BEYOND FOOD MART (OLIVER AND IRIS) NOISE IMPACT ANALYSIS

City of Moreno Valley

July 7, 2023

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Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

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Project No. 19606

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EXECUTIVE SUMMARY

The 1.31-acre project site is located at the northwest corner of the intersection of Oliver Street and Iris Avenue in the City of Moreno Valley, California. The project site is currently undeveloped and zoned for commercial use.

The proposed project involves construction of a 7,460 square foot convenience store/gas station with eight (8) dual-sided fuel pumps (16 vehicle fueling positions), and a 1,790 square foot automatic car wash tunnel. Vehicular access is proposed to be provided by two restricted right turn in/out driveways with one on Oliver Street and one on Iris Avenue.

Existing Noise Environment

Sensitive receptors that may be affected by project generated noise include the existing single-family residential uses located approximately 100 feet to the east (across Oliver Street) and 165 feet to the south (across Iris Avenue). In addition, a hospital use is located to the west, with property lines located approximately 390 feet to the west, and a school use is located to the northeast, with property lines located approximately 1,015 feet to the northeast, of the project site.

Noise measurements were collected at six locations to document existing ambient noise levels in the project area (see Figure 5, Table 1 and Table 2).

Construction Noise Impacts

Project construction will not occur outside of the hours outlined in the City of Moreno Valley Municipal Code Sections 8.14.040 and 11.80.030(D)(7). Based on the modeled construction noise levels (see Table 10), construction noise levels are estimated to reach up to 74.1 dBA at the nearest receptor. Therefore, the project would not exceed City-established standards relating to construction noise of 80 dBA L_{eq} at residential uses and 85 dBA L_{eq} at commercial uses. The project impact is less than significant; no mitigation is required.

Notwithstanding the above, best management practices (BMPs) are provided in the Project Description and should be added to project plans and in contract specifications to minimize construction noise emanating from the proposed project.

On-Site Operation Noise Impacts

The project will not exceed City-established daytime noise standards at the existing residential lots but would exceed nighttime noise standards at residential lots located south of the project site if the car wash is operated during nighttime hours. Mitigation is required. Impacts will be less than significant with mitigation.

Mitigation: The proposed car wash and associated vacuums shall not be in operation between 10:00 PM and 8:00 AM.

Mobile Source Noise Impacts

The addition of project trips is not expected to change noise levels more than the applicable threshold at any of the study roadway segments (see Table 11). The project impact is less than significant; no mitigation is required.

Groundborne Vibration Impacts

Groundborne vibration generated by project construction would not exceed the levels necessary to cause architectural damage to sensitive receptors. However, the threshold for annoyance due to vibration at offsite

sensitive uses could theoretically be exceeded at existing residential receptors to the east of the project site. However, perceptibility of construction vibration would only occur while vibratory equipment is utilized within 21 feet of the project property line in vicinity of the residential use. Furthermore, this impact would only occur during daytime hours and will be temporary. The project impact is less than significant; no mitigation is required.

Air Traffic Impacts

The project site is located outside of all of the airport influence areas and airports compatibility zones for the March Air Reserve Base/Inland Port Airport. Therefore, the project would not expose people residing or working in the project area to excessive noise levels associated with airports. The impact would be less than significant; no mitigation is required.

1. INTRODUCTION

This section describes the purpose of this study and the proposed project.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state and local policies, including those of the City of Moreno Valley, in the context of the California Environmental Quality Act (CEQA).

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise and vibration analysis.

PROJECT LOCATION

The 1.31-acre project site is located at the northwest corner of the intersection of Oliver Street and Iris Avenue in the City of Moreno Valley, California. The project site is currently undeveloped and zoned for commercial use. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves construction of a 7,460 square foot convenience store/gas station with eight (8) dual-sided fuel pumps (16 vehicle fueling positions), and a 1,790 square foot automatic car wash tunnel. Vehicular access is proposed to be provided by two restricted right turn in/out driveways with one on Oliver Street and one on Iris Avenue. Figure 2 illustrates the project site plan.

The following best management practices (BMPs) shall be provided on project plans and in contract specifications to minimize construction noise emanating from the proposed project:

1. All equipment, whether fixed or mobile, will be equipped with properly operating and maintained mufflers, consistent with manufacturer standards.
2. All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the project site.
3. As applicable, all equipment shall be shut off and not left in idle when not in use.
4. To the degree possible, equipment staging will be located in areas that create the greatest distance between construction-related noise and vibration sources and existing sensitive receptors.
5. Jackhammers, pneumatic equipment, and all other portable stationary noise sources will be directed away and shielded from existing residences in the vicinity of the project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks.
6. No amplified music and/or voice will be allowed on the project site.
7. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per City of Moreno Valley Municipal Code Sections 8.14.040 and 11.80.030(D)(7).

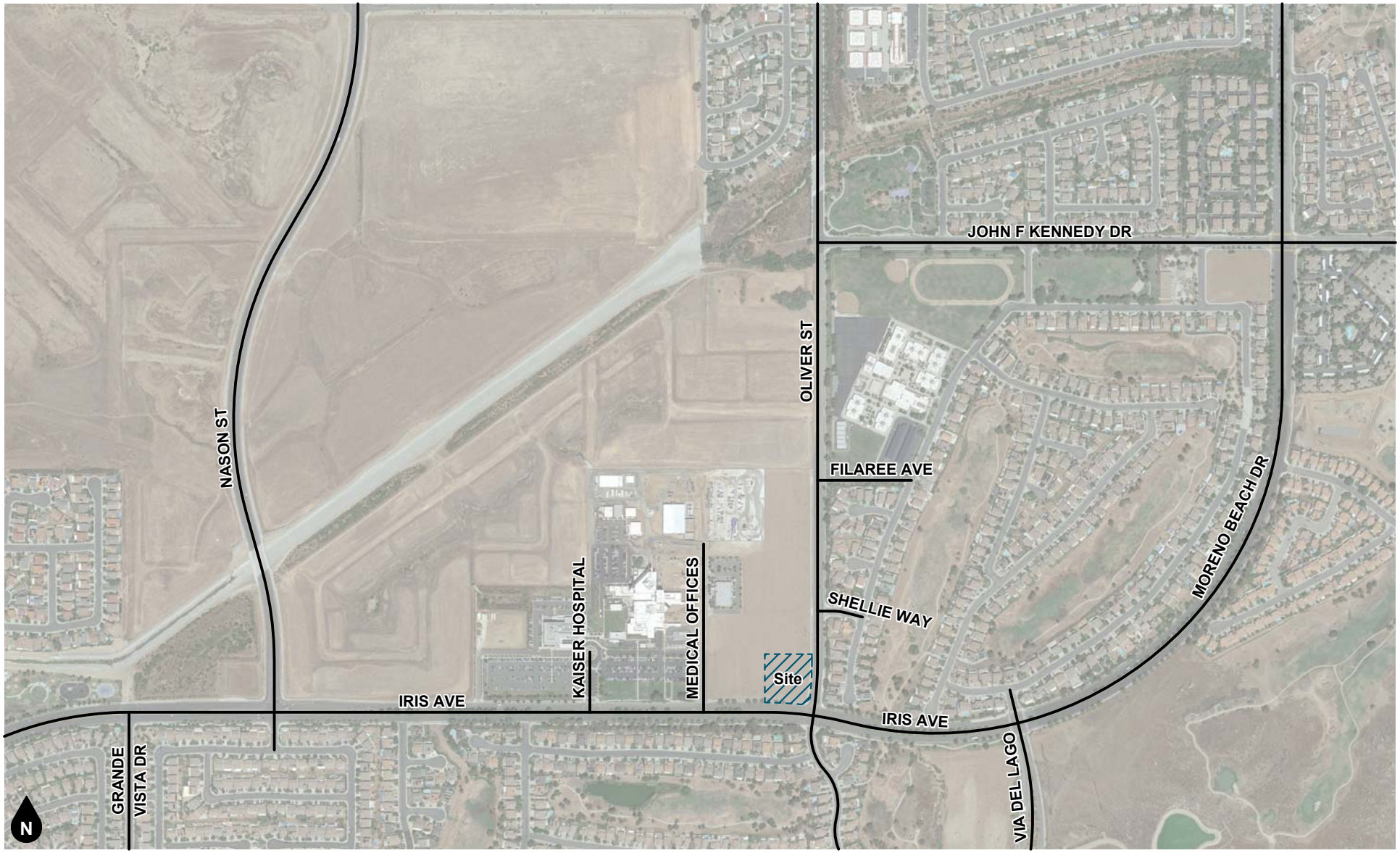


Figure 1
Project Location Map

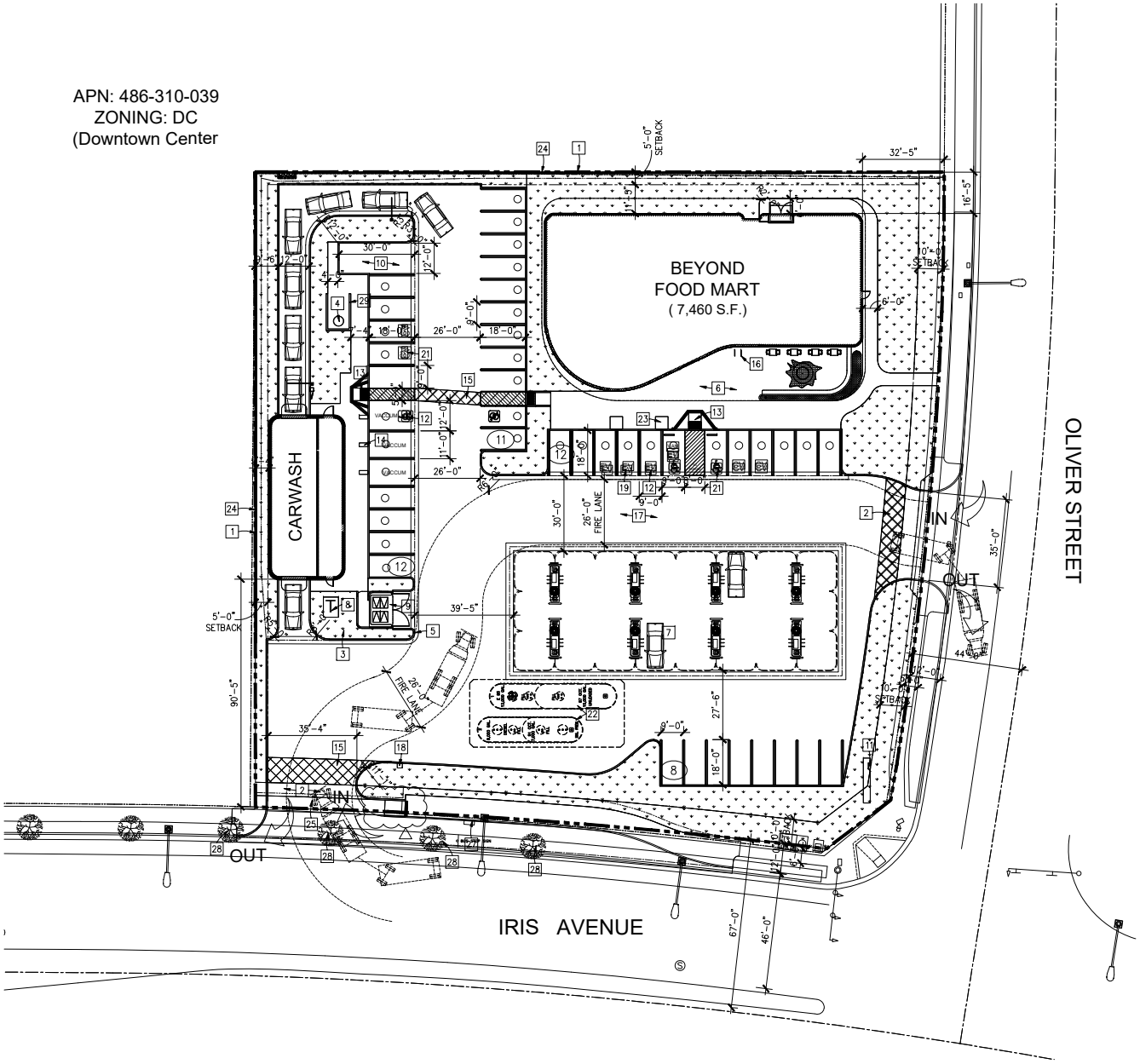


Figure 2
Site Plan

2. NOISE AND VIBRATION FUNDAMENTALS

This section provides an overview of key noise and vibration concepts.

NOISE FUNDAMENTALS

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment.

Commonly used noise terms are presented in Appendix B. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA.

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, radiates 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). 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.

Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as a doubled traffic volume, would increase the noise levels by 3 dBA; halving of the energy would result in a 3 dBA decrease. Figure 3 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3\text{-}hr)}$ would represent a 3-hour average. When no period is specified, a one-hour average is assumed.

Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (DNL). CNEL is a 24-hour weighted average measure of community noise. CNEL is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. DNL is a very similar 24-hour average measure that weights only the nighttime hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud. This definition is recommended by the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

VIBRATION FUNDAMENTALS

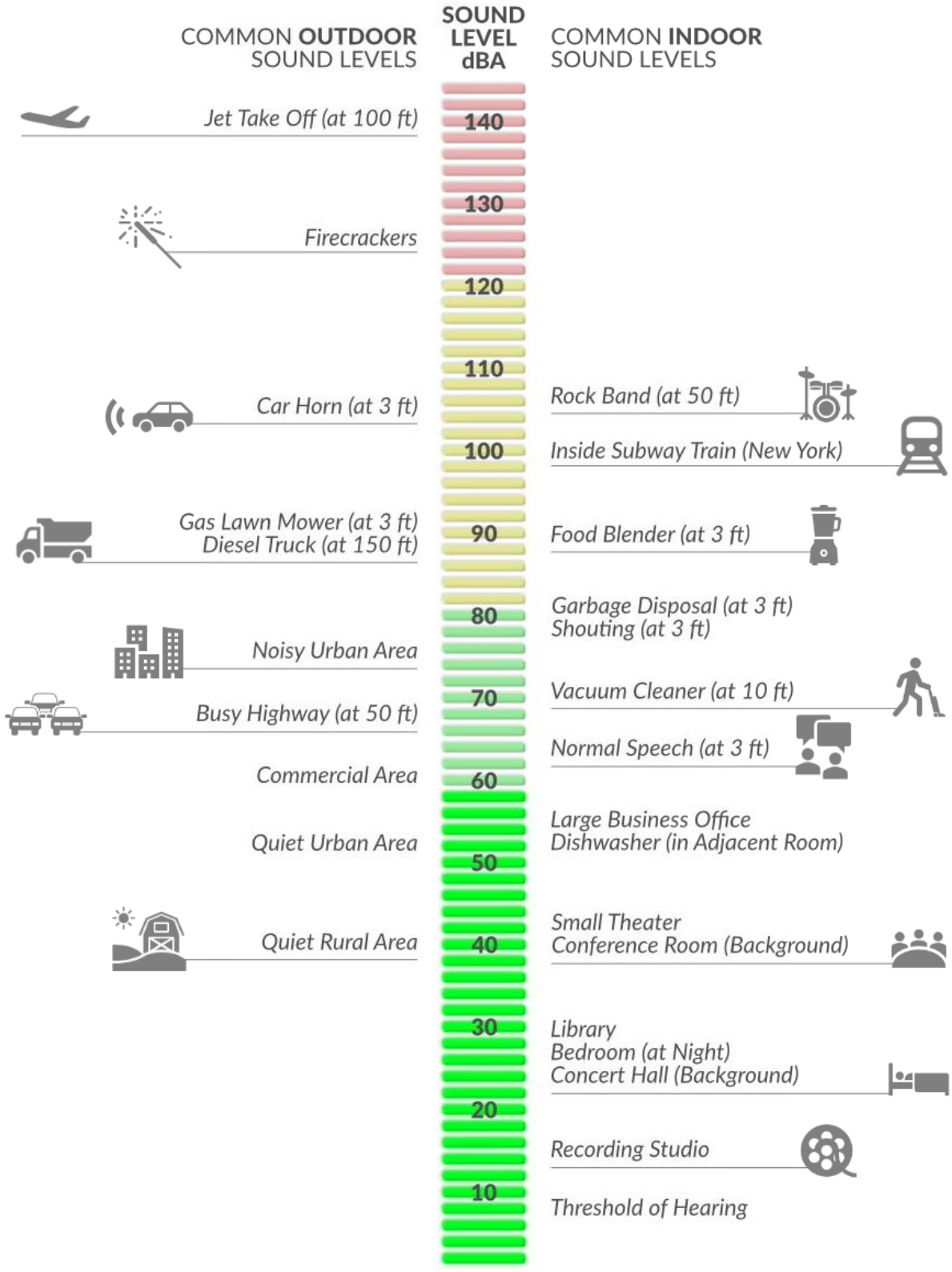
The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation: surface, compression 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. Compression waves, or P-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. Shear waves, or S-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 energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

