63.4	60.4	N/A	N/A	N/A	N/A
Paver	63.4	60.4	N/A	N/A	N/A	N/A
Roller	66.2	59.2	N/A	N/A	N/A	N/A
Roller	66.2	59.2	N/A	N/A	N/A	N/A
Tractor	70.2	66.2	N/A	N/A	N/A	N/A
Total	**70**	**71**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/27/2021
Case Description: Slater Avenue Mixed-Use Project - Painting

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to North	Residential	53.0	53.0	53.0

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	235	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Noise Limits (dBA) Evening Lmax	Evening Leq
Compressor (air)	64.2	60.2	N/A	N/A	N/A	N/A
Total	**64**	**60**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Homes to East	Residential	66	66	66

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	245	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax	Day Leq	Noise Limits (dBA) Evening Lmax	Evening Leq
Compressor (air)	63.9	59.9	N/A	N/A	N/A	N/A
Total	**64**	**60**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX C

FHWA Model Traffic Noise Calculation Printouts

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

Scenario: EXISTING CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (SR-39)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	75.51%	12.57%	9.34%	97.42%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.56%	0.09%	0.19%	1.84%	0.62%	0.12%	0.40%	1.13%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	0.64%	0.02%	0.08%	0.74%	0.29%	0.03%	0.26%	0.58%

Road Name: Slater Avenue **Segment: West of Brookhurst Street**

Average Daily Traffic: 29220 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 91.37 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.22	-4.03	-1.20	65.35	63.33	61.57	55.51	64.13	64.74	70 dBA:	**39**	**42**
Medium Trucks	76.31	-14.02	-4.03	-1.20	57.06	38.20	31.83	30.31	38.76	38.99	65 dBA:	**83**	**92**
Heavy Trucks	81.16	-17.98	-4.03	-1.20	57.95	35.22	26.19	27.44	35.79	35.92	60 dBA:	**180**	**197**
				Total:	**66.59**	**63.35**	**61.57**	**55.53**	**64.15**	**64.76**	55 dBA:	**387**	**425**

Road Name: Slater Avenue **Segment: West of San Mateo Street**

Average Daily Traffic: 32540 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 245 FEET FROM CENTERLINE (Equiv. Lane Dist: 243.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.68	-10.42	-1.20	59.43	57.41	55.65	49.59	58.21	58.82	70 dBA:	**40**	**44**
Medium Trucks	76.31	-13.55	-10.42	-1.20	51.14	32.28	25.91	24.38	32.84	33.07	65 dBA:	**87**	**95**
Heavy Trucks	81.16	-17.51	-10.42	-1.20	52.03	29.30	20.27	21.52	29.87	30.00	60 dBA:	**187**	**205**
				Total:	**60.67**	**57.43**	**55.65**	**49.61**	**58.23**	**58.83**	55 dBA:	**402**	**441**

Road Name: Slater Avenue **Segment: East of San Mateo Street**

Average Daily Traffic: 31630 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.57 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.56	-1.24	-1.20	68.48	66.47	64.70	58.64	67.26	67.87	70 dBA:	**43**	**47**
Medium Trucks	76.31	-13.68	-1.24	-1.20	60.19	41.33	34.96	33.44	41.89	42.12	65 dBA:	**92**	**101**
Heavy Trucks	81.16	-17.63	-1.24	-1.20	61.08	38.35	29.32	30.57	38.92	39.05	60 dBA:	**199**	**218**
				Total:	**69.72**	**66.48**	**64.70**	**58.66**	**67.28**	**67.89**	55 dBA:	**428**	**470**

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

Scenario: EXISTING CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: Slater Avenue **Segment: East of Ward Street**
Average Daily Traffic: 30200 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Secondary

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.36	-0.87	-1.20	68.66	66.64	64.88	58.82	67.44	68.05	70 dBA:	**41**	**45**
Medium Trucks	76.31	-13.88	-0.87	-1.20	60.37	41.51	35.14	33.61	42.07	42.30	65 dBA:	**88**	**96**
Heavy Trucks	81.16	-17.83	-0.87	-1.20	61.26	38.53	29.50	30.75	39.10	39.23	60 dBA:	**189**	**207**
				Total:	**69.90**	**66.66**	**64.88**	**58.84**	**67.46**	**68.06**	55 dBA:	**406**	**446**

Road Name: Brookhurst Street **Segment: South of Slater Avenue**
Average Daily Traffic: 55920 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Major

	NOISE PARAMETERS AT 80 FEET FROM CENTERLINE (Equiv. Lane Dist: 71.94 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.52	-2.47	-1.20	71.20	69.18	67.42	61.36	69.98	70.59	70 dBA:	**80**	**88**
Medium Trucks	77.62	-11.71	-2.47	-1.20	62.24	43.37	37.01	35.48	43.94	44.17	65 dBA:	**172**	**189**
Heavy Trucks	82.14	-15.67	-2.47	-1.20	62.80	40.07	31.04	32.29	40.64	40.77	60 dBA:	**371**	**407**
				Total:	**72.24**	**69.20**	**67.42**	**61.37**	**70.00**	**70.60**	55 dBA:	**800**	**878**

Road Name: Brookhurst Street **Segment: North of Slater Avenue**
Average Daily Traffic: 52600 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Major

	NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 77.46 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.26	-2.95	-1.20	70.45	68.44	66.67	60.61	69.23	69.84	70 dBA:	**76**	**83**
Medium Trucks	77.62	-11.98	-2.95	-1.20	61.49	42.63	36.26	34.73	43.19	43.42	65 dBA:	**163**	**179**
Heavy Trucks	82.14	-15.94	-2.95	-1.20	62.05	39.32	30.29	31.54	39.89	40.02	60 dBA:	**352**	**386**
				Total:	**71.49**	**68.45**	**66.68**	**60.63**	**69.25**	**69.86**	55 dBA:	**758**	**831**

Road Name: Brookhurst Street **Segment: North of Warner Avenue**
Average Daily Traffic: 59650 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Major

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.81	-0.70	-1.20	73.25	71.24	69.47	63.41	72.04	72.64	70 dBA:	**89**	**98**
Medium Trucks	77.62	-11.43	-0.70	-1.20	64.29	45.43	39.06	37.54	45.99	46.22	65 dBA:	**192**	**211**
Heavy Trucks	82.14	-15.39	-0.70	-1.20	64.86	42.13	33.09	34.34	42.70	42.82	60 dBA:	**414**	**454**
				Total:	**74.30**	**71.26**	**69.48**	**63.43**	**72.05**	**72.66**	55 dBA:	**891**	**978**