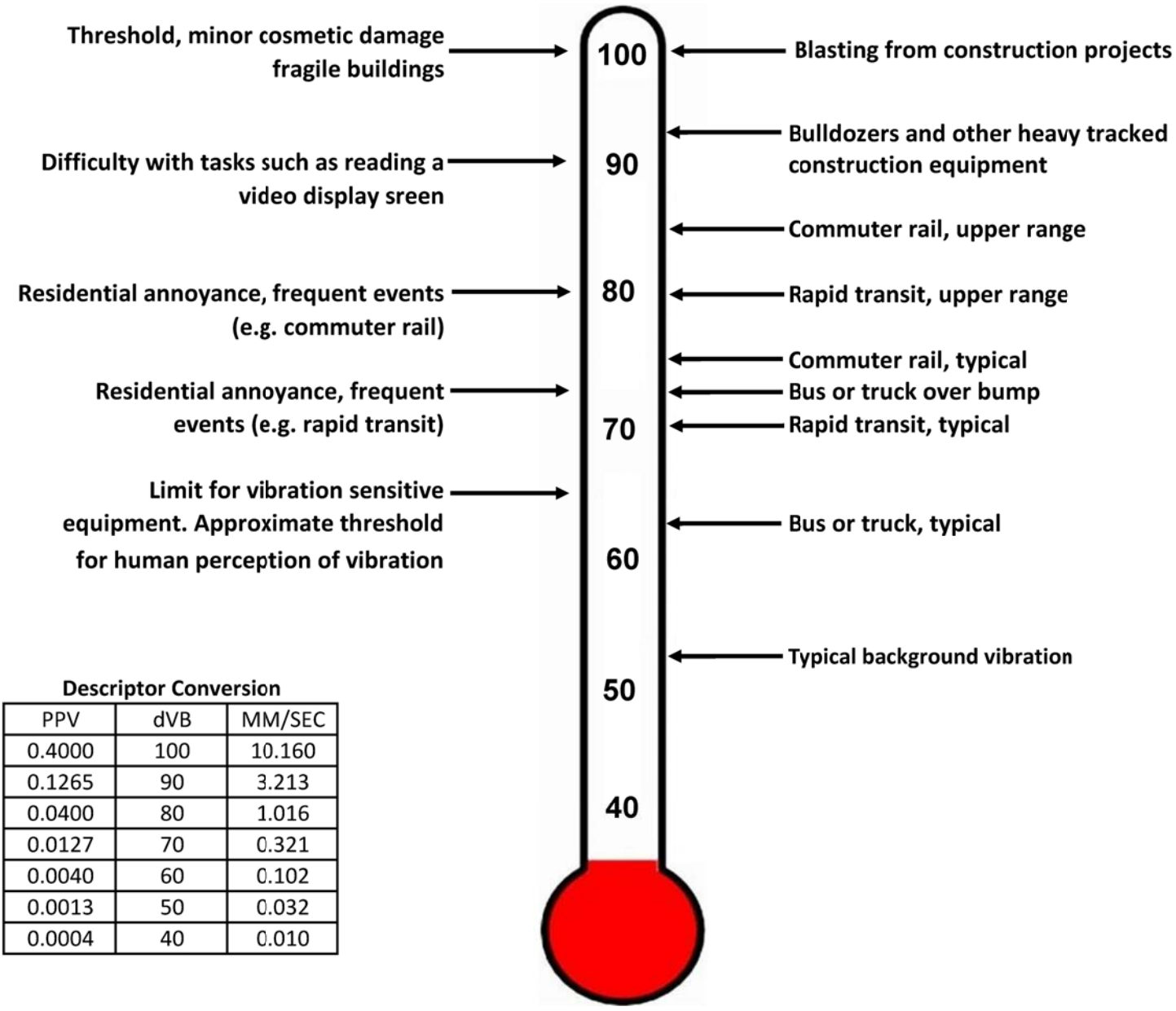
Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second. The RMS of a signal is the average of the squared amplitude of the signal in vibration decibels (VdB), ref one micro-inch per second. The Federal Railroad Administration uses the abbreviation "VdB" for vibration decibels to reduce the potential for confusion with sound decibel.

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval. Figure 4 illustrates common vibration sources and the human and structural responses to ground-borne vibration. As shown in the figure, the threshold of perception for human response is approximately 65 VdB; however, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Vibration tolerance limits for sensitive instruments such as magnetic resonance imaging (MRI) or electron microscopes could be much lower than the human vibration perception threshold.



Based on Policy & Guidance from Federal Aviation Administration

Figure 3
A-Weighted Comparative Sound Levels



Descriptor Conversion

PPV	dVB	MM/SEC
0.4000	100	10.160
0.1265	90	3.213
0.0400	80	1.016
0.0127	70	0.321
0.0040	60	0.102
0.0013	50	0.032
0.0004	40	0.010

Source: FRA, 2012. Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment. Office of Railroad Policy Development, Washington, D.C. DOT/FRA/ORD-12/15. September.

Figure 4
Typical Levels of Groundborne Vibration

3. EXISTING NOISE ENVIRONMENT

This section describes the existing noise setting in the project vicinity.

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is generally bordered by the vacant land to the north and west; Oliver Street to the east; and Iris Avenue to the south.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas.

Sensitive land uses that may be affected by project noise include the property lines of the existing single-family residential uses located approximately 100 feet to the east (across Oliver Street) and 165 feet to the south (across Iris Avenue). In addition, a hospital use is located to the west, with property lines located approximately 390 feet to the west, and a school use is located to the northeast, with property lines located approximately 1,015 feet to the northeast, of the project site.

AMBIENT NOISE MEASUREMENTS

An American National Standards Institute (ANSI Section S1.4 2014 Class 1) Larson Davis model LxT sound level meter was used to document existing ambient noise levels. In order to document existing ambient noise levels in the project area, five (5) 15-minute daytime noise measurements were taken between 1:19 PM and 3:33 PM on March 2, 2023. In addition, one (1) long-term 24-hour noise measurement was also taken from March 2, 2023, to March 3, 2023. Figure 5 shows the noise measurement location map. Field worksheets and noise measurement worksheets are provided in Appendix C.

As shown in Figure 5, the noise meter was placed at the following locations:

- STNM1: represents the existing noise environment of the single-family residences located to the east of the project site boundary along Legendary Drive (15455 Legendary Drive, Moreno Valley). The noise meter was placed just west of the western property line of the residential use and east of Oliver Street.

- STNM2: represents the existing noise environment of the single-family residential uses located to the south of the project site along Oliver Street (15555 Oliver Street, Moreno Valley). The noise meter was placed just north of the northern property line of the residential use and just southwest of the intersection of Oliver Street and Iris Avenue.

- STNM3: represents the existing noise environment of the single-family residential uses located to the south of the project site along Arla Street (27428 Arla Street, Moreno Valley). The noise meter was placed just north of the northern property line of the residential use and just south of Iris Avenue.

- STNM4: represents the existing noise environment of the single-family residential uses located to the south of the project site along Arla Street (27392 Arla Street, Moreno Valley). The noise meter was placed just north of the northern property line of the residential use and just south of Iris Avenue.

- STNM5: represents the existing noise environment of the hospital use located to the west of the project site boundary (27300 Iris Avenue, Moreno Valley). The noise meter was placed just southeast of the parking lot associated with the hospital use.

- LTNM1: represents the existing noise environment of the project site. The noise meter was placed near the southeastern corner of the site near the intersection of Iris Avenue and Oliver Street.

Table 1 provides a summary of the short-term ambient noise data. Table 2 provides hourly interval ambient noise data from the long-term noise measurements. Measured short-term ambient noise levels ranged between 59.5 and 68.9 dBA L_{eq}. Long-term hourly noise measurement ambient noise levels ranged from 53.7 to 67 dBA L_{eq}. The dominant noise source was vehicle traffic associated with Oliver Street, Iris Avenue, and a hospital access road as well as road construction.

Table 1
Short-Term Noise Measurement Summary (dBA)

Daytime Measurements[1,2]								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
STNM1	1:19 PM	60.7	76.8	43.3	68.6	65.1	60.2	54.7
STNM2	1:58 PM	66.6	83.3	48.2	75.3	72.2	65.9	61.0
STNM3	2:21 PM	68.9	88.5	47.9	77.4	72.5	67.9	63.5
STNM4	2:45 PM	67.8	80.7	43.0	75.7	72.6	68.8	63.0
STNM5	3:18 PM	59.5	74.1	50.0	67.4	62.5	59.5	57.3

Notes:
(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.
(2) Noise measurements performed on March 2, 2023.

Table 2
Long-Term Noise Measurement Summary (dBA)

24-Hour Ambient Noise[1,2]								
Hourly Measurements	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
Overall Summary	6:00 PM	62.9	93.8	35.6	70.5	66.6	61.9	56.5
1	6:00 PM	65.4	89.7	48.4	71.8	69.2	65.5	60.7
2	7:00 PM	53.7	85.4	43.5	70.4	67.1	63.4	59.0
3	8:00 PM	56.3	81.2	43.4	68.2	64.9	60.6	56.1
4	9:00 PM	56.4	84.3	41.3	68.0	64.2	59.8	54.3
5	10:00 PM	58.8	80.3	39.7	66.5	63.1	58.4	53.1
6	11:00 PM	59.6	93.8	38.0	67.0	62.8	56.5	49.3
7	12:00 AM	60.6	83.4	37.5	65.0	59.6	51.6	44.9
8	1:00 AM	60.9	76.5	35.6	63.7	57.2	49.6	44.2
9	2:00 AM	60.9	80.2	38.3	74.9	72.0	68.3	60.8
10	3:00 AM	61.0	75.3	37.5	65.9	60.9	53.0	45.4
11	4:00 AM	61.4	81.8	39.5	67.9	64.3	58.4	51.8
12	5:00 AM	61.7	76.8	40.9	69.3	66.5	62.0	56.3
13	6:00 AM	61.7	79.5	45.2	70.6	67.8	63.8	58.7
14	7:00 AM	63.0	86.0	48.3	71.6	68.4	64.9	60.4
15	8:00 AM	63.1	77.7	43.7	70.4	67.2	63.8	59.8
16	9:00 AM	63.1	83.6	41.6	68.9	65.8	62.0	57.0
17	10:00 AM	63.2	91.3	40.8	68.4	64.7	60.7	56.5
18	11:00 AM	63.4	79.3	41.2	69.2	65.8	61.8	57.5
19	12:00 PM	63.6	80.5	40.9	68.1	65.3	61.6	56.8
20	1:00 PM	63.7	75.3	42.3	68.6	65.7	61.9	56.9
21	2:00 PM	64.4	92.2	39.3	70.2	66.7	63.4	59.2
22	3:00 PM	65.5	84.1	42.9	71.0	67.1	63.7	58.8
23	4:00 PM	66.7	83.8	43.8	70.3	67.1	63.8	59.1
24	5:00 PM	67.0	89.3	45.2	74.7	68.1	63.7	59.5

Notes:

(1) See Figure 5 for noise measurement locations. Noise measurement was performed over a 24-hour duration.

(2) Noise measurement performed from March 2, 2023 to March 3, 2023.

Legend

NM 1 Noise Measurement Location

ST NM Short-Term Noise Measurement

LT NM Long-Term Noise Measurement

Figure 5
Noise Measurement Location Map

4. REGULATORY SETTING

This section documents the regulatory framework and applicable noise standards.

FEDERAL REGULATION

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

Federal Transit Administration

Ground-borne noise refers to the noise generated by ground-borne vibration. Ground-borne noise that accompanies the building vibration is usually perceptible only inside buildings and typically is only an issue at locations with subway or tunnel operations where there is no airborne noise path or for buildings with substantial sound insulation such as a recording studio.[1] As such, available guidelines from the Federal Transit Administration (FTA) are utilized to assess impacts due to ground-borne vibration. The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. As shown in Table 3, the threshold at which there is a risk to "architectural" damage to reinforced-concrete, steel or timber (no plaster) buildings is a peak particle velocity (PPV) of 0.5, at engineered concrete and masonry (no plaster) buildings a PPV of 0.3, at non-engineered timber and masonry buildings a PPV of 0.2 and at buildings extremely susceptible to vibration damage a PPV of 0.1. The FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories:

(1) Vibration Category 1 – High Sensitivity,
(2) Vibration Category 2 – Residential, and
(3) Vibration Category 3 – Institutional.

The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference. The vibration criteria associated with human annoyance for these three land-use categories are shown in Table 4. Table 4 shows that 72 VdB is the threshold for annoyance from groundborne vibration at sensitive receptors.

[1] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2018, pp 108, 112.

STATE REGULATIONS

State of California General Plan Guidelines 2017

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project.

LOCAL REGULATIONS

City of Moreno Valley General Plan

The City of Moreno Valley has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 5). According to the City's compatibility guidelines, daytime exterior noise levels of up to 70 dBA CNEL are considered to be "normally acceptable" and up to 77.5 dBA CNEL are considered to be "conditionally acceptable" for commercial uses. These noise levels apply to the proposed project.

The City of Moreno Valley General Plan has also established the following goals and policies in regard to noise which apply to the proposed project.