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

Scenario: EXISTING CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: San Mateo Street **Segment: North of Project Driveway**

Average Daily Traffic: 5630 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 44.45 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-2.69	0.66	-1.20	59.29	57.17	55.85	49.84	58.26	58.89	70 dBA:	**7**	**8**
Medium Trucks	73.11	-19.92	0.66	-1.20	52.65	31.40	37.42	19.13	32.28	35.03	65 dBA:	**16**	**18**
Heavy Trucks	80.26	-23.88	0.66	-1.20	55.84	30.49	27.09	31.74	37.94	38.04	60 dBA:	**35**	**38**
				Total:	**61.52**	**57.19**	**55.92**	**49.91**	**58.31**	**58.94**	55 dBA:	**75**	**82**

Road Name: San Mateo Street **Segment: South of Warner Avenue**

Average Daily Traffic: 3970 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.55 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-4.20	-0.67	-1.20	56.44	54.32	53.00	46.99	55.41	56.04	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.44	-0.67	-1.20	49.80	28.55	34.57	16.28	29.42	32.18	65 dBA:	**13**	**14**
Heavy Trucks	80.26	-25.40	-0.67	-1.20	52.99	27.64	24.24	28.89	35.09	35.19	60 dBA:	**27**	**30**
				Total:	**58.66**	**54.34**	**53.07**	**47.06**	**55.46**	**56.09**	55 dBA:	**59**	**65**

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

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (SR-39)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	75.51%	12.57%	9.34%	97.42%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.56%	0.09%	0.19%	1.84%	0.62%	0.12%	0.40%	1.13%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	0.64%	0.02%	0.08%	0.74%	0.29%	0.03%	0.26%	0.58%

Road Name: Slater Avenue **Segment: West of Brookhurst Street**

Average Daily Traffic: 29300 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 91.37 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.23	-4.03	-1.20	65.36	63.35	61.58	55.52	64.14	64.75	70 dBA:	**39**	**43**
Medium Trucks	76.31	-14.01	-4.03	-1.20	57.07	38.21	31.84	30.32	38.77	39.00	65 dBA:	**84**	**92**
Heavy Trucks	81.16	-17.96	-4.03	-1.20	57.96	35.23	26.20	27.45	35.80	35.93	60 dBA:	**180**	**197**
				Total:	**66.60**	**63.37**	**61.59**	**55.54**	**64.16**	**64.77**	55 dBA:	**388**	**425**

Road Name: Slater Avenue **Segment: West of San Mateo Street**

Average Daily Traffic: 32980 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 245 FEET FROM CENTERLINE (Equiv. Lane Dist: 243.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.74	-10.42	-1.20	59.48	57.47	55.71	49.64	58.27	58.88	70 dBA:	**41**	**45**
Medium Trucks	76.31	-13.50	-10.42	-1.20	51.20	32.34	25.97	24.44	32.90	33.13	65 dBA:	**87**	**96**
Heavy Trucks	81.16	-17.45	-10.42	-1.20	52.09	29.36	20.33	21.58	29.93	30.06	60 dBA:	**188**	**207**
				Total:	**60.72**	**57.49**	**55.71**	**49.66**	**58.29**	**58.89**	55 dBA:	**406**	**445**

Road Name: Slater Avenue **Segment: East of San Mateo Street**

Average Daily Traffic: 31720 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.57 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.57	-1.24	-1.20	68.49	66.48	64.71	58.65	67.28	67.88	70 dBA:	**43**	**47**
Medium Trucks	76.31	-13.66	-1.24	-1.20	60.20	41.34	34.97	33.45	41.90	42.14	65 dBA:	**92**	**101**
Heavy Trucks	81.16	-17.62	-1.24	-1.20	61.09	38.36	29.33	30.58	38.94	39.06	60 dBA:	**199**	**219**
				Total:	**69.73**	**66.50**	**64.72**	**58.67**	**67.29**	**67.90**	55 dBA:	**429**	**471**

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

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: Slater Avenue **Segment: East of Ward Street**

Average Daily Traffic: 30290 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 2 | Roadway Classification: Secondary

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.37	-0.87	-1.20	68.67	66.66	64.89	58.83	67.45	68.06	70 dBA:	**41**	**45**
Medium Trucks	76.31	-13.86	-0.87	-1.20	60.38	41.52	35.15	33.63	42.08	42.31	65 dBA:	**88**	**96**
Heavy Trucks	81.16	-17.82	-0.87	-1.20	61.27	38.54	29.51	30.76	39.11	39.24	60 dBA:	**189**	**207**
				Total:	**69.91**	**66.68**	**64.90**	**58.85**	**67.47**	**68.08**	55 dBA:	**407**	**447**

Road Name: Brookhurst Street **Segment: South of Slater Avenue**

Average Daily Traffic: 56240 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Major

	NOISE PARAMETERS AT 80 FEET FROM CENTERLINE (Equiv. Lane Dist: 71.94 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.55	-2.47	-1.20	71.22	69.21	67.44	61.38	70.01	70.61	70 dBA:	**80**	**88**
Medium Trucks	77.62	-11.69	-2.47	-1.20	62.26	43.40	37.03	35.51	43.96	44.19	65 dBA:	**173**	**190**
Heavy Trucks	82.14	-15.64	-2.47	-1.20	62.82	40.09	31.06	32.31	40.67	40.79	60 dBA:	**373**	**409**
				Total:	**72.26**	**69.23**	**67.45**	**61.40**	**70.02**	**70.63**	55 dBA:	**803**	**881**

Road Name: Brookhurst Street **Segment: North of Slater Avenue**

Average Daily Traffic: 52620 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Major

	NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 77.46 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.26	-2.95	-1.20	70.45	68.44	66.67	60.61	69.24	69.84	70 dBA:	**76**	**83**
Medium Trucks	77.62	-11.98	-2.95	-1.20	61.49	42.63	36.26	34.73	43.19	43.42	65 dBA:	**163**	**179**
Heavy Trucks	82.14	-15.93	-2.95	-1.20	62.05	39.32	30.29	31.54	39.89	40.02	60 dBA:	**352**	**386**
				Total:	**71.49**	**68.46**	**66.68**	**60.63**	**69.25**	**69.86**	55 dBA:	**758**	**832**