Goal N-1 *Design for a pleasant, healthy sound environment conducive to living and working.*

Policies

N.1-1: *Protect occupants of existing and new buildings from exposure to excessive noise, particularly adjacent to freeways, major roadways, the railroad, and within areas of aircraft overflight.*

N.1-3: *Apply the community noise compatibility standards (Table N-1) to all new development and major redevelopment projects outside the noise and safety compatibility zones established in the March Air Reserve Base/ Inland Port Airport Land Use Compatibility (ALUC) Plan in order to protect against the adverse effects of noise exposure. Projects within the noise and safety compatibility zones are subject to the standards contained in the ALUC Plan.*

N.1-4: *Require a noise study and/or mitigation measures if applicable for all projects that would expose people to noise levels greater than the "normally acceptable" standard and for any other projects that are likely to generate noise in excess of these standards.*

N.1-5: *Noise impacts should be controlled at the noise source where feasible, as opposed to at receptor end with measures to buffer, dampen, or actively cancel noise sources. Site design, building orientation, building design, hours of operation, and other techniques, for new developments deemed to be noise generators shall be used to control noise sources.*

N.1-6: *Require noise buffering, dampening, or active cancellation, on rooftop or other outdoor mechanical equipment located near residences, parks, and other noise sensitive land uses.*

N.1-7: *Developers shall reduce the noise impacts on new development through appropriate means (e.g., double-paned or soundproof windows, setbacks, berming, and screening). Noise attenuation methods should avoid the use of visible sound walls where possible.*

Goal N-2 *Ensure that noise does not have a substantial, adverse effect on the quality of life in the community.*

Policies

N.2-1: *Use the development review process to proactively identify and address potential noise compatibility issues.*

N.2-3: *Limit the potential noise impacts of construction activities on surrounding land uses through noise regulations in the Municipal Code that address allowed days and hours of construction, types of work, construction equipment, and sound attenuation devices.*

N.2-4: *Collaborate with the March Joint Powers Authority, March Inland Port Airport Authority, Riverside County Airport Land Use Commission, and other responsible agencies to formulate and apply strategies to address noise and safety compatibility protection from airport operations.*

N.2-5: *Encourage residential development heavily impacted by aircraft-related noise to transition to uses that are more compatible.*

City of Moreno Valley Municipal Code

Section 8.14.040 Miscellaneous Standards and Regulations

Hours of Construction. Any construction within the city shall only be completed between the hours of 7:00 AM 7:00 PM Monday through Friday, excluding holidays, and from 8:00 AM to 4:00 PM on Saturday, unless written approval is obtained from the city building official or city engineer.

Section 9.10.170 Vibration

No vibration shall be permitted which can be felt at or beyond the property line.

Section 11.80.030 Prohibited Acts

A. *General Prohibition. It is unlawful and a violation of this chapter to maintain, make, cause, or allow the making of any sound that causes a noise disturbance, as defined in Section 11.80.020.*

C. *Non-impulsive Sound Decibel Limits. No person shall maintain, create, operate or cause to be operated on private property any source of sound in such a manner as to create any non-impulsive sound which exceeds the limits set forth for the source land use category (as defined in Section 11.80.020) and shown in Table 6 when measured at a distance of two hundred (200) feet or more from the real property line of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space or other publicly owned property. Any source of sound in violation of this subsection shall be deemed prima facie to be a noise disturbance.*

D. *Specific Prohibitions. In addition to the general prohibitions set out in subsection A of this section, and unless otherwise exempted by the Noise Regulation Chapter of the City's Municipal Code, the following specific acts, or the causing or permitting thereof, are regulated as follows:*

7. *Construction and Demolition. No person shall operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of 8:00 PM and 7:00 AM the following day such that the sound there from creates a noise disturbance, except for emergency work by public service utilities or for other work approved by the city manager or designee. This shall not apply to the use of power tools as provided in subsection (D)(9) of this section.*

9. *Power Tools. No person shall operate or permit the operation of any mechanically, electrically or gasoline motor-driven tool during nighttime hours so as to cause a noise disturbance across a residential real property boundary.*

10. *Pumps, Air Conditioners, Air-Handling Equipment and Other Continuously Operating Equipment. Notwithstanding the general prohibitions of subsection, a of the Noise Regulation Chapter of the City's Municipal Code, no person shall operate or permit the operation of any pump, air conditioning, air-handling or other continuously operating motorized equipment in a state of disrepair or in a manner which otherwise creates a noise disturbance distinguishable from normal operating sounds.*

Table 3
Construction Vibration Damage Criteria

Building/Structural Category	PPV, in/sec	Approximate Lv*
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.1	90

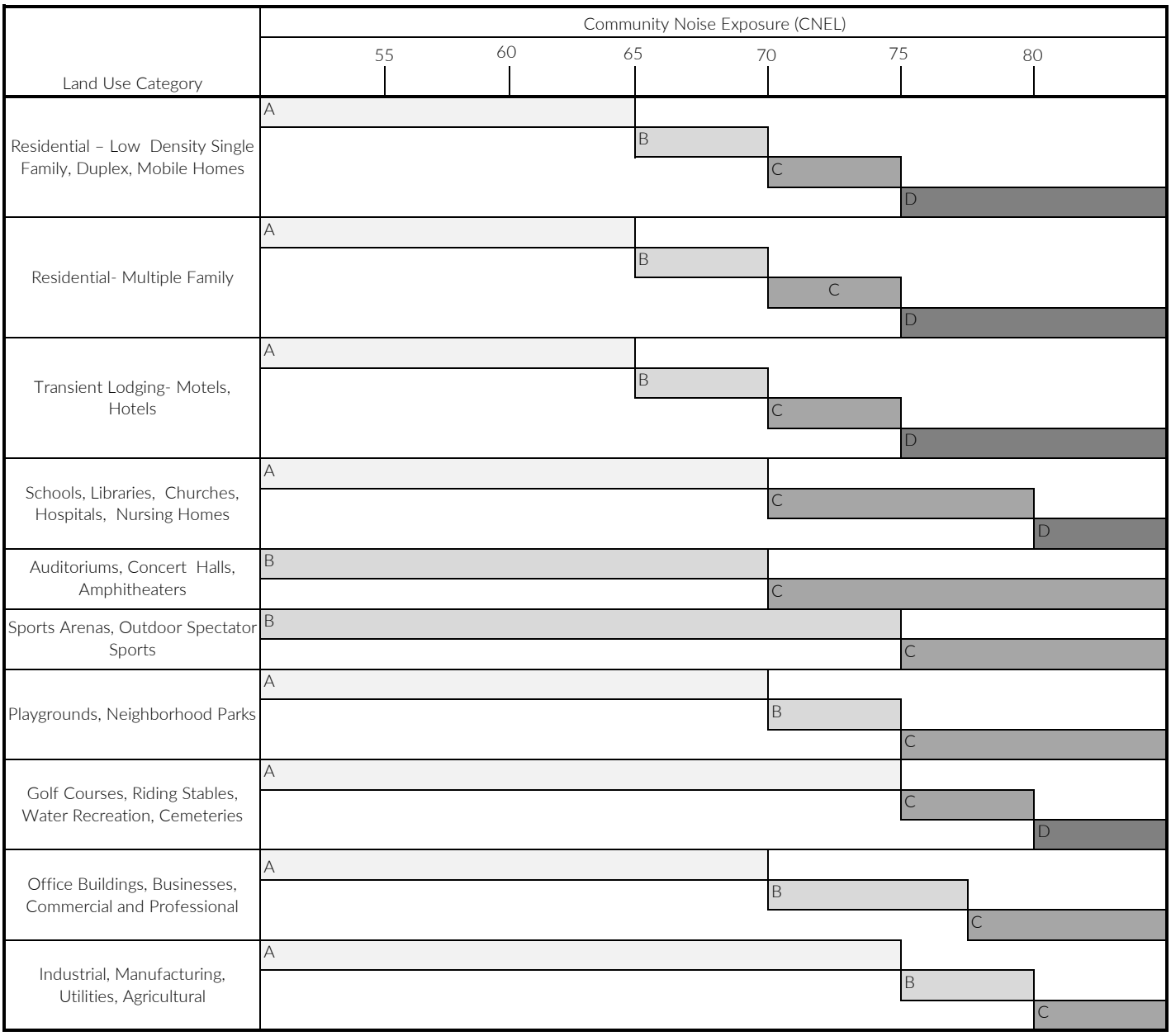
Notes:
Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).
*RMS velocity in decibels, VdB re 1 micro-in/sec

Table 4
Ground-Borne Vibration (GBV) Impact Criteria for General Vibration Assessment

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch/sec)		
	Frequent Events	Occasional Events	Events
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB*	65 VdB*	65 VdB*
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB

Source:Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).
*This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. For equipment that is more sensitive, a Detailed Vibration Analysis must be performed.

Table 5
City of Moreno Valley Community Noise Compatibility Matrix



A	Normally Acceptable:	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
B	Conditionally Acceptable:	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice
C	Normally Unacceptable:	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
D	Clearly Unacceptable:	New construction or development should generally not be undertaken.

Source: MoVal 2040 General Plan Noise Element Table N-1, 2021.

Table 6
City of Moreno Valley Maximum Sound Levels (in dBA) for Source Land Uses

Residential		Commercial	
Daytime[1]	Nighttime[2]	Daytime[1]	Nighttime[2]
60	55	65	60

Source: City of Moreno Valley Municipal Code, Table 11.80.030-2.

(1) Section 11.80.020 of the City of Moreno Valley Municipal Code defines "Daytime" as 8:00 AM to 10:00 PM of the same day.

(2) Section 11.80.020 of the City of Moreno Valley Municipal Code defines "Nighttime" as 10:01 PM to 7:59 AM of the following day.

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

This section discusses the analysis methodologies used to assess noise impacts.

CONSTRUCTION NOISE MODELING

Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

Construction noise associated with the proposed project was calculated at the sensitive receptor locations utilizing methodology presented in the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters, including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the project site.

The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the CalEEMod modeling in the Air Quality Study prepared for the proposed project (Lilburn, 2023). For analysis purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Sound emission levels associated with typical construction equipment as well as typical usage factors are provided in Table 7. Construction noise worksheets are provided in Appendix D.

STATIONARY SOURCE/OPERATIONAL NOISE MODELING

The SoundPLAN acoustical modeling software was utilized to model project operational stationary noise levels from the proposed project to adjacent sensitive uses (e.g., residences). SoundPLAN is capable of evaluating stationary noise sources (e.g., parking lots, drive-through menus, car wash equipment, vacuums, etc.). The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations. In addition to the information provided below, noise modeling input and outputs assumptions are provided in Appendix E.

Operational noise levels were modeled utilizing representative sound levels in the SoundPLAN model. Modeled noise sources include car wash equipment, vacuum equipment, fueling area and parking lot noise, and HVAC equipment. All noise sources were modeled to be in full operation for an entire hour. This is a conservative modeling effort, given that in actuality, several of the noise sources are not in operation continuously for an entire hour.

Car Wash Equipment Noise

The car wash drying system is by far the loudest noise source associated with the car wash tunnel. A representative sound level of 95.1 dBA L_{eq}[2] at the tunnel exit (109.7 L_w) was utilized to model the drying system in the SoundPLAN noise model. The drying system was modeled three feet from the opening of the end of the car wash tunnel exit at a heigh of eight feet.

[2] Representative Noise Measurement for Peco Blower System, Surf Thru Car Wash. MD Acoustics, LLC.

Vacuum Equipment Noise

Producers are the loudest elements of a vacuum system. Producers will be located in the equipment room and are not expected to be audible outside of the building.

A hose system will extend from these housed systems and hose ends will be available within the parking/vacuum area. A point noise source with a sound power level of 84.8 dB was assigned to each vacuum station to represent noise associated with general vacuuming activities. This noise level was collected at a Fast Five Car Wash in the City of Murrieta, California on November 7th, 2017. The measured 76.8 dB at 3 feet noise level is an average of three (3) five-minute noise measurements taken while cleaning the front seat area of a car[3]. This modeling methodology is very conservative as it assumes that all vacuum stations are being utilized at the same time continuously for an entire hour.

Parking Lot Noise

Parking lot noise was calculated using SoundPLAN methodology. Specifically, the traffic volume of the parking lot is entered with the number of moves per parking space, the hour and the number of parking bays. The user defines whether the parking lots are for automobiles, motorcycles, or trucks, and the emission level of a parking lot is automatically adjusted accordingly. The values for the number of parking moves for each time slice is the number of parking moves per reference unit (most often per parking bay), averaged for the hour[4].

SoundPLAN utilizes parking lot noise emission levels from the 6th revised edition of the parking lot study "Recommendations for the Calculation of Sound Emissions of Parking Areas, Motorcar Centers and Bus Stations as well as of Multi-Story Car Parks and Underground Car Parks" published by the Bavarian Landesamt für Umwelt provides calculation methods to determine the emissions of parking lots.

The parking lot emission table documents the reference level (Lw, ref) from parking lot study:

Lw, ref = Lw0 + KPA + KI + KD + KStrO + 10 log(B) [dB(A)]

With the following parameters:

Lw0 = Basic sound power, sound power level of one motion / per hour on P+R areas = 63 dB(A)
KPA = Surcharge parking lot type
KI = Surcharge for impulse character
KD = Surcharge for the traffic passaging and searching for parking bays in the driving lanes 2.5 * lg (f * B - 9)
f = Parking bays per unit of the reference value
B = Reference value
KStrO = Surcharge for the road surface
B = Reference value

Que

A line noise source with a sound pressure level of 50 dB L_{eq} every square meter was utilized to represent vehicle drive-through queuing.

[3] 2017 Noise Measurements, Fast Five Car Wash. City of Murrieta, November 7. Kunzman Associates.
[4] SoundPLAN Essential 4.0 Manual. SoundPLAN International, LLC. May 2016.

Mechanical Equipment (HVAC Units) Noise

A noise reference level of 67.7 dBA at 3 feet (sound power level of 78.7 dB) was utilized to represent rooftop 5 Ton Carrier HVAC units[5]. A rooftop HVAC plan is not available at the time of this analysis so the exact location and number of units per building were estimated. A total of 17 rooftop units were modeled on the proposed rooftops. The noise source height for each HVAC unit was assumed at 1 meter above the roof top. The roof top is assumed to be approximately 6 meters (~18.3 feet) above grade.

Service Station Fueling Area

The service station fueling area was modeled by utilizing SoundPLAN noise reference level for a human voice at 63 dBA per square meter, resulting in an overall noise level of 65 dBA. This representative sound level is intended to represent fueling area activities including vehicles arriving and leaving, mechanical noise, and conversation.

MOBILE SOURCE NOISE MODELING

Noise from vehicular traffic was projected using a computer program that replicates the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Key model parameters and REMEL adjustments are presented below:

- Roadway classification (e.g., freeway, major arterial, arterial, secondary, collector, etc.)
- Roadway active width (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic (ADT) Volumes, Travel Speeds, Percentages of automobiles, medium trucks and heavy trucks
- Roadway grade and angle of view
- Site conditions (e.g., soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period.

Table 8 shows the roadway volumes, speeds, and site conditions used in the analysis. The following outlines key adjustments made to the REMEL for project site parameter inputs:

- Vertical and horizontal distances (sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

Traffic noise levels were calculated at the right-of-way based on distance from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the modeled noise levels are shown for comparative purposes only to show the difference between with and without project conditions. The traffic noise calculation worksheets are included in Appendix F.