Road Name: Brookhurst Street **Segment: North of Warner Avenue**

Average Daily Traffic: 59720 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Major

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.81	-0.70	-1.20	73.26	71.25	69.48	63.42	72.04	72.65	70 dBA:	**89**	**98**
Medium Trucks	77.62	-11.43	-0.70	-1.20	64.30	45.44	39.07	37.54	46.00	46.23	65 dBA:	**192**	**211**
Heavy Trucks	82.14	-15.38	-0.70	-1.20	64.86	42.13	33.10	34.35	42.70	42.83	60 dBA:	**414**	**454**
				Total:	**74.30**	**71.26**	**69.48**	**63.44**	**72.06**	**72.66**	55 dBA:	**892**	**978**

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

Scenario: EXISTING WITH PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: San Mateo Street **Segment: North of Project Driveway**

Average Daily Traffic: 5680 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 44.45 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-2.65	0.66	-1.20	59.33	57.21	55.89	49.88	58.30	58.93	70 dBA:	**8**	**8**
Medium Trucks	73.11	-19.88	0.66	-1.20	52.69	31.44	37.46	19.17	32.31	35.07	65 dBA:	**16**	**18**
Heavy Trucks	80.26	-23.84	0.66	-1.20	55.88	30.53	27.13	31.78	37.98	38.08	60 dBA:	**35**	**38**
				Total:	**61.55**	**57.23**	**55.96**	**49.95**	**58.35**	**58.98**	55 dBA:	**75**	**83**

Road Name: San Mateo Street **Segment: South of Warner Avenue**

Average Daily Traffic: 4020 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.55 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-4.15	-0.67	-1.20	56.49	54.37	53.06	47.05	55.47	56.09	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.39	-0.67	-1.20	49.86	28.61	34.63	16.34	29.48	32.23	65 dBA:	**13**	**14**
Heavy Trucks	80.26	-25.34	-0.67	-1.20	53.05	27.70	24.30	28.95	35.14	35.24	60 dBA:	**28**	**30**
				Total:	**58.72**	**54.39**	**53.13**	**47.12**	**55.52**	**56.15**	55 dBA:	**60**	**66**

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

Scenario: OPENING YEAR 2023 WITHOUT PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (SR-39)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	75.51%	12.57%	9.34%	97.42%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.56%	0.09%	0.19%	1.84%	0.62%	0.12%	0.40%	1.13%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	0.64%	0.02%	0.08%	0.74%	0.29%	0.03%	0.26%	0.58%

Road Name: Slater Avenue **Segment: West of Brookhurst Street**

Average Daily Traffic: 30460 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 91.37 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.40	-4.03	-1.20	65.53	63.51	61.75	55.69	64.31	64.92	70 dBA:	**40**	**44**
Medium Trucks	76.31	-13.84	-4.03	-1.20	57.24	38.38	32.01	30.49	38.94	39.17	65 dBA:	**86**	**94**
Heavy Trucks	81.16	-17.80	-4.03	-1.20	58.13	35.40	26.37	27.62	35.97	36.10	60 dBA:	**185**	**203**
				Total:	**66.77**	**63.53**	**61.75**	**55.71**	**64.33**	**64.94**	55 dBA:	**398**	**437**

Road Name: Slater Avenue **Segment: West of San Mateo Street**

Average Daily Traffic: 34230 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 245 FEET FROM CENTERLINE (Equiv. Lane Dist: 243.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.90	-10.42	-1.20	59.65	57.63	55.87	49.81	58.43	59.04	70 dBA:	**42**	**46**
Medium Trucks	76.31	-13.33	-10.42	-1.20	51.36	32.50	26.13	24.60	33.06	33.29	65 dBA:	**90**	**98**
Heavy Trucks	81.16	-17.29	-10.42	-1.20	52.25	29.52	20.49	21.74	30.09	30.22	60 dBA:	**193**	**212**
				Total:	**60.89**	**57.65**	**55.87**	**49.83**	**58.45**	**59.05**	55 dBA:	**416**	**457**

Road Name: Slater Avenue **Segment: East of San Mateo Street**

Average Daily Traffic: 33270 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.57 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.78	-1.24	-1.20	68.70	66.68	64.92	58.86	67.48	68.09	70 dBA:	**44**	**49**
Medium Trucks	76.31	-13.46	-1.24	-1.20	60.41	41.55	35.18	33.66	42.11	42.34	65 dBA:	**95**	**105**
Heavy Trucks	81.16	-17.41	-1.24	-1.20	61.30	38.57	29.54	30.79	39.14	39.27	60 dBA:	**206**	**226**
				Total:	**69.94**	**66.70**	**64.92**	**58.88**	**67.50**	**68.11**	55 dBA:	**443**	**486**

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

Scenario: OPENING YEAR 2023 WITHOUT PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: Slater Avenue **Segment: East of Ward Street**
Average Daily Traffic: 31700 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Secondary

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.57	-0.87	-1.20	68.87	66.85	65.09	59.03	67.65	68.26	70 dBA:	**42**	**46**
Medium Trucks	76.31	-13.67	-0.87	-1.20	60.58	41.72	35.35	33.83	42.28	42.51	65 dBA:	**90**	**99**
Heavy Trucks	81.16	-17.62	-0.87	-1.20	61.47	38.74	29.71	30.96	39.31	39.44	60 dBA:	**195**	**214**
				Total:	**70.11**	**66.87**	**65.09**	**59.05**	**67.67**	**68.28**	55 dBA:	**420**	**460**

Road Name: Brookhurst Street **Segment: South of Slater Avenue**
Average Daily Traffic: 59330 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Major

	NOISE PARAMETERS AT 80 FEET FROM CENTERLINE (Equiv. Lane Dist: 71.94 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.78	-2.47	-1.20	71.45	69.44	67.68	61.61	70.24	70.85	70 dBA:	**83**	**91**
Medium Trucks	77.62	-11.46	-2.47	-1.20	62.49	43.63	37.26	35.74	44.19	44.42	65 dBA:	**179**	**197**
Heavy Trucks	82.14	-15.41	-2.47	-1.20	63.06	40.33	31.30	32.54	40.90	41.02	60 dBA:	**386**	**424**
				Total:	**72.50**	**69.46**	**67.68**	**61.63**	**70.26**	**70.86**	55 dBA:	**832**	**913**