GROUNDBORNE VIBRATION MODELING

Groundborne vibration modeling was performed using vibration propagation equations and construction equipment source levels obtained from the FTA *Transit Noise and Vibration Impact Assessment Manual* (2018). Table 9 shows typical vibration levels associated with commonly used construction equipment based on data from the FTA.

[5] MD Acoustics, LLC Noise Measurement Data for RTU –Carrier 50TFQ0006 and car alarm.

There are several types of construction equipment that can cause vibration levels high enough to annoy people in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 9, a vibratory roller could generate up to 0.21 in/sec PPV at and operation of a large bulldozer could generate up to 0.089 PPV at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 in/sec PPV. It should be noted that these vibration levels are reference levels and may vary slightly depending upon soil type and specific usage of each piece of equipment.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (25/D_{rec})^n$$

Where: PPV_{ref} = *reference PPV at 25ft.*
D_{rec} = *distance from equipment to receiver in ft.*
n = 1.5 (*the value related to the attenuation rate through ground*)

Groundborne vibration calculations are provided in Appendix G.

Table 7 (1 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90

Table 7 (2 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

Table 8
Project Average Daily Traffic Volumes and Roadway Parameters

Roadway	Segment	Average Daily Traffic Volume[1]		Posted Travel Speeds (MPH)	Site Conditions
		Existing	Existing Plus Project		
Grande Vista Drive	South of Iris Avenue	1,700	2,130	25	Soft
Nason Street	North of Iris Avenue	10,400	10,620	45	Soft
Oliver Street	North of John F Kennedy Drive	3,000	3,220	35	Soft
	John F Kennedy Drive to Filaree Avenue	2,100	2,750	35	Soft
	Filaree Avenue to Shellie Way	2,000	2,650	35	Soft
	Shellie Way to Iris Avenue	2,300	2,950	35	Soft
	South of Iris Avenue	1,800	2,230	35	Soft
Via Del Lago	South of Iris Avenue	1,200	1,420	35	Soft
John F Kennedy Way	East of Oliver Street	2,000	2,440	35	Soft
	West of Moreno Beach Drive	9,200	9,640	35	Soft
	East of Moreno Beach Drive	1,800	2,670	35	Soft
Iris Avenue	West of Grande Vista Drive	24,700	25,570	50	Soft
	Grande Vista Drive to Nason Street	24,100	25,400	50	Soft
	Nason Street to Kaiser Hospital	19,500	21,020	50	Soft
	Kaiser Hospital to Medical Offices	16,600	16,600	50	Soft
	Medical Offices to Oliver Street	16,000	17,520	50	Soft
	Oliver Street to Via Del Lago	14,000	15,740	50	Soft
Moreno Beach Drive	Vial Del Lago to John F Kennedy Drive	13,900	15,420	50	Soft
	North of John F Kennedy Drive	14,400	15,490	50	Soft

Vehicle Distribution (Light Mix)[2]			
Motor-Vehicle Type	(7 AM-7 PM)	(7 PM-10 PM)	(10 PM-7 AM)
Automobiles	75.56	13.96	10.49
Medium Trucks	48.91	2.17	48.91
Heavy Trucks	47.30	5.41	47.30

Vehicle Distribution (Heavy Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (10 PM-7 AM)
Automobiles	75.54	14.02	10.43
Medium Trucks	48.00	2.00	50.00
Heavy Trucks	48.00	2.00	50.00

Notes:
(1) Existing and project average daily traffic volumes obtained from the Beyond Food Mart (Oliver and Iris) Traffic Impact Analysis, Ganddini Group (April 14, 2023).
(2) Existing vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 9
Construction Equipment Vibration Source Levels

Equipment		PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
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
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment Manual, 2018.
*RMS velocity in decibels, VdB re 1 micro-in/sec

6. NOISE AND VIBRATION IMPACTS

This section analyzes the significance of project-related noise and groundborne vibration impacts relative to standards established by the City of Moreno Valley and other applicable agencies in the context of CEQA. Appendix G of the California Environmental Quality Act Guidelines (Title 14, Division 6, Chapter 3 of the California Code of Regulations) includes an environmental checklist that identifies issues upon which findings of significance should be made. The CEQA Environmental Checklist Appendix G, XIII. Noise, requires determination if the project would result in:

a) *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?*

b) *Generation of excessive groundborne vibration or groundborne noise levels?*

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

NOISE IMPACTS

Would the project result in:

a) *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?*

Finding: Less Than Significant

In relation to the Environmental Checklist noise issue "a", applicable standards established by the City of Moreno Valley can be categorized into the following areas:

- Construction Noise
- Stationary Source Noise
- Mobile Source Noise

Construction Noise

Construction noise is regulated within Sections 8.14.040 and 11.80.030(D)(7) of the City of Moreno Valley Municipal Code (see Regulatory Setting section of this report). Accordingly, the project would result in a significant impact if:

- Project construction occurs outside the hours of 7:00 AM to 7:00 PM Monday through Friday, excluding holidays, and from 8:00 AM to 4:00 PM on Saturday; or,

- Project construction occurs within the hours of 8:00 PM and 7:00 AM the following day such that the sound there from creates a noise disturbance; or,

- Project construction noise exceeds 80 dBA L_{eq} for an 8-hour period at residential uses and 85 dBA L_{eq} for an 8-hour period at commercial uses.[6]

[6] The Final Environmental Impact Report (FEIR) for the MoVal 2040 General Plan utilized the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (2018) criteria to establish construction-related significance thresholds; therefore,

Project construction noise levels at nearby sensitive receptors were calculated using the FTA methodology. Construction noise modeling worksheets for each phase are provided in Appendix D. Anticipated noise levels during each construction phase are presented in Table 10.

As shown in Table 10, modeled construction noise levels reach up to 59 dBA L_{eq} at the nearest school property line to the northeast, 74.1 dBA L_{eq} at the nearest residential property line to the east, 70.8 dBA L_{eq} at the nearest residential property line to the south, 65.8 dBA L_{eq} at the nearest hospital property line to the west, and 66.7 dBA L_{eq} at the nearest medical office property line to the northwest of the project site.

Project construction will not occur outside of the hours outlined in Sections 8.14.040 and 11.80.030(D)(7) of the City of Moreno Valley Municipal Code. Based on the modeled construction noise levels (see Table 10), construction noise levels are estimated to reach up to 74.1 dBA L_{eq} at the nearest receptor. Therefore, the project would not exceed City-established standards relating to construction noise of 80 dBA L_{eq} at residential uses and 85 dBA L_{eq} at commercial uses. The project impact is less than significant; no mitigation is required.

Notwithstanding the above, best management practices (BMPs) are provided in the Project Description and should be added to project plans and in contract specifications to minimize construction noise emanating from the proposed project.

Stationary Source Noise

Stationary noise source standards are established within Section 11.80.030-2 of the City of Moreno Valley Municipal Code (see Regulatory Setting section of this report). Accordingly, the project would result in a significant impact if:

- As shown in Table 6, project operational noise exceeds the City-established noise standards that apply to project. Project generated on-site noise may not 60 dBA L_{eq} during the daytime (8:00 AM to 10:00 PM) and 55 dBA L_{eq} during nighttime hours (10:01 PM to 7:59 AM) at residential land uses; or exceed 65 dBA L_{eq} during the daytime (8:00 AM to 10:00 PM) and 60 dBA L_{eq} during nighttime hours (10:01 PM to 7:59 AM) at commercial land uses (City of Moreno Municipal Code 11.80.030).

Noise levels at nearby sensitive receptors were determined based on the SoundPLAN acoustical model developed for the project. SoundPLAN modeling worksheets are provided in Appendix E. A description of each noise source and model parameters are discussed in Section 5 of this report.

The project will not exceed City-established daytime noise standards at the existing residential lots but would exceed nighttime noise standards at residential lots located south of the project site if the car wash is operated during nighttime hours. Mitigation is required. Impacts will be less than significant with mitigation.

Mitigation: The proposed car wash and associated vacuums shall not be in operation between 10:00 PM and 8:00 AM.

Mobile Source Noise

California courts have rejected use of what is effectively a single "absolute noise level" threshold of significance (e.g., exceed 65 dBA CNEL) on the grounds that the use of such a threshold fails to consider the magnitude or severity of increases in noise levels attributable to the project in different environments (see *King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814). California courts have also upheld the use of "ambient plus increment" thresholds for assessing project noise impacts as consistent with CEQA, noting however, that the severity of existing noise levels should not be ignored by incorporating a smaller

this analysis also utilized the FTA construction-related significance thresholds. Per the FTA, daytime construction noise levels should not exceed 80 dBA L_{eq} for an 8-hour period at residential uses and 85 dBA L_{eq} for an 8-hour period at commercial uses.

incremental threshold for areas where existing ambient noise levels were already high (see *Mission Bay Alliance v. Office of Community Investment and Infrastructure* (2016) 6 Cal.App.5th 160).

It is widely accepted that the average healthy human ear can barely perceive changes of 3 dBA in an outdoor environment and that a change of 5 dBA is readily perceptible.[7] Based on the City-established standard provided in Section 4.13 Noise of the Draft Environmental Impact Report for the MoVal 2040: Moreno Valley Comprehensive Plan Update, Housing Element Update, and Climate Action Plan (April 2021), and considering relevant case law, the project would result in a significant impact if:

- The addition of project trips on surrounding roadways causes noise levels to increase by:
  - 5 dBA where the existing ambient noise level is less than or equal to a CNEL of 60 dBA; or,
  - 3 dBA where the existing ambient noise level is a CNEL of 60 dBA to 65 dBA; or
  - 1.5 dBA where the existing ambient noise level is greater than or equal to a 65 dBA CNEL.

Project Operational Mobile Source Noise

Roadway noise levels were calculated at roadways included in the *Beyond Food Mart (Oliver and Iris) Traffic Impact Analysis* (Ganddini Group, Inc., April 14, 2023) based on the FHWA Traffic Noise Prediction Model methodology. During operation, with incorporation of pass-by trip reductions, the proposed project is expected to generate approximately 4,346 average daily trips with 155 trips during the AM peak-hour and 185 trips during the PM peak-hour. Roadway noise levels were calculated for the following scenarios:

- *Existing (without Project)*: This scenario refers to existing year traffic noise conditions.
- *Existing Plus Project*: This scenario refers to existing year plus project traffic noise conditions.

Table 11 shows the change in existing roadway noise levels with the addition of project-generated operational trips. FHWA Traffic Noise Prediction Model calculation worksheets are provided in Appendix F.

As shown in Table 11, modeled existing traffic noise levels range between 58-76 dBA CNEL and the modeled Existing Plus Project traffic noise levels range between 59-76 dBA CNEL at the right-of-way of each study roadway segment.

As shown in Table 11, all the modeled roadway segments, other than John F Kennedy Way east of Moreno Beach Drive, are below the lowest threshold of a 1.5 dB increase. The modeled existing noise level along the roadway segment of John F Kennedy Way east of Moreno Beach Drive is 64.5 dBA CNEL and the project generated vehicle trips are anticipated to increase the noise level along this roadway segment by approximately 1.7 dBA CNEL. Therefore, the appropriate threshold for this roadway segment is an increase of 3 dB. The approximately 1.7 dB increase along John F Kennedy Way is below the 3 dB increase threshold.

The addition of project trips is not expected to change noise levels in excess of the applicable threshold at any of the study roadway segments (see Table 11). The project impact is less than significant; no mitigation is required.

Construction Mobile Source Noise

Construction truck trips would occur throughout the construction period. Given the project site's proximity to the 215 Freeway and State Route 60, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

[7] California Department of Transportation's *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013)

Iris Avenue currently handles approximately 16,000 average daily vehicle trips and Oliver Street currently handles approximately 2,300 average daily vehicle trips in the vicinity of the project site.[8] According to the CalEEMod modeling in the Air Quality Study prepared for the proposed project (Lilburn, 2023), the greatest number of construction-related vehicle trips per day would be during the demolition and paving phases of construction at up to 13 vehicle trips per day (12.5 worker trips per day for both demolition and paving). Therefore, vehicle traffic generated during project construction is nominal relative to existing roadway volumes and would not result in the doubling of traffic volume necessary to increase noise levels by 3 dBA. The project impact is less than significant; no mitigation is required.

GROUNDBORNE VIBRATION IMPACTS

Would the project result in:

b) Generation of excessive groundborne vibration or groundborne noise levels?

Finding: Less Than Significant

In relation to the Environmental Checklist noise issue "b", the City of Moreno Valley has not established thresholds of significance concerning groundborne vibration. In the absence of City-established thresholds, groundborne vibration impacts are based on guidance from the *Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual* (FTA, September 2018) (see Regulatory Setting section). Accordingly, the project would result in a significant impact if:

- Groundborne vibration levels generated by the project have the potential to cause architectural damage at nearby buildings by exceeding the following PPV:
  - 0.10 in/sec at buildings extremely susceptible to vibration damage
  - 0.20 in/sec at non-engineered timber and masonry buildings
  - 0.30 in/sec at engineered concrete and masonry (no plaster) buildings
  - 0.50 in/sec at reinforced-concrete, steel or timber (no plaster) buildings
- Groundborne vibration levels generated by the project have the potential to cause annoyance at sensitive receptors by exceeding 72 VdB.

Groundborne vibration modeling worksheets are provided in Appendix G.

Based on the groundborne vibration modeling, use of a vibratory roller is expected to generate a PPV of 0.021 in/sec and use of a bulldozer is expected to generate a PPV of 0.009 in/sec at the closest off-site building, a residential use located approximately 115 feet east of the project site (Table 12). Other equipment anticipated to be used during project construction generate lower PPV. Therefore, groundborne vibration generated by project construction would not exceed the levels necessary to cause architectural damage.

Use of vibratory rollers could theoretically exceed the threshold for annoyance due to vibration (72 VdB at offsite residential sensitive uses) at the existing residential receptor to the east of the project site, and residents may be temporarily annoyed (Table 12). However, perceptibility of construction vibration would be temporary and would only occur while vibratory equipment is utilized within 21 feet of the project property lines in proximity of the residential use to the east. Furthermore, this impact would only occur during daytime hours. This impact would be less than significant. No mitigation is required.

The most substantial sources of groundborne vibration during post-construction project operations will include the movement of passenger vehicles and trucks on paved and generally smooth surfaces. Loaded

[8] Existing average daily traffic volumes obtained from the *Beyond Food Mart (Oliver and Iris) Traffic Impact Analysis* (Ganddini Group, Inc., April 14, 2023).

trucks generally have a PPV of 0.076 at a distance of 25 feet (Caltrans 2020), which is a substantially lower PPV than that of a vibratory roller (0.210 in/sec PPV at 25 feet). Therefore, groundborne vibration levels generated by project operation would not exceed those modeled for project construction.

AIR TRAFFIC IMPACTS

Would the project result in:

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

Finding: No Impact

The closest airport to the project site is the March Air Reserve Base/Inland Port Airport, with airport runways located as close as approximately 2.26 miles to the west/southwest of the project site. The City of Moreno Valley 2040 General Plan Map S-7, Airport Land Use Compatibility Zones and the Riverside County Airport Land Use Commission March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan Map MA-1 (ALUCP 2014), show that the project site is outside of both the airport influence areas as well as the airport's compatibility zones. Therefore, the proposed project would not expose people residing or working in the area to excessive noise levels. There is no impact, and no mitigation is required.