Road Name: Brookhurst Street **Segment: North of Slater Avenue**
Average Daily Traffic: 55490 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Major

	NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 77.46 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.49	-2.95	-1.20	70.68	68.67	66.90	60.84	69.47	70.07	70 dBA:	**79**	**86**
Medium Trucks	77.62	-11.75	-2.95	-1.20	61.72	42.86	36.49	34.97	43.42	43.65	65 dBA:	**169**	**186**
Heavy Trucks	82.14	-15.70	-2.95	-1.20	62.28	39.55	30.52	31.77	40.13	40.25	60 dBA:	**364**	**400**
				Total:	**71.72**	**68.69**	**66.91**	**60.86**	**69.48**	**70.09**	55 dBA:	**785**	**861**

Road Name: Brookhurst Street **Segment: North of Warner Avenue**
Average Daily Traffic: 62580 Vehicles Vehicle Speed: 45 MPH Vehicle Mix: 2 Roadway Classification: Major

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	6.01	-0.70	-1.20	73.46	71.45	69.68	63.62	72.25	72.85	70 dBA:	**92**	**101**
Medium Trucks	77.62	-11.22	-0.70	-1.20	64.50	45.64	39.27	37.75	46.20	46.43	65 dBA:	**198**	**217**
Heavy Trucks	82.14	-15.18	-0.70	-1.20	65.06	42.33	33.30	34.55	42.91	43.03	60 dBA:	**427**	**469**
				Total:	**74.50**	**71.47**	**69.69**	**63.64**	**72.26**	**72.87**	55 dBA:	**920**	**1009**

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

Scenario: OPENING YEAR 2023 WITHOUT PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: San Mateo Street **Segment: North of Project Driveway**

Average Daily Traffic: 5850 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 44.45 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-2.52	0.66	-1.20	59.46	57.33	56.02	50.01	58.43	59.05	70 dBA:	**8**	**8**
Medium Trucks	73.11	-19.76	0.66	-1.20	52.82	31.57	37.59	19.30	32.44	35.19	65 dBA:	**17**	**18**
Heavy Trucks	80.26	-23.71	0.66	-1.20	56.01	30.66	27.26	31.91	38.11	38.20	60 dBA:	**36**	**39**
				Total:	**61.68**	**57.35**	**56.09**	**50.08**	**58.48**	**59.11**	55 dBA:	**77**	**85**

Road Name: San Mateo Street **Segment: South of Warner Avenue**

Average Daily Traffic: 4130 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.55 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-4.03	-0.67	-1.20	56.61	54.49	53.17	47.16	55.58	56.21	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.27	-0.67	-1.20	49.97	28.72	34.75	16.45	29.60	32.35	65 dBA:	**13**	**14**
Heavy Trucks	80.26	-25.22	-0.67	-1.20	53.16	27.81	24.41	29.06	35.26	35.36	60 dBA:	**28**	**31**
				Total:	**58.84**	**54.51**	**53.24**	**47.23**	**55.63**	**56.26**	55 dBA:	**61**	**67**

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

Scenario: OPENING YEAR 2023 WITH PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

	Vehicle Mix 1 (Local)				Vehicle Mix 2 (Arterials)				Vehicle Mix 3 (SR-39)			
Vehicle Type	Day	Evening	Night	Daily	Day	Evening	Night	Daily	Day	Evenin	Night	Daily
Automobiles	73.60%	13.60%	10.22%	97.42%	75.51%	12.57%	9.34%	97.42%	68.04%	13.94%	16.31%	98.29%
Medium Trucks	0.90%	0.90%	0.04%	1.84%	1.56%	0.09%	0.19%	1.84%	0.62%	0.12%	0.40%	1.13%
Heavy Trucks	0.35%	0.04%	0.35%	0.74%	0.64%	0.02%	0.08%	0.74%	0.29%	0.03%	0.26%	0.58%

Road Name: Slater Avenue **Segment: West of Brookhurst Street**

Average Daily Traffic: 30540 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 95 FEET FROM CENTERLINE (Equiv. Lane Dist: 91.37 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.41	-4.03	-1.20	65.54	63.53	61.76	55.70	64.32	64.93	70 dBA:	**40**	**44**
Medium Trucks	76.31	-13.83	-4.03	-1.20	57.25	38.39	32.02	30.50	38.95	39.18	65 dBA:	**86**	**94**
Heavy Trucks	81.16	-17.78	-4.03	-1.20	58.14	35.41	26.38	27.63	35.98	36.11	60 dBA:	**185**	**203**
				Total:	**66.78**	**63.55**	**61.77**	**55.72**	**64.34**	**64.95**	55 dBA:	**399**	**437**

Road Name: Slater Avenue **Segment: West of San Mateo Street**

Average Daily Traffic: 34670 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 245 FEET FROM CENTERLINE (Equiv. Lane Dist: 243.62 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.96	-10.42	-1.20	59.70	57.69	55.92	49.86	58.49	59.09	70 dBA:	**42**	**46**
Medium Trucks	76.31	-13.28	-10.42	-1.20	51.42	32.55	26.19	24.66	33.12	33.35	65 dBA:	**90**	**99**
Heavy Trucks	81.16	-17.23	-10.42	-1.20	52.31	29.58	20.55	21.79	30.15	30.27	60 dBA:	**195**	**214**
				Total:	**60.94**	**57.71**	**55.93**	**49.88**	**58.51**	**59.11**	55 dBA:	**420**	**460**

Road Name: Slater Avenue **Segment: East of San Mateo Street**

Average Daily Traffic: 33360 Vehicles Vehicle Speed: 40 MPH Vehicle Mix: 2 Roadway Classification: Primary

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 59.57 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.79	-1.24	-1.20	68.71	66.70	64.93	58.87	67.49	68.10	70 dBA:	**44**	**49**
Medium Trucks	76.31	-13.45	-1.24	-1.20	60.42	41.56	35.19	33.67	42.12	42.35	65 dBA:	**96**	**105**
Heavy Trucks	81.16	-17.40	-1.24	-1.20	61.31	38.58	29.55	30.80	39.15	39.28	60 dBA:	**206**	**226**
				Total:	**69.95**	**66.72**	**64.94**	**58.89**	**67.51**	**68.12**	55 dBA:	**444**	**487**