Table 10
Construction Noise Levels (dBA L_{eq})

Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[2]	Construction Noise Levels (dBA Leq)
Demolition	School to Northeast (Landmark Middle School, 15261 Legendary Drive, Moreno Valley)	60.7	59.0
	Residential to East (15445 Legendary Drive, Moreno Valley)	60.7	74.1
	Residential to South (15555 Oliver Street, Moreno Valley)	66.6	70.8
	Hospital to West (Kaiser Permanente Moreno Valley Medical Center, 27300 Iris Avenue, Moreno Valley)	59.5	65.8
	Medical Office to Northwest (Fresenius Kidney Care Moreno Valley, 27420 Iris Avenue, Moreno Valley)	59.5	66.7
Site Preparation	School to Northeast (Landmark Middle School, 15261 Legendary Drive, Moreno Valley)	60.7	57.5
	Residential to East (15445 Legendary Drive, Moreno Valley)	60.7	72.5
	Residential to South (15555 Oliver Street, Moreno Valley)	66.6	69.2
	Hospital to West (Kaiser Permanente Moreno Valley Medical Center, 27300 Iris Avenue, Moreno Valley)	59.5	64.2
	Medical Office to Northwest (Fresenius Kidney Care Moreno Valley, 27420 Iris Avenue, Moreno Valley)	59.5	65.2
Grading	School to Northeast (Landmark Middle School, 15261 Legendary Drive, Moreno Valley)	60.7	58.8
	Residential to East (15445 Legendary Drive, Moreno Valley)	60.7	73.8
	Residential to South (15555 Oliver Street, Moreno Valley)	66.6	70.5
	Hospital to West (Kaiser Permanente Moreno Valley Medical Center, 27300 Iris Avenue, Moreno Valley)	59.5	65.5
	Medical Office to Northwest (Fresenius Kidney Care Moreno Valley, 27420 Iris Avenue, Moreno Valley)	59.5	66.5
Building Construction	School to Northeast (Landmark Middle School, 15261 Legendary Drive, Moreno Valley)	60.7	56.2
	Residential to East (15445 Legendary Drive, Moreno Valley)	60.7	71.2
	Residential to South (15555 Oliver Street, Moreno Valley)	66.6	67.9
	Hospital to West (Kaiser Permanente Moreno Valley Medical Center, 27300 Iris Avenue, Moreno Valley)	59.5	62.9
	Medical Office to Northwest (Fresenius Kidney Care Moreno Valley, 27420 Iris Avenue, Moreno Valley)	59.5	63.9
Paving	School to Northeast (Landmark Middle School, 15261 Legendary Drive, Moreno Valley)	60.7	55.9
	Residential to East (15445 Legendary Drive, Moreno Valley)	60.7	71.0
	Residential to South (15555 Oliver Street, Moreno Valley)	66.6	67.6
	Hospital to West (Kaiser Permanente Moreno Valley Medical Center, 27300 Iris Avenue, Moreno Valley)	59.5	62.6
	Medical Office to Northwest (Fresenius Kidney Care Moreno Valley, 27420 Iris Avenue, Moreno Valley)	59.5	63.6
Architectural Coating	School to Northeast (Landmark Middle School, 15261 Legendary Drive, Moreno Valley)	60.7	46.9
	Residential to East (15445 Legendary Drive, Moreno Valley)	60.7	61.9
	Residential to South (15555 Oliver Street, Moreno Valley)	66.6	58.6
	Hospital to West (Kaiser Permanente Moreno Valley Medical Center, 27300 Iris Avenue, Moreno Valley)	59.5	53.6
	Medical Office to Northwest (Fresenius Kidney Care Moreno Valley, 27420 Iris Avenue, Moreno Valley)	59.5	54.6

Notes:
(1) Construction noise worksheets are provided in Appendix D.
(2) Per measured existing ambient noise levels. STNM1 was used for the residential receptors to the east and the school receptor to the northeast, STNM2 for the residential receptors to the south, and STNM5 for the hospital receptors to the west and the medical office receptors to the northwest of the project site.

Table 11
Increase in Existing Noise Levels Along Roadways as a Result of Project (dBA CNEL)

Roadway	Segment	Distance from roadway centerline to right-of-way (feet)[2]	Modeled Noise Levels (dBA CNEL)[1]				
			Existing Without Project at right-of-way	Existing Plus Project at right-of-way	Change in Noise Level	Exceeds Standards[3]	Increase of 1.5 dB or More?
Grande Vista Drive	South of Iris Avenue	33	58.21	59.19	0.98	No	No
Nason Street	North of Iris Avenue	55	72.66	72.75	0.09	Yes	No
Oliver Street	North of John F Kennedy Drive	44	66.70	67.01	0.31	Yes	No
	John F Kennedy Drive to Filaree Avenue	44	65.15	66.32	1.17	Yes	No
	Filaree Avenue to Shellie Way	44	64.94	66.16	1.22	Yes	No
	Shellie Way to Iris Avenue	44	65.55	66.63	1.08	Yes	No
	South of Iris Avenue	44	64.48	65.41	0.93	Yes	No
Via Del Lago	South of Iris Avenue	33	59.49	60.22	0.73	No	No
John F Kennedy Way	East of Oliver Street	44	64.94	65.80	0.86	Yes	No
	West of Moreno Beach Drive	44	71.57	71.77	0.20	Yes	No
	East of Moreno Beach Drive	44	64.48	66.20	1.72	Yes	Yes
Iris Avenue	West of Grande Vista Drive	67	76.26	76.41	0.15	Yes	No
	Grande Vista Drive to Nason Street	67	76.15	76.38	0.23	Yes	No
	Nason Street to Kaiser Hospital	67	75.23	75.56	0.33	Yes	No
	Kaiser Hospital to Medical Offices	67	74.53	74.91	0.38	Yes	No
	Medical Offices to Oliver Street	67	74.37	74.77	0.40	Yes	No
	Oliver Street to Via Del Lago	67	73.79	74.30	0.51	Yes	No
Moreno Beach Drive	Vial Del Lago to John F Kennedy Drive	67	73.76	74.21	0.45	Yes	No
	North of John F Kennedy Drive	67	73.92	74.23	0.31	Yes	No

Notes:
(1) Exterior noise levels calculated 5 feet above pad elevation, perpendicular to subject roadway.
(2) Right of way per the City of Moreno Valley General Plan Final Program EIR (July 2006).
(3) Per the City of Moreno Valley normally acceptable standard for single-family detached residential dwelling units (see Table 5).

Table 12
Construction Vibration Levels at the Nearest Receptors

Receptor Location	Distance from Property Line to Nearest Structure (feet)	Equipment	Vibration Level[1]	Threshold Exceeded?[2]
Architectural Damage Analysis				
Residential to East (15465 Legendary Drive, Moreno Valley)	115	Vibratory Roller	0.021	No
	115	Large Bulldozer	0.009	No
Residential to South (15555 Oliver Street, Moreno Valley)	169	Vibratory Roller	0.012	No
	169	Large Bulldozer	0.005	No
Medical Office to Northwest (Fresenius Kindey Care, 27420 Iris Avenue, Moreno Valley)	360	Vibratory Roller	0.004	No
	360	Large Bulldozer	0.002	No
Annoyance Analysis				
Residential to East (15465 Legendary Drive, Moreno Valley)	115	Vibratory Roller	74	Yes
	115	Large Bulldozer	67	No
Residential to South (15555 Oliver Street, Moreno Valley)	169	Vibratory Roller	69	No
	169	Large Bulldozer	62	No
Medical Office to Northwest (Fresenius Kindey Care, 27420 Iris Avenue, Moreno Valley)	360	Vibratory Roller	59	No
	360	Large Bulldozer	52	No

Notes:

(1) Vibration levels are provided in PPV in/sec for architectural damage and VdB for annoyance.

(2) The FTA identifies the threshold at which there is a risk to "architectural" damage to non-engineered timber and masonry buildings as a PPV of 0.2 in/sec (see Table 3). In addition, the FTA identifies a vibration annoyance threshold of 72 VdB for residential uses (see Table 4). Per the FTA Transit Noise and Vibration Impact Assessment Manual (September 2018), commercial uses are not considered vibration-sensitive land uses; therefore, the annoyance threshold does not apply to commercial uses.

Figure 6
Operational Noise Levels (dBA Leq)

CUMULATIVE NOISE IMPACTS

Noise by definition is a localized phenomenon and drastically reduces as distance from the source increases. As a result, only project and growth in the general area of the project site would contribute to cumulative noise impacts. Noise impacts are localized in nature and decrease with distance. Cumulative construction noise impacts have the potential to occur when multiple construction projects in the local area generate noise within the same time frame and contribute to the local ambient noise environment. It is expected that, as with the project, the related projects would implement BMPs, or similar mitigation measures, which would minimize any noise-related nuisances during construction.

Cumulative Construction Noise

Compliance with the existing City Code which regulates construction noise by limiting construction activities to between the hours of 7:00 AM and 7:00 PM Monday through Friday and 8:00 AM and 4:00 PM on Saturdays would be required by all potential cumulative construction projects. Furthermore, the Final Environmental Impact Report (FEIR) for the MoVal 2040 General Plan utilized the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment (2018) criteria to establish construction-related significance thresholds. As shown in the modeling for the proposed project, temporary construction noise from the project would not result in the on-site generation of construction noise levels in excess of standards established by the City and FTA at any sensitive receptors. Therefore, cumulative construction noise would not result in a substantial increase in noise levels at sensitive receptors and would not be significant. No mitigation is required.

Cumulative Project Operational Noise

The existing measured noise levels at sensitive receptors in the project vicinity range between 59.5 and 68.9 dBA L_{eq} (see Table 1). Project operational noise levels are expected to range between 40.8 and 59.2 dBA L_{eq} (see Figure 6) at those locations. Cumulative impacts associated with on-site operation of the project would be less than significant; no mitigation is required.

CUMULATIVE GROUNDBORNE VIBRATION

Because groundborne vibration drops off rapidly with distance from the source, it is highly unlikely that vibration waves created on the project site would combine with vibration waves generated on a nearby construction site and result in a cumulative impact. The proposed project would not contribute to a cumulative groundborne vibration impact. No mitigation is required.

7. REFERENCES

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APPENDICES

Appendix A List of Acronyms
Appendix B Definitions of Acoustical Terms
Appendix C Noise Measurement Field Worksheets
Appendix D Construction Noise Model Worksheets
Appendix E SoundPLAN Worksheets
Appendix F FHWA Traffic Noise Model Worksheets
Appendix G Groundborne Vibration Worksheets

APPENDIX A

LIST OF ACRONYMS

Term	Definition
ADT	Average Daily Traffic
ANSI	American National Standard Institute
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
D/E/N	Day / Evening / Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
dBA/DD	Decibel per Double Distance
dBA L_{eq}	Average Noise Level over a Period of Time
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for '"x" period of time
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
Lp	Sound Pressure Level
LOS C	Level of Service C
Lw	Sound Power Level
OPR	California Governor's Office of Planning and Research
PPV	Peak Particle Velocities
RCNM	Road Construction Noise Model
REMEL	Reference Energy Mean Emission Level
RMS	Root Mean Square

APPENDIX B

DEFINITIONS OF ACOUSTICAL TERMS

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	Lmax is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. Lmin is the minimum level.
Offensive/ Offending/Intrusive Noise	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

APPENDIX C

NOISE MEASUREMENT FIELD WORKSHEETS

Noise Measurement
Field Data

Project Name: Beyond Food Mart, Oliver Street & Iris Avenue, Moreno Valley **Date:** March 2, 2023

Project #: 19606

Noise Measurement #: STNM1 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 15455 Legendary Drive, Moreno Valley, CA 92555

Site Description (Type of Existing Land Use and any other notable features): Measurement Site: Just W of backyard to residence 15455 Legendary Dr, Moreno Valley. Adjacent: Oliver St (running N-S) just W; single-family residential just east; & Iris Ave (running E-W) intersecting with Oliver St ~100' S of STNM1. Vacant project site further west, just past Oliver Street.

Weather: Mostly clear skies,, sunny. Sunset: 5:46 PM **Settings:** SLOW FAST

Temperature: 55 eg F **Wind:** 3 mph **Humidity:** 39% **Terrain:** Flat

Start Time: 1:19 PM **End Time:** 1:34 PM **Run Time:**

Leq: 60.7 dB **Primary Noise Source:** Traffic noise from the 36 vehicles passing microphone on Oliver Street.

Lmax 76.8 dB Traffic noise from vehicles traveling along Iris Avenue.

L2 68.6 dB **Secondary Noise Sources:** Traffic ambiance from vehicles on other roads. Occasional Overhead air traffic.

L8 65.1 dB Bird song. Leaf rustle from 3mph breeze. Some residential ambiance.

L25 60.2 dB

L50 54.7 dB

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/2/2023		

Noise Measurement
Field Data

PHOTOS:

STNM1 looking SSW from sidewalk towards Oliver Street & Iris Avenue intersection (~100').

STNM1 looking E from Oliver St sidewalk towards hedge and backyard cinder-block wall to residence 15455 Legendary Drive, Moreno Valley.

Summary	
File Name on Meter	LxT_Data.201.s
File Name on PC	LxT_0003099-20230302 131955-LxT_Data.201.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM1 33°53'44.74"N 117°10'57.62"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.

Measurement	
Start	2023-03-02 13:19:55
Stop	2023-03-02 13:34:55
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2023-03-02 13:19:10
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.4 dB

Results			
L_{Aeq}	60.7		
LAE	90.3		
EA	118.1698	µPa²h	
EA8	3.781433	mPa²h	
EA40	18.90716	mPa²h	
$L_{Apeak\ (max)}$	2023-03-02 13:26:41	90.1	dB
L_{ASmax}	2023-03-02 13:26:42	76.8	dB
L_{ASmin}	2023-03-02 13:23:42	43.3	dB

			Statistics		
L_{Ceq}	70.9	dB	**LA2.00**	68.6	dB
L_{Aeq}	60.7	dB	**LA8.00**	65.1	dB
L_{Ceq} - L_{Aeq}	10.2	dB	**LA25.00**	60.2	dB
L_{AIeq}	62.1	dB	**LA50.00**	54.7	dB
L_{Aeq}	60.7	dB	**LA66.60**	51.1	dB
L_{AIeq} - L_{Aeq}	1.4	dB	**LA90.00**	46.4	dB
Overload Count	0				

Measurement Report

Report Summary

Meter's File Name	LxT_Data.201.s	Computer's File Name	LxT_0003099-20230302 131955-LxT_Data.201.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM1 33°53'44.74"N 117°10'57.62"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.		
Start Time	2023-03-02 13:19:55	Duration	0:15:00.0
End Time	2023-03-02 13:34:55	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	60.7 dB		
LAE	90.3 dB	SEA	--- dB
EA	118.2 µPa²h	LAFTM5	65.2 dB
EA8	3.8 mPa²h		
EA40	18.9 mPa²h		
LA_{peak}	90.1 dB	2023-03-02 13:26:41	
LAS_{max}	76.8 dB	2023-03-02 13:26:42	
LAS_{min}	43.3 dB	2023-03-02 13:23:42	
LA_{eq}	60.7 dB		
LC_{eq}	70.9 dB	LC_{eq} - LA_{eq}	10.2 dB
LAI_{eq}	62.1 dB	LAI_{eq} - LA_{eq}	1.4 dB

Exceedances	Count	Duration
LAS > 65.0 dB	20	0:01:43.4
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

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

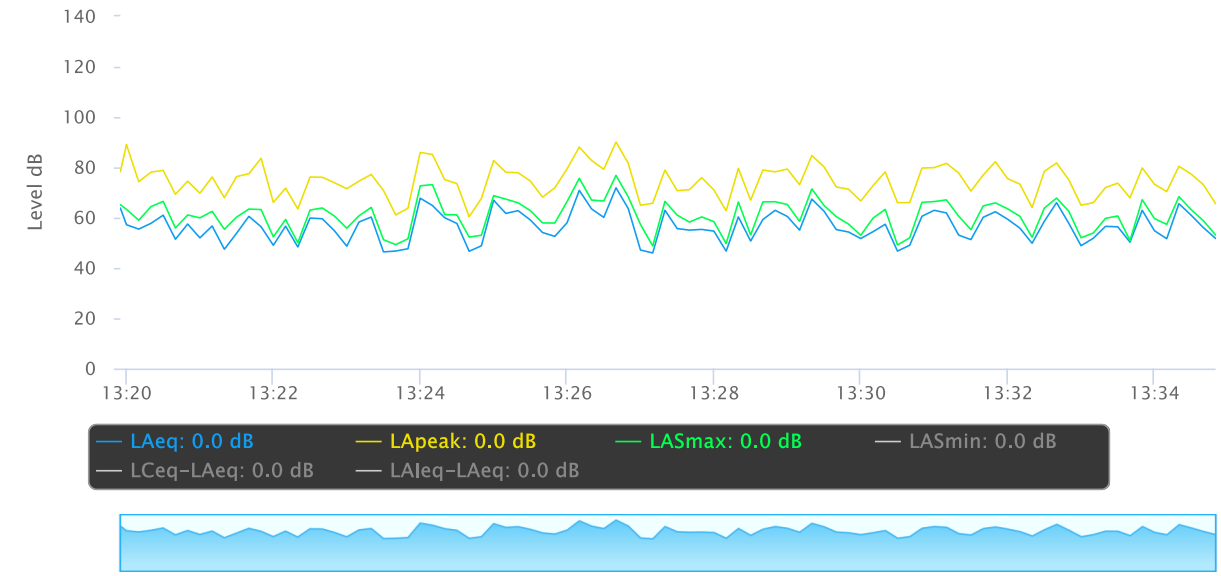
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.7 dB		70.9 dB		--- dB	
$L_{S(max)}$	76.8 dB	2023-03-02 13:26:42	--- dB		--- dB	
$L_{S(min)}$	43.3 dB	2023-03-02 13:23:42	--- dB		--- dB	
$L_{Peak(max)}$	90.1 dB	2023-03-02 13:26:41	--- dB		--- dB	

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

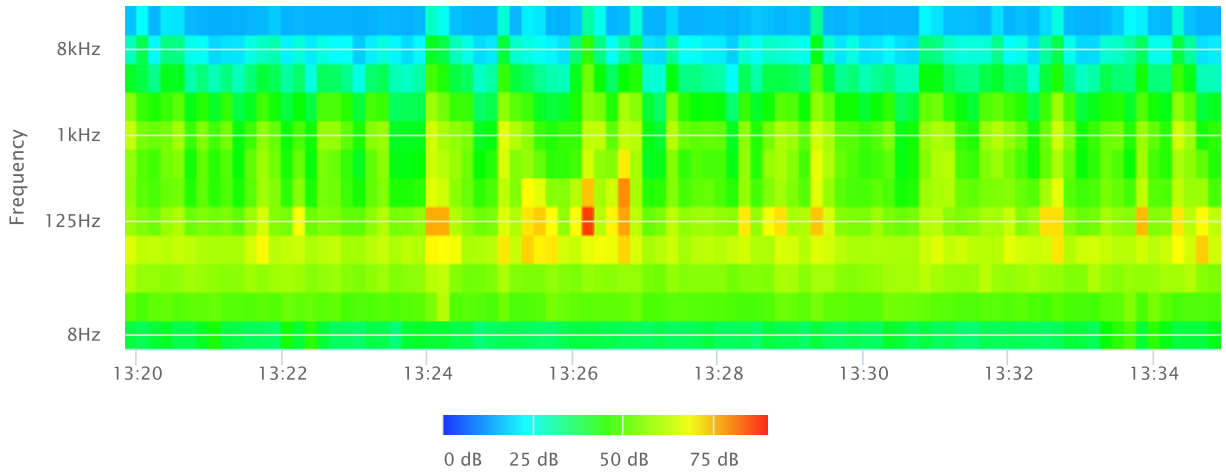
Statistics

LAS 2.0	68.6 dB
LAS 8.0	65.1 dB
LAS 25.0	60.2 dB
LAS 50.0	54.7 dB
LAS 66.6	51.1 dB
LAS 90.0	46.4 dB

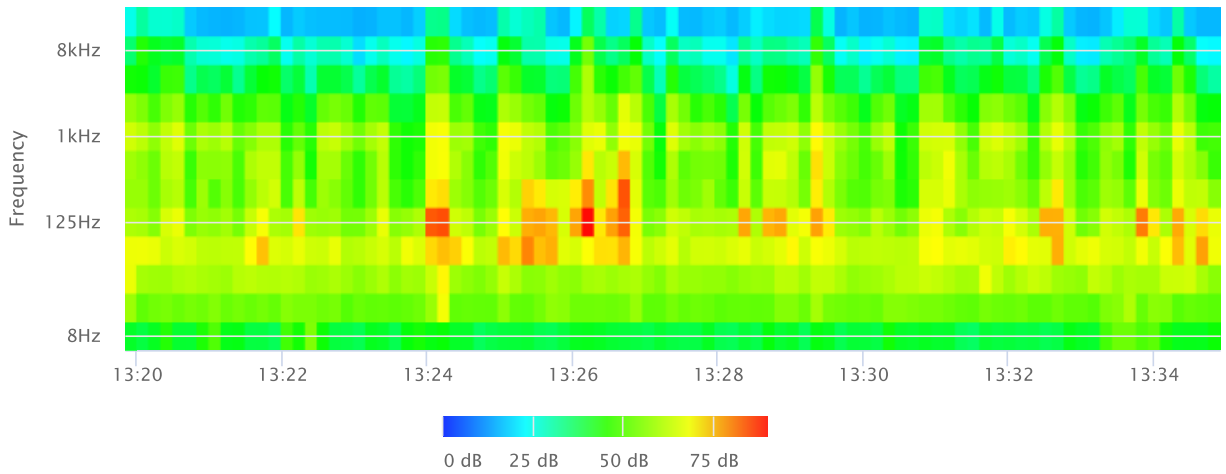
Time History



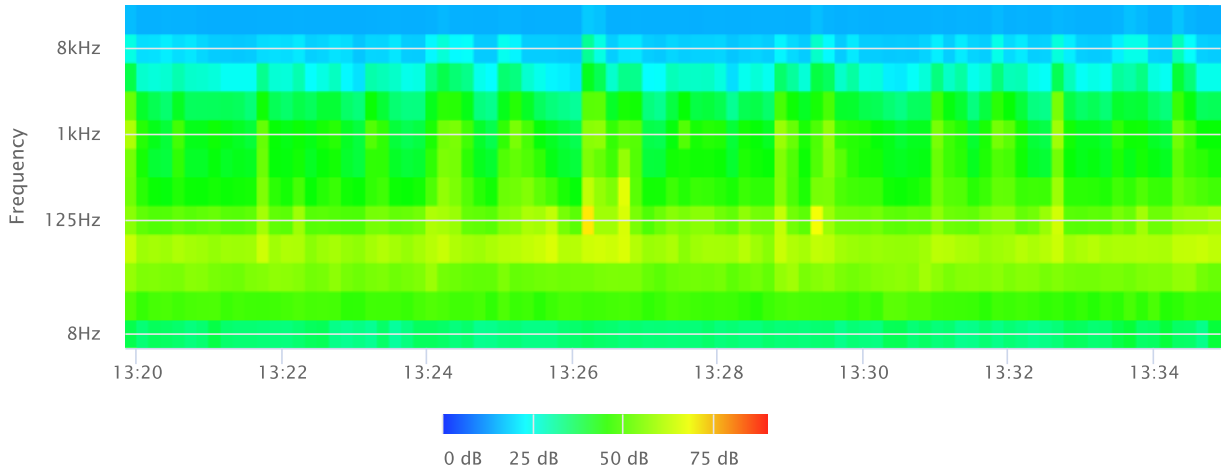
OBA 1/1 Leq



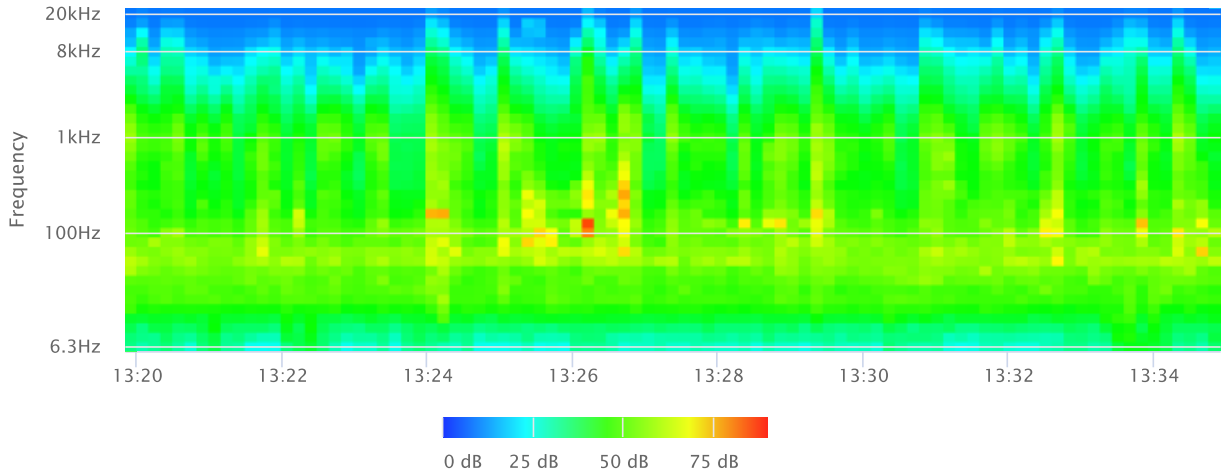
OBA 1/1 Lmax



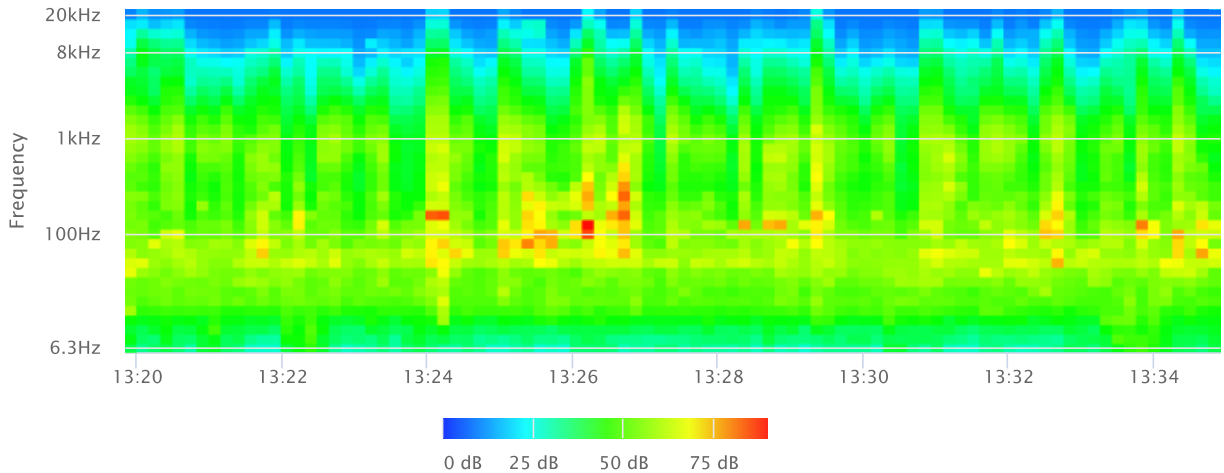
OBA 1/1 Lmin



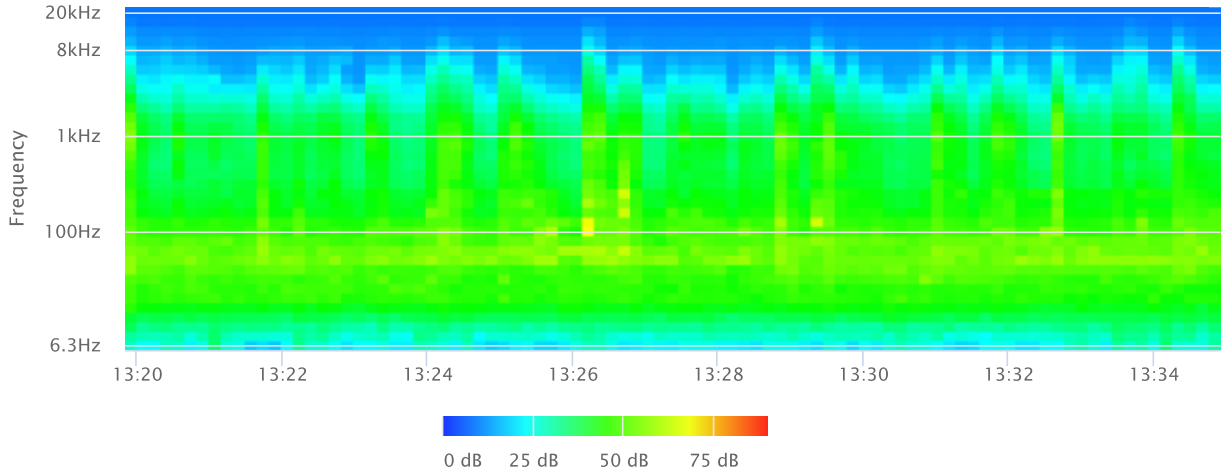
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
13:20
13:22
13:24
13:26
13:28
13:30
13:32
13:34

0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond Food Mart, Oliver Street & Iris Avenue, Moreno Valley **Date:** March 2, 2023

Project #: 19606

Noise Measurement #: STNM2 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 15555 Oliver Street, Moreno Valley, CA 92555

Site Description (Type of Existing Land Use and any other notable features): Measurement Site: Just N of residence 15555 Oliver St, Moreno Valley & south of Iris Ave. Adjacent: Oliver St (running N-S) ~50' E; Iris Ave (running E-W) adjacent to N; & single-family residential adjacent to south. Vacant project site just N of Iris Ave.