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

Scenario: OPENING YEAR 2023 WITH PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: Slater Avenue **Segment: East of Ward Street**

Average Daily Traffic: 31790 Vehicles | Vehicle Speed: 40 MPH | Vehicle Mix: 2 | Roadway Classification: Secondary

	NOISE PARAMETERS AT 60 FEET FROM CENTERLINE (Equiv. Lane Dist: 56.2 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	67.36	3.58	-0.87	-1.20	68.88	66.87	65.10	59.04	67.66	68.27	70 dBA:	**42**	**46**
Medium Trucks	76.31	-13.65	-0.87	-1.20	60.59	41.73	35.36	33.84	42.29	42.52	65 dBA:	**91**	**99**
Heavy Trucks	81.16	-17.61	-0.87	-1.20	61.48	38.75	29.72	30.97	39.32	39.45	60 dBA:	**195**	**214**
				Total:	**70.12**	**66.89**	**65.11**	**59.06**	**67.68**	**68.29**	55 dBA:	**420**	**461**

Road Name: Brookhurst Street **Segment: South of Slater Avenue**

Average Daily Traffic: 59650 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Major

	NOISE PARAMETERS AT 80 FEET FROM CENTERLINE (Equiv. Lane Dist: 71.94 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.81	-2.47	-1.20	71.48	69.46	67.70	61.64	70.26	70.87	70 dBA:	**83**	**92**
Medium Trucks	77.62	-11.43	-2.47	-1.20	62.52	43.66	37.29	35.76	44.22	44.45	65 dBA:	**180**	**197**
Heavy Trucks	82.14	-15.39	-2.47	-1.20	63.08	40.35	31.32	32.57	40.92	41.05	60 dBA:	**388**	**425**
				Total:	**72.52**	**69.48**	**67.70**	**61.65**	**70.28**	**70.88**	55 dBA:	**835**	**916**

Road Name: Brookhurst Street **Segment: North of Slater Avenue**

Average Daily Traffic: 55510 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Major

	NOISE PARAMETERS AT 85 FEET FROM CENTERLINE (Equiv. Lane Dist: 77.46 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	5.49	-2.95	-1.20	70.68	68.67	66.90	60.84	69.47	70.07	70 dBA:	**79**	**86**
Medium Trucks	77.62	-11.75	-2.95	-1.20	61.72	42.86	36.49	34.97	43.42	43.65	65 dBA:	**169**	**186**
Heavy Trucks	82.14	-15.70	-2.95	-1.20	62.29	39.56	30.52	31.77	40.13	40.25	60 dBA:	**365**	**400**
				Total:	**71.73**	**68.69**	**66.91**	**60.86**	**69.48**	**70.09**	55 dBA:	**785**	**862**

Road Name: Brookhurst Street **Segment: North of Warner Avenue**

Average Daily Traffic: 62650 Vehicles | Vehicle Speed: 45 MPH | Vehicle Mix: 2 | Roadway Classification: Major

	NOISE PARAMETERS AT 65 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.77 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	6.02	-0.70	-1.20	73.47	71.45	69.69	63.63	72.25	72.86	70 dBA:	**92**	**101**
Medium Trucks	77.62	-11.22	-0.70	-1.20	64.50	45.64	39.28	37.75	46.21	46.44	65 dBA:	**198**	**218**
Heavy Trucks	82.14	-15.18	-0.70	-1.20	65.07	42.34	33.31	34.56	42.91	43.04	60 dBA:	**427**	**469**
				Total:	**74.51**	**71.47**	**69.69**	**63.64**	**72.27**	**72.87**	55 dBA:	**921**	**1010**

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

Scenario: OPENING YEAR 2023 WITH PROJECT CONDITIONS

Project: Slater Avenue Mixed-Use
Site Conditions: Soft

Road Name: San Mateo Street **Segment: North of Project Driveway**

Average Daily Traffic: 5900 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 45 FEET FROM CENTERLINE (Equiv. Lane Dist: 44.45 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-2.48	0.66	-1.20	59.49	57.37	56.06	50.05	58.47	59.09	70 dBA:	**8**	**9**
Medium Trucks	73.11	-19.72	0.66	-1.20	52.86	31.61	37.63	19.34	32.48	35.23	65 dBA:	**17**	**18**
Heavy Trucks	80.26	-23.68	0.66	-1.20	56.05	30.70	27.30	31.95	38.15	38.24	60 dBA:	**36**	**39**
				Total:	**61.72**	**57.39**	**56.13**	**50.12**	**58.52**	**59.15**	55 dBA:	**77**	**85**

Road Name: San Mateo Street **Segment: South of Warner Avenue**

Average Daily Traffic: 4180 Vehicles | Vehicle Speed: 30 MPH | Vehicle Mix: 1 | Roadway Classification: Local

	NOISE PARAMETERS AT 55 FEET FROM CENTERLINE (Equiv. Lane Dist: 54.55 ft)										**Centerline Distance to**		
	Noise Adjustments				**Unmitigated Noise Levels**						**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	62.51	-3.98	-0.67	-1.20	56.66	54.54	53.23	47.21	55.63	56.26	70 dBA:	**6**	**7**
Medium Trucks	73.11	-21.22	-0.67	-1.20	50.03	28.78	34.80	16.50	29.65	32.40	65 dBA:	**13**	**14**
Heavy Trucks	80.26	-25.17	-0.67	-1.20	53.22	27.87	24.47	29.12	35.31	35.41	60 dBA:	**28**	**31**
				Total:	**58.89**	**54.56**	**53.29**	**47.29**	**55.69**	**56.31**	55 dBA:	**61**	**67**

APPENDIX D

Onsite Operations Reference Noise Measurements and Wall Calculations

Measurement Report

Report Summary

Meter's File Name	831_Data.004	Computer's File Name	SLM_0002509_831_Data_004.02.ldbin
Meter	831		
Firmware	2.314		
User	GT	Location	
Description	Riverside - The Motorcycle Company - Phase 3		
Note	On Roof - Approx 6 feet from HVAC Unit		
Start Time	2020-05-09 13:23:15	Duration	0:10:00.2
End Time	2020-05-09 13:33:15	Run Time	0:10:00.2
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	65.1 dB		
LAE	92.9 dB	SEA	--- dB
EA	214.7 µPa²h		
LZ_{peak}	106.4 dB	2020-05-09 13:25:40	
LAS_{max}	80.1 dB	2020-05-09 13:25:19	
LAS_{min}	55.1 dB	2020-05-09 13:30:14	
LA_{eq}	65.1 dB		
LC_{eq}	78.1 dB	LC_{eq} - LA_{eq}	13.0 dB
LAI_{eq}	68.9 dB	LAI_{eq} - LA_{eq}	3.8 dB