Weather: Mostly clear skies,, sunny. Sunset: 5:46 PM **Settings:** SLOW FAST

Temperature: 55 eg F **Wind:** 3 mph **Humidity:** 39% **Terrain:** Flat

Start Time: 1:58 PM **End Time:** 2:13 PM **Run Time:**

Leq:	66.6	dB
Lmax	83.3	dB
L2	75.3	dB
L8	72.2	dB
L25	65.9	dB
L50	61.0	dB

Primary Noise Source: Traffic noise from the 248 vehicles passing microphone on Iris Avenue.

Traffic noise from vehicles traveling along Oliver Street.

Secondary Noise Sources: Traffic ambiance from vehicles on other roads. Occasional Overhead air traffic.

Bird song. Leaf rustle from 3mph breeze. Some residential ambiance.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/2/2023		

Noise Measurement
Field Data

PHOTOS:

STNM2 looking E from sideawlk towards Oliver Street & Iris Ave intersection (~50').

STNM2 looking SSE towards frontyard of residence 15555 Oliver Street, Moreno Valley (residence on right of image).

Summary	
File Name on Meter	LxT_Data.202.s
File Name on PC	LxT_0003099-20230302 135805-LxT_Data.202.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM2 33°53'42.66"N 117°10'59.60"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.

Measurement	
Start	2023-03-02 13:58:05
Stop	2023-03-02 14:13:05
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2023-03-02 13:57:47
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.5 dB

Results				
LA_{eq}	66.6			
LAE	96.2			
EA	458.8529	µPa²h		
EA8	14.68329	mPa²h		
EA40	73.41647	mPa²h		
$LA_{peak\ (max)}$	2023-03-02 13:59:50	95.4	dB	
LAS_{max}	2023-03-02 13:59:51	83.3	dB	
LAS_{min}	2023-03-02 14:02:51	48.2	dB	

			Statistics	
LC_{eq}	75.4	dB	**LA2.00**	75.3 dB
LA_{eq}	66.6	dB	**LA8.00**	72.2 dB
LC_{eq} - LA_{eq}	8.8	dB	**LA25.00**	65.9 dB
LAI_{eq}	69.0	dB	**LA50.00**	61.0 dB
LA_{eq}	66.6	dB	**LA66.60**	58.2 dB
LAI_{eq} - LA_{eq}	2.4	dB	**LA90.00**	53.7 dB
Overload Count	0			

Measurement Report

Report Summary

Meter's File Name	LxT_Data.202.s	Computer's File Name	LxT_0003099-20230302 135805-LxT_Data.202.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM2 33°53'42.66"N 117°10'59.60"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.		
Start Time	2023-03-02 13:58:05	Duration	0:15:00.0
End Time	2023-03-02 14:13:05	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	66.6 dB		
LAE	96.2 dB	SEA	--- dB
EA	458.9 µPa²h	LAFTM5	71.6 dB
EA8	14.7 mPa²h		
EA40	73.4 mPa²h		
LA_{peak}	95.4 dB	2023-03-02 13:59:50	
LAS_{max}	83.3 dB	2023-03-02 13:59:51	
LAS_{min}	48.2 dB	2023-03-02 14:02:51	
LA_{eq}	66.6 dB		
LC_{eq}	75.4 dB	LC_{eq} - LA_{eq}	8.8 dB
LAI_{eq}	69.0 dB	LAI_{eq} - LA_{eq}	2.4 dB

Exceedances	Count	Duration
LAS > 65.0 dB	24	0:05:06.1
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

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

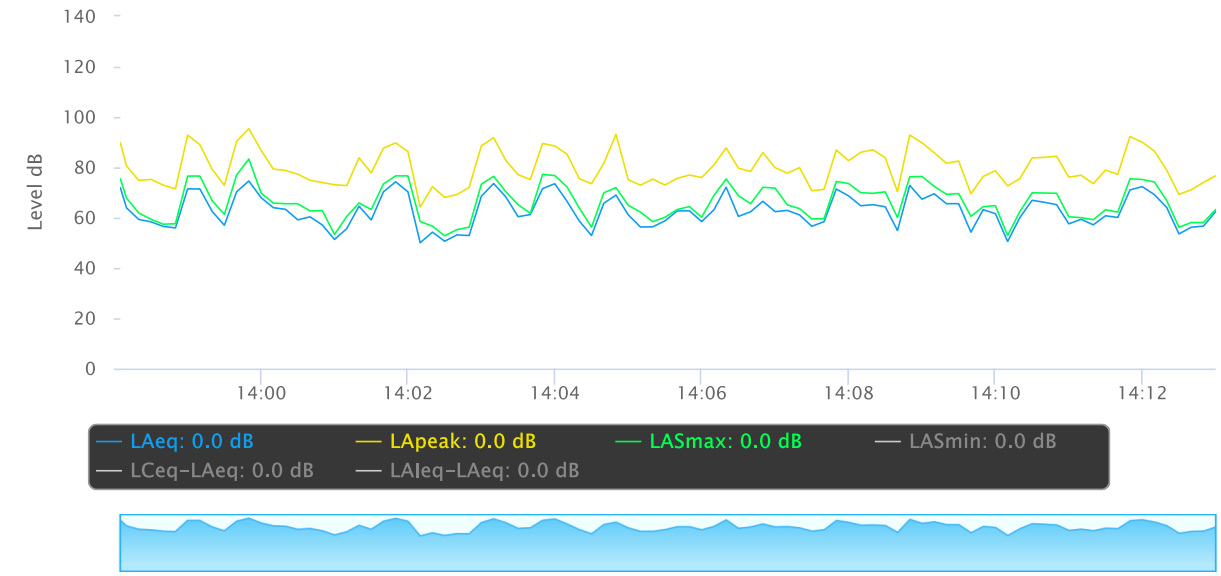
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	66.6 dB		75.4 dB		--- dB	
$L_{S(max)}$	83.3 dB	2023-03-02 13:59:51	--- dB		--- dB	
$L_{S(min)}$	48.2 dB	2023-03-02 14:02:51	--- dB		--- dB	
$L_{Peak(max)}$	95.4 dB	2023-03-02 13:59:50	--- dB		--- dB	

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

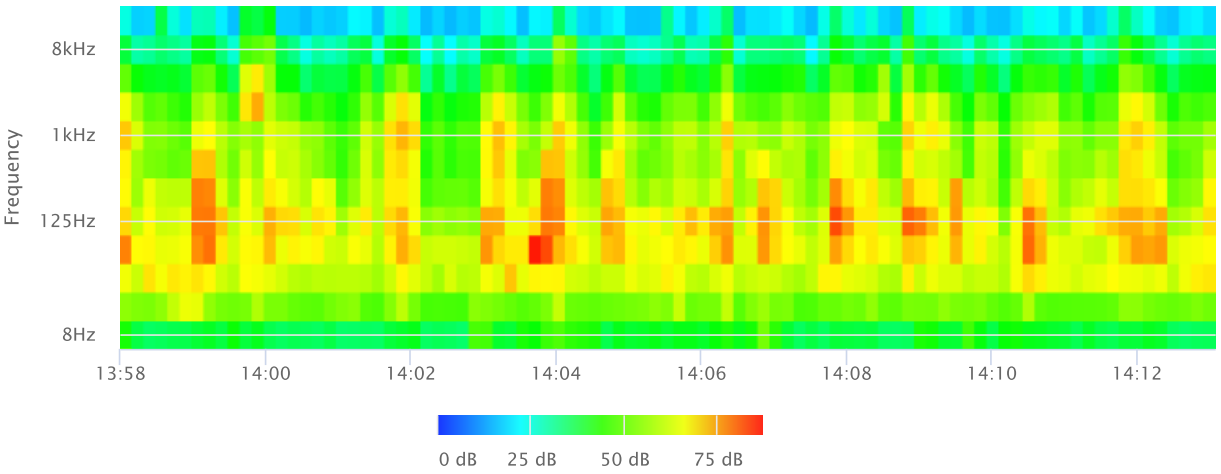
Statistics

LAS 2.0	75.3 dB
LAS 8.0	72.2 dB
LAS 25.0	65.9 dB
LAS 50.0	61.0 dB
LAS 66.6	58.2 dB
LAS 90.0	53.7 dB