Exceedances	Count	Duration
LAS > 65.0 dB	16	0:02:46.5
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	65.1 dB	65.1 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	65.1 dB	65.1 dB	--- dB	--- dB

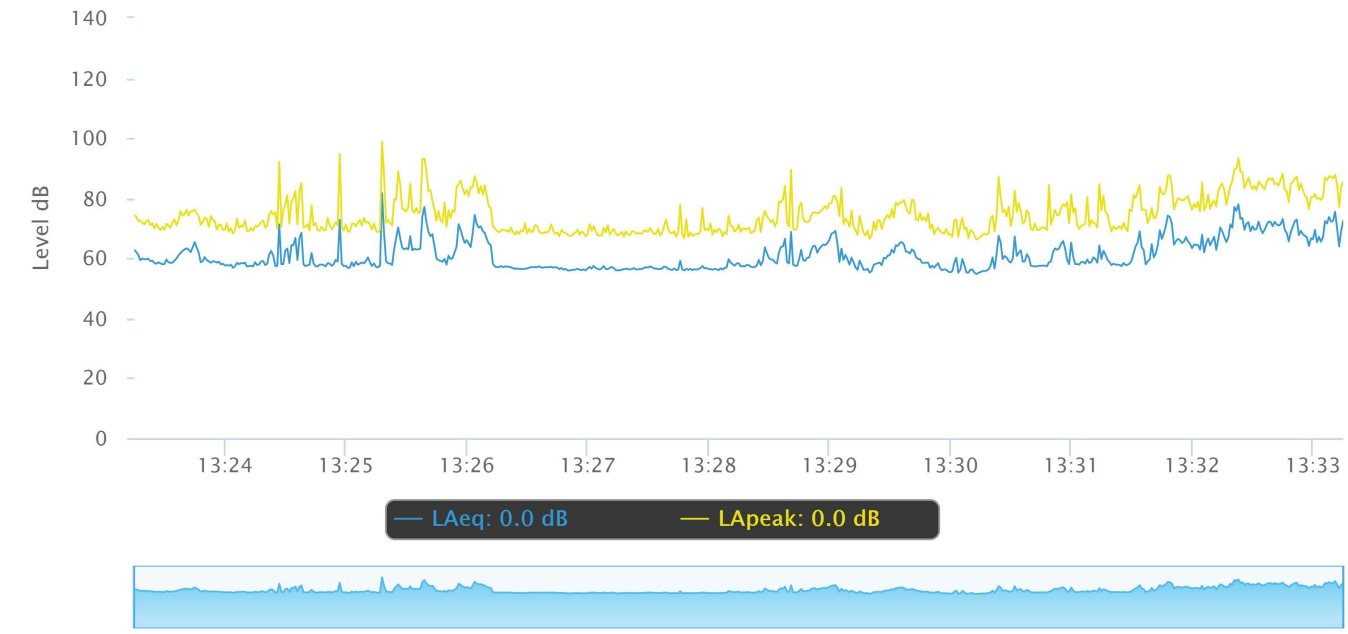
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	65.1 dB		78.1 dB		80.9 dB	
$LS_{(max)}$	80.1 dB	2020-05-09 13:25:19	91.6 dB	2020-05-09 13:26:05	97.4 dB	2020-05-09 13:23:15
$LF_{(max)}$	84.7 dB	2020-05-09 13:25:18	95.4 dB	2020-05-09 13:25:40	97.5 dB	2020-05-09 13:23:15
$LI_{(max)}$	86.7 dB	2020-05-09 13:25:18	97.5 dB	2020-05-09 13:25:40	99.6 dB	2020-05-09 13:23:15
$LS_{(min)}$	55.1 dB	2020-05-09 13:30:14	64.7 dB	2020-05-09 13:30:02	67.4 dB	2020-05-09 13:28:06
$LF_{(min)}$	54.3 dB	2020-05-09 13:30:13	63.0 dB	2020-05-09 13:30:12	65.8 dB	2020-05-09 13:27:31
$LI_{(min)}$	54.6 dB	2020-05-09 13:30:13	65.0 dB	2020-05-09 13:30:02	68.0 dB	2020-05-09 13:27:59
$L_{Peak(max)}$	98.9 dB	2020-05-09 13:25:18	105.7 dB	2020-05-09 13:25:40	106.4 dB	2020-05-09 13:25:40

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

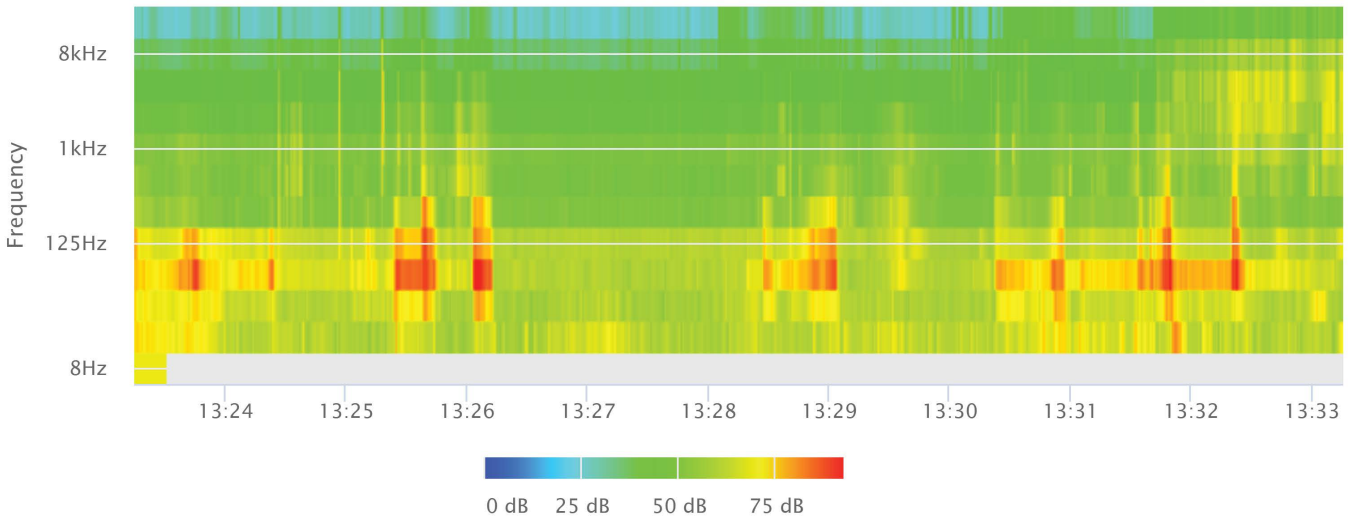
Statistics

LAS 5.0	71.5 dB
LAS 10.0	69.4 dB
LAS 33.3	62.7 dB
LAS 50.0	59.5 dB
LAS 66.6	58.1 dB
LAS 90.0	56.5 dB

Time History



OBA 1/1 Leq



General Information

Serial Number	02509
Model	831
Firmware Version	2.314
Filename	831_Data.001
User	GT
Job Description	
Location	Moddle of East Side of Laguna Beach Dog Park
Measurement Description	
Start Time	Monday, 2019 October 28 18:04:51
Stop Time	Monday, 2019 October 28 18:14:51
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	Monday, 2019 October 28 18:00:16
Post Calibration	None
Calibration Deviation	---

Note

Approx 25 dogs in Park. Located next to Park Bench at the Middle of East Side. Approx 290 ft east of SR-133 CL
66 F, 29.69 in Hg, 35% Hu, no wind

Overall Data

LAeq		60.2	dB
LASmax	2019 Oct 28 18:07:29	73.1	dB
LZpeak (max)	2019 Oct 28 18:04:51	104.4	dB
LASmin	2019 Oct 28 18:10:52	49.9	dB
LCeq		64.7	dB
LAeq		60.2	dB
LCeq - LAeq		4.5	dB
LAIeq		67.0	dB
LAeq		60.2	dB
LAIeq - LAeq		6.8	dB
Ldn		60.2	dB
LDay 07:00-22:00		60.2	dB
LNight 22:00-07:00		---	dB
Lden		60.2	dB
LDay 07:00-19:00		60.2	dB
LEvening 19:00-22:00		---	dB
LNight 22:00-07:00		---	dB
LAE		88.0	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	65.7	dBA
LAS10.00	63.9	dBA
LAS33.30	58.6	dBA
LAS50.00	56.3	dBA
LAS66.60	54.9	dBA
LAS90.00	53.8	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	24 / 65.2	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	Bin Max	
Gain	+0	dB
Under Range Limit	26.2	dB
Under Range Peak	78.1	dB
Noise Floor	17.1	dB
Overload	143.6	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	56.1	52.5	56.9	60.2	57.6	50.8	54.9	58.2	52.6	39.1	32.7	24.2
LZSmax	82.3	73.2	63.9	71.3	72.0	65.7	68.3	72.3	67.2	54.0	52.5	44.0
LZSmin	38.8	44.5	49.4	50.0	48.2	42.2	40.5	48.3	41.9	29.5	15.1	13.3

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	49.1	52.5	51.4	47.3	48.0	47.8	52.5	50.6	52.9	56.7	54.4	55.3
LZSmax	73.8	78.3	77.2	70.6	67.3	63.0	60.0	61.5	62.6	71.3	63.1	70.0
LZSmin	27.3	32.4	33.8	36.5	38.3	39.7	41.5	42.8	43.8	44.8	43.8	43.2

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	54.4	52.1	51.8	47.5	46.0	43.3	48.0	51.3	50.5	54.7	54.2	49.8
LZSmax	70.1	67.3	67.0	61.7	63.4	59.9	63.4	64.9	67.9	71.6	70.1	66.6
LZSmin	43.4	41.8	39.5	38.9	36.6	33.3	31.7	33.8	38.3	42.5	44.1	43.4

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	50.6	47.2	42.4	37.0	33.1	28.9	28.4	28.7	25.8	21.9	18.5	14.7
LZSmax	66.5	62.9	57.8	51.9	49.7	48.4	48.7	50.3	46.9	40.8	39.3	31.6
LZSmin	40.0	35.7	30.6	26.3	24.7	18.9	12.0	9.5	7.9	7.7	8.9	8.8

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	28 Oct 2019 18:00:14	-26.1
PRM831	06 Oct 2019 13:06:55	-26.7
PRM831	18 Sep 2019 13:58:16	-26.8
PRM831	18 Sep 2019 11:09:07	-26.6
PRM831	07 Aug 2019 12:27:09	-27.3
PRM831	07 Aug 2019 05:49:21	-27.0
PRM831	06 Aug 2019 15:11:44	-26.3
PRM831	06 Aug 2019 12:24:00	-26.0
PRM831	22 Jul 2019 10:48:48	-26.3
PRM831	12 Jul 2019 20:18:07	-26.0
PRM831	29 May 2019 13:46:43	-25.9

File Translated: Z:\Vista Env\2007\070801 - Orange-SullyMiller\Noise\Noise Measurements\Pool\Pool.slmdl
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&rta.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
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

Spectra

Date	Time	Run Time
29-Jul-2009	14:27:25	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.slmdl
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

File Translated: V:\Vista Env\2010\10048-Calistoga Enchanted Resorts\Noise Measurements\Montage Resort\12-4-10.
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: Mosaic Bar + Grille - Montage Resort Laguna Beach
Note1: Edge of outdoor dining area during lunch on Saturday
Note2: 64 F, 29.72 Hg, 57% humid., partly cloudy, no wind

Overall Any Data
Start Time: 04-Dec-2010 12:50:57
Elapsed Time: 00:47:58.6

	A Weight		C Weight		Flat	
Leq:	62.6 dBA		69.1 dBC		70.3 dBF	
SEL:	97.2 dBA		103.7 dBC		104.9 dBF	
Peak:	115.5 dBA		115.7 dBC		118.2 dBF	
	04-Dec-2010	13:01:12	04-Dec-2010	12:59:59	04-Dec-2010	12:59:59
Lmax (slow):	85.5 dBA		94.6 dBC		97.9 dBF	
	04-Dec-2010	13:01:12	04-Dec-2010	12:59:59	04-Dec-2010	12:59:59
Lmin (slow):	49.4 dBA		63.1 dBC		64.2 dBF	
	04-Dec-2010	13:02:34	04-Dec-2010	13:01:04	04-Dec-2010	13:01:04
Lmax (fast):	93.9 dBA		94.8 dBC		97.9 dBF	
	04-Dec-2010	13:01:12	04-Dec-2010	12:59:59	04-Dec-2010	12:59:59
Lmin (fast):	46.9 dBA		62.0 dBC		63.0 dBF	
	04-Dec-2010	13:00:55	04-Dec-2010	13:01:04	04-Dec-2010	13:01:04
Lmax (impulse):	98.3 dBA		97.0 dBC		97.8 dBF	
	04-Dec-2010	13:01:12	04-Dec-2010	13:01:12	04-Dec-2010	12:59:59
Lmin (impulse):	51.0 dBA		64.1 dBC		65.2 dBF	
	04-Dec-2010	13:22:52	04-Dec-2010	13:00:59	04-Dec-2010	13:02:33

Spectra

Date	Time	Run Time
04-Dec-2010	12:59:58	00:47:48.3

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	58.8		55.7		35.6		630	53.1		63.1		33.7	
16.0	59.8	64.4	58.7	61.9	38.3	43.3	800	53.4		69.2		34.7	
20.0	60.2		56.3		40.5		1000	52.1	57.1	76.3	84.4	33.8	38.4
25.0	60.5		60.9		43.0		1250	51.3		83.5		32.0	
31.5	60.6	65.2	60.0	65.0	44.3	49.8	1600	51.4		86.3		29.9	
40.0	60.1		59.8		46.8		2000	50.7	56.2	82.2	90.3	27.8	32.8
50.0	57.6		58.2		45.9		2500	52.2		86.8		24.9	
63.0	59.2	63.8	63.4	66.0	48.3	52.3	3150	50.5		85.2		23.8	
80.0	59.9		60.4		48.0		4000	47.5	53.3	81.5	87.5	22.4	27.3
100	58.0		59.4		46.5		5000	46.4		79.5		20.7	
125	56.9	61.3	58.8	64.7	43.6	49.2	6300	43.6		76.9		18.7	
160	53.5		61.2		42.1		8000	41.8	46.9	72.3	80.2	18.3	23.0
200	53.3		66.8		40.3		10000	40.5		76.0		17.7	
250	56.0	59.5	70.4	73.2	40.4	44.7	12500	37.0		70.2		17.7	
315	54.3		67.0		39.0		16000	33.0	39.0	65.5	71.9	18.6	23.8
400	54.5		63.3		36.6		20000	29.4		61.8		20.3	
500	53.6	58.5	64.8	68.6	35.9	40.3							

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: 7 times
Peak-2 Exceedance Level: 100 dB Exceeded: 10 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10048-Calistoga Enchanted Resorts\Noise Measurements\Montage Resort\12-4-10.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 04-Dec-2010 12:59:58
Elapsed Time: 00:47:48.3

	A Weight	C Weight	Flat
Leq:	62.6 dBA	69.1 dBC	70.3 dBF
SEL:	97.2 dBA	103.7 dBC	104.9 dBF
Peak:	115.5 dBA	115.7 dBC	118.2 dBF
	04-Dec-2010 13:01:12	04-Dec-2010 12:59:59	04-Dec-2010 12:59:59
Lmax (slow):	85.5 dBA	94.6 dBC	97.9 dBF
	04-Dec-2010 13:01:12	04-Dec-2010 12:59:59	04-Dec-2010 12:59:59
Lmin (slow):	49.4 dBA	63.1 dBC	64.2 dBF
	04-Dec-2010 13:02:34	04-Dec-2010 13:01:04	04-Dec-2010 13:01:04
Lmax (fast):	93.9 dBA	94.8 dBC	97.9 dBF
	04-Dec-2010 13:01:12	04-Dec-2010 12:59:59	04-Dec-2010 12:59:59
Lmin (fast):	46.9 dBA	62.0 dBC	63.0 dBF
	04-Dec-2010 13:00:55	04-Dec-2010 13:01:04	04-Dec-2010 13:01:04
Lmax (impulse):	98.3 dBA	97.0 dBC	97.8 dBF
	04-Dec-2010 13:01:12	04-Dec-2010 13:01:12	04-Dec-2010 12:59:59
Lmin (impulse):	51.0 dBA	64.1 dBC	65.2 dBF
	04-Dec-2010 13:22:52	04-Dec-2010 13:00:59	04-Dec-2010 13:02:33

Calibrated: 04-Dec-2010 12:50:12 Offset: -47.9 dB
Checked: 04-Dec-2010 12:50:12 Level: 92.7 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 2

Interval Records: Disabled Number Interval Records: 0
History Records: Disabled Number History Records: 0
Run/Stop Records: Number Run/Stop Records: 4

Stationary Noise Calculations - Homes North of Project Site

Stationary Noise Sources	Reference Distance	Reference Leq	Home North of Project Site Distance	Home North of Project Site Leq	1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
Rooftop HVAC	6	65.1	95	41	(eq. N-2141.2 of TeNS)
Dog Relief Area	10	60.2	95	41	
Roof Deck	5	62.6	290	27	
Pool and Spa	15	66.6	130	48	
Outdoor Dining	5	62.6	400	25	

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall Noise Level at Property	With Wall Noise Level at Property	Source Height (feet)	Exterior Observer Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a	source to receiver - c	path difference y =a+b-c (auto)	line of sight (slope)	fresnel	Barrier Atten
Rooftop HVAC	95	5	46	41	**26**	44	5	800	103.47	5.39	107.34	1.52	1	4.32	-14.824
Dog Relief Area	5	95	0	41	**25**	3	5	800	7.07	95.05	100.02	2.10	1	5.97	-15.876
Roof Deck	5	290	46	27	**22**	46	5	800	41.30	290.00	297.84	33.47	0	0.00	-4.9
Pool and Spa	5	130	46	48	**28**	5	5	800	41.30	136.31	135.00	42.62	1	121.22	-19.4
Outdoor Dining	5	400	0	25	**25**	5	5	800	7.07	400.03	405.00	2.10	-1	-5.98	0
		Combined Noise Levels		**49**	**33**										