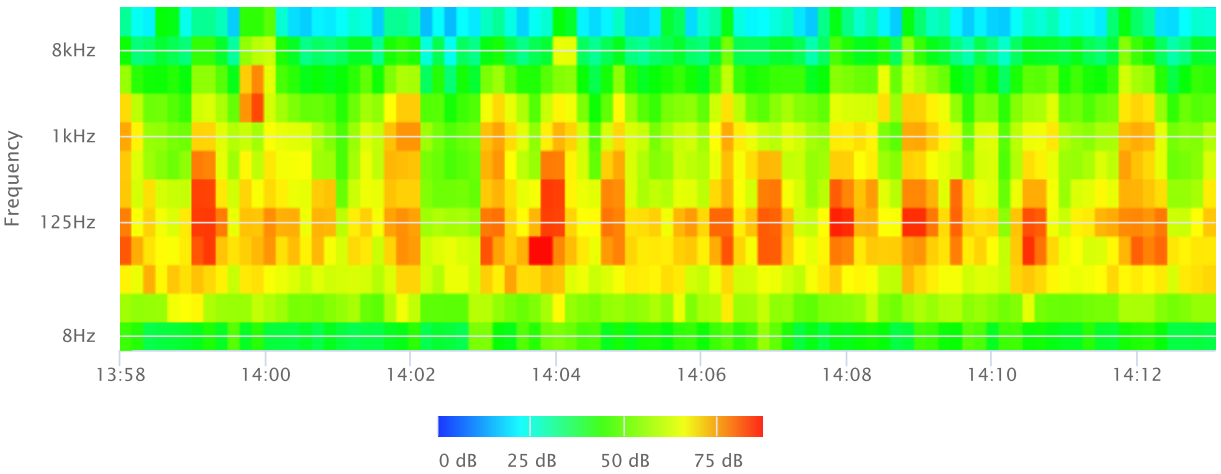
Time History



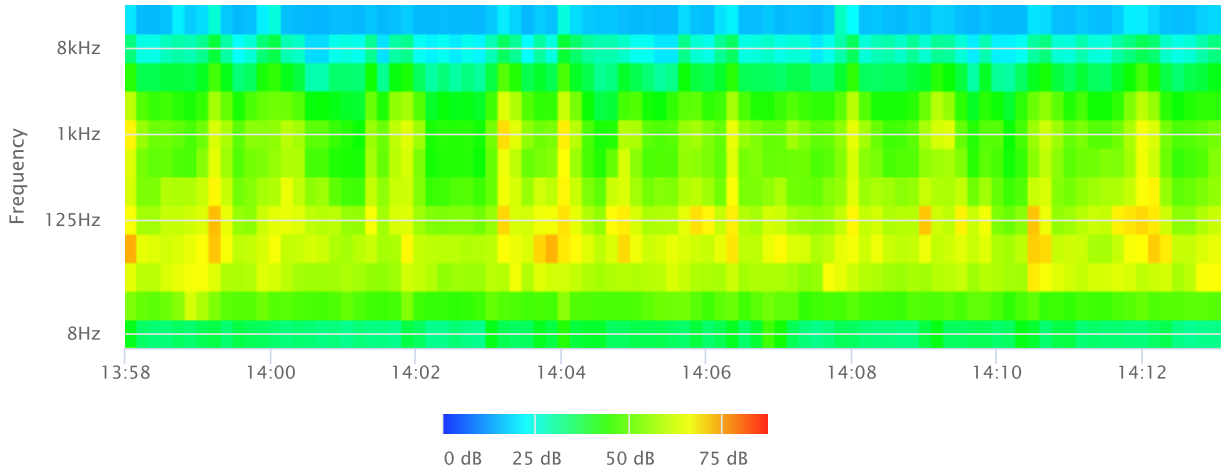
OBA 1/1 Leq



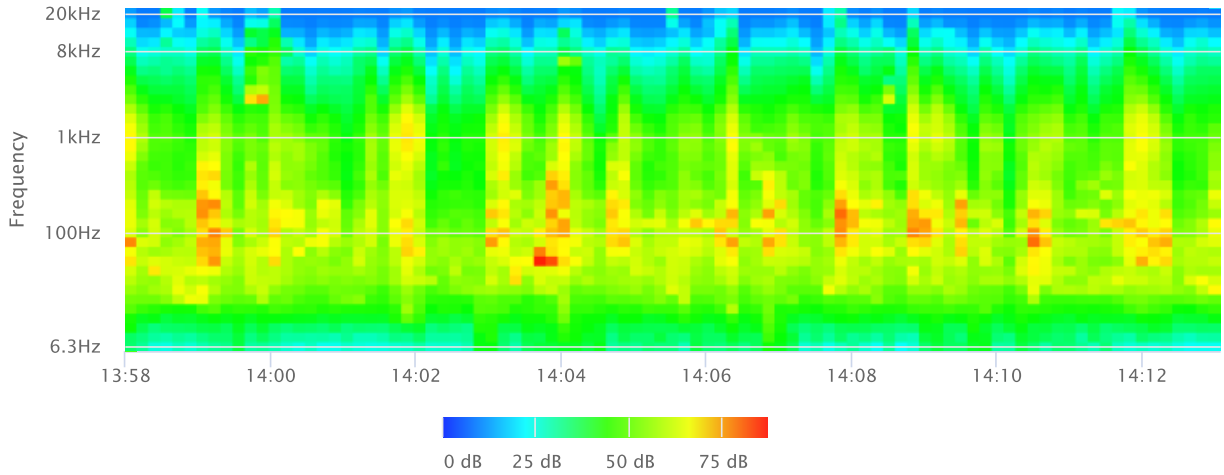
OBA 1/1 Lmax



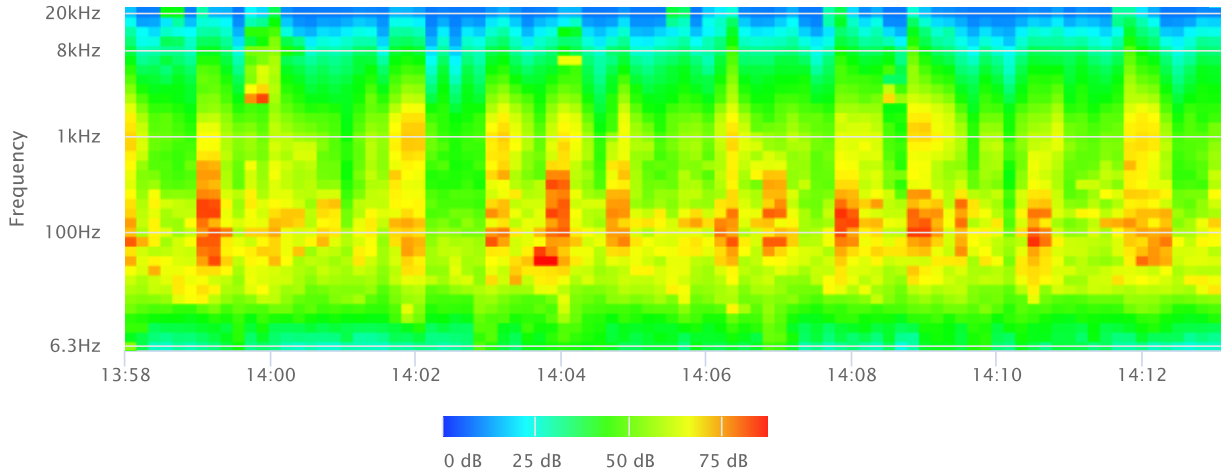
OBA 1/1 Lmin



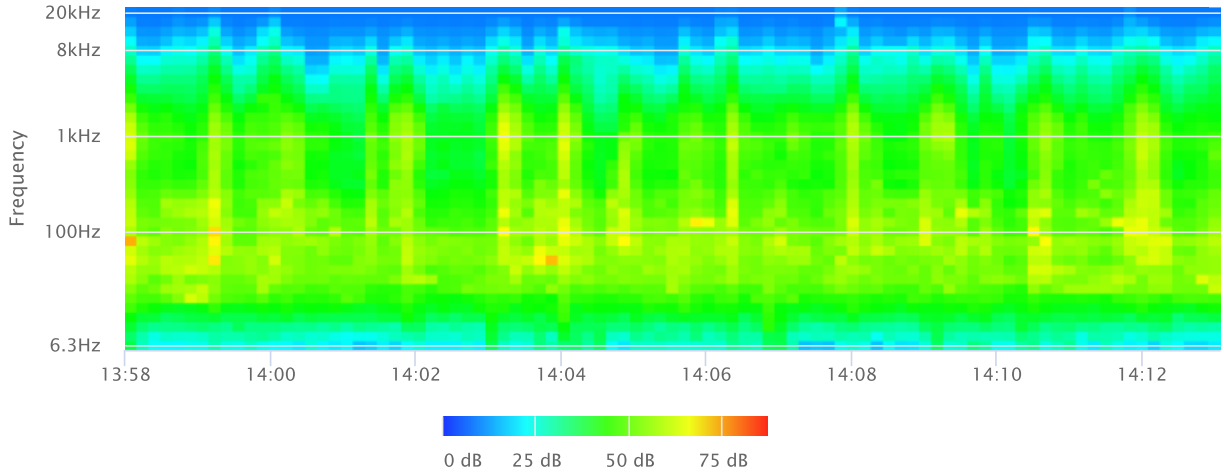
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
13:58
14:00
14:02
14:04
14:06
14:08
14:10
14:12
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond Food Mart, Oliver Street & Iris Avenue, Moreno Valley **Date:** March 2, 2023

Project #: 19606

Noise Measurement #: STNM3 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 27428 Arla Street, Moreno Valley, CA 92555

Site Description (Type of Existing Land Use and any other notable features): Measurement Site: Just N of residence 27404 Arla St & S of Iris Ave.

Adjacent: Oliver St (running N-S) ~220' E; Iris Ave (running E-W) adjacent to N; & single-family residential adjacent to south. Vacant project site just N of Iris Ave.

Weather: Mostly clear skies,, sunny. Sunset: 5:46 PM **Settings:** SLOW FAST

Temperature: 55 eg F **Wind:** 3 mph **Humidity:** 39% **Terrain:** Flat

Start Time: 2:21 PM **End Time:** 2:36 PM **Run Time:**

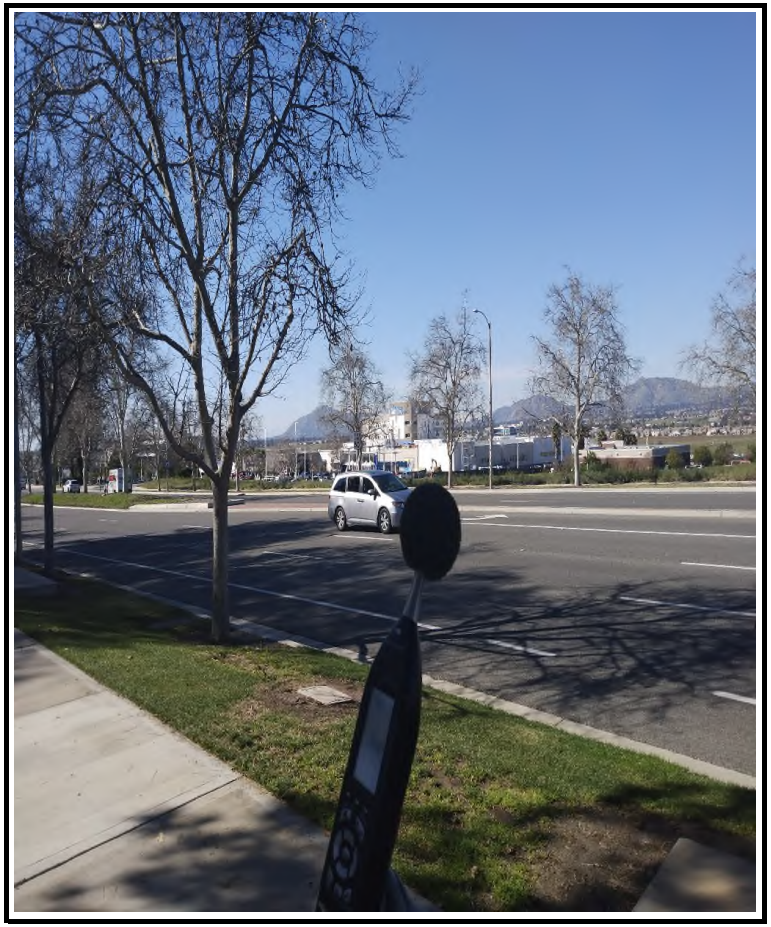
Leq:	68.9	dB	**Primary Noise Source:** Traffic noise from the 292 vehicles passing microphone on Iris Avenue.
Lmax	88.5	dB	Traffic noise from vehicles traveling along Oliver Street.
L2	77.4	dB	**Secondary Noise Sources:** Traffic ambiance from vehicles on other roads. Occasional overhead air traffic.
L8	72.5	dB	Bird song. Leaf rustle from 3mph breeze. Some residential ambiance.
L25	67.9	dB	
L50	63.5	dB	

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/2/2023		

Noise Measurement
Field Data

PHOTOS:

STNM3 looking E from sidewalk towards Oliver Street & Iris Ave intersection (~220').



STNM3 looking NW across Iris Ave towards hospital building , 27300 Iris Avenue, Moreno Valley (`750').

Summary	
File Name on Meter	LxT_Data.203.s
File Name on PC	LxT_0003099-20230302 142148-LxT_Data.203.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM3 33°53'42.78"N 117°11'1.22"W
Job Description	15 minute noise measurement (1 x 15 minutes)
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.

Measurement	
Start	2023-03-02 14:21:48
Stop	2023-03-02 14:36:48
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2023-03-02 14:21:30
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	C Weighting
OBA Max Spectrum	At LMax
Overload	122.7 dB

Results			
LA_{eq}	68.9		
LAE	98.4		
EA	770.8833	µPa²h	
EA8	24.66826	mPa²h	
EA40	123.3413	mPa²h	
$LA_{peak\ (max)}$	2023-03-02 14:29:01	104.3	dB
LAS_{max}	2023-03-02 14:29:02	88.5	dB
LAS_{min}	2023-03-02 14:25:04	47.9	dB

		Statistics	
LC_{eq}	76.8 dB	**LA2.00**	77.4 dB
LA_{eq}	68.9 dB	**LA8.00**	72.5 dB
LC_{eq} - LA_{eq}	7.9 dB	**LA25.00**	67.9 dB
LAI_{eq}	70.6 dB	**LA50.00**	63.5 dB
LA_{eq}	68.9 dB	**LA66.60**	60.1 dB
LAI_{eq} - LA_{eq}	1.8 dB	**LA90.00**	54.3 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.203.s	Computer's File Name	LxT_0003099-20230302 142148-LxT_Data.203.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM3 33°53'42.78"N 117°11'1.22"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.		
Start Time	2023-03-02 14:21:48	Duration	0:15:00.0
End Time	2023-03-02 14:36:48	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	68.9 dB		
LAE	98.4 dB	SEA	--- dB
EA	770.9 µPa²h	LAFTM5	73.4 dB
EA8	24.7 mPa²h		
EA40	123.3 mPa²h		
LA_{peak}	104.3 dB	2023-03-02 14:29:01	
LAS_{max}	88.5 dB	2023-03-02 14:29:02	
LAS_{min}	47.9 dB	2023-03-02 14:25:04	
LA_{eq}	68.9 dB		
LC_{eq}	76.8 dB	LC_{eq} - LA_{eq}	7.9 dB
LAI_{eq}	70.6 dB	LAI_{eq} - LA_{eq}	1.8 dB

Exceedances	Count	Duration
LAS > 65.0 dB	29	0:07:20.1
LAS > 85.0 dB	1	0:00:02.10
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

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

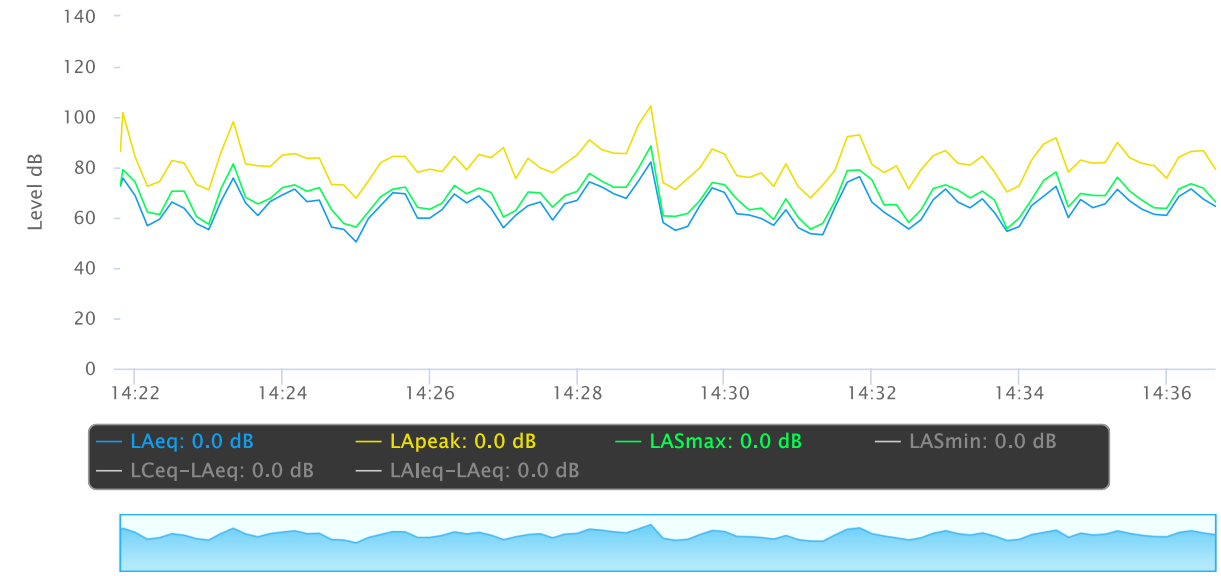
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	68.9 dB		76.8 dB		--- dB	
$L_{S(max)}$	88.5 dB	2023-03-02 14:29:02	--- dB		--- dB	
$L_{S(min)}$	47.9 dB	2023-03-02 14:25:04	--- dB		--- dB	
$L_{Peak(max)}$	104.3 dB	2023-03-02 14:29:01	--- dB		--- dB	

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

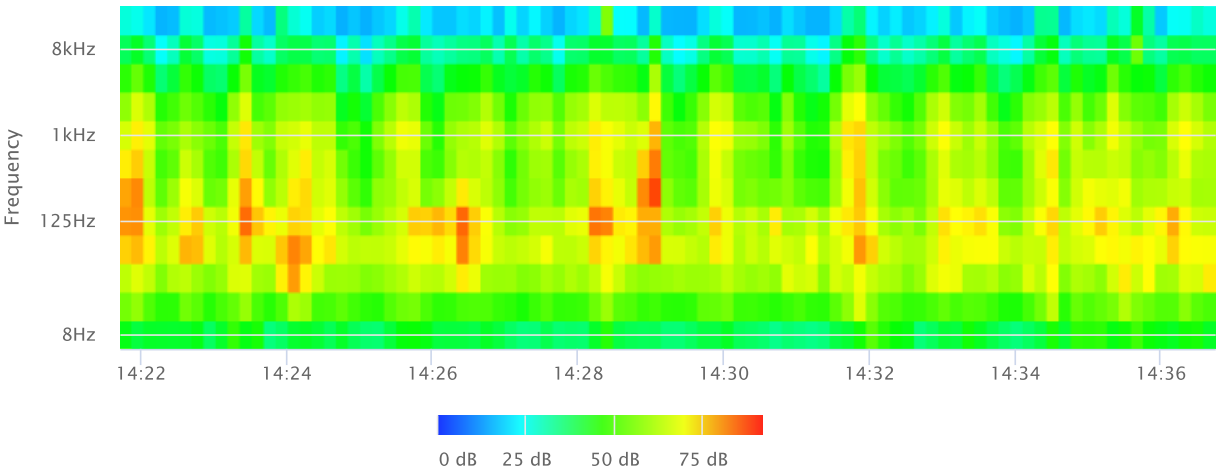
Statistics

LAS 2.0	77.4 dB
LAS 8.0	72.5 dB
LAS 25.0	67.9 dB
LAS 50.0	63.5 dB
LAS 66.6	60.1 dB
LAS 90.0	54.3 dB

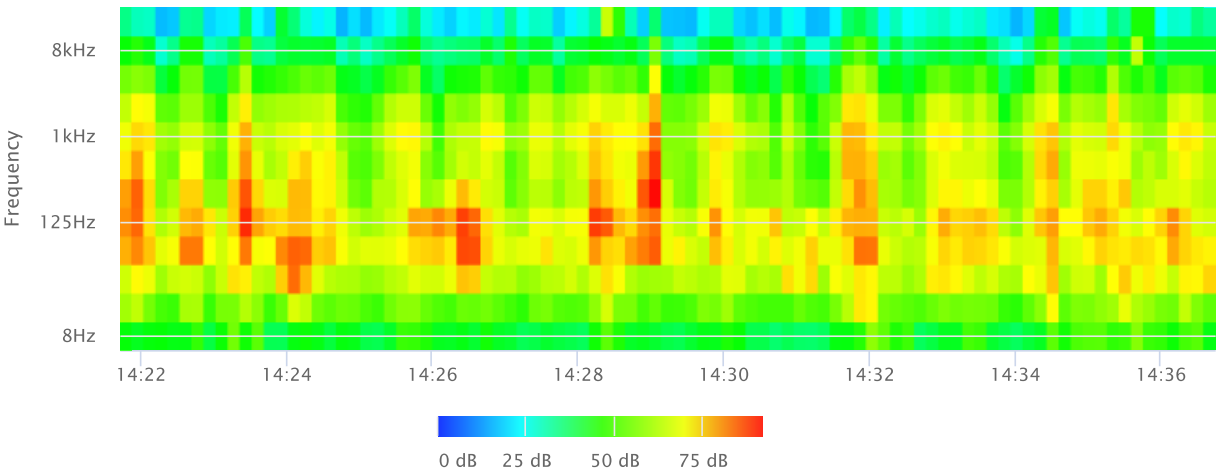
Time History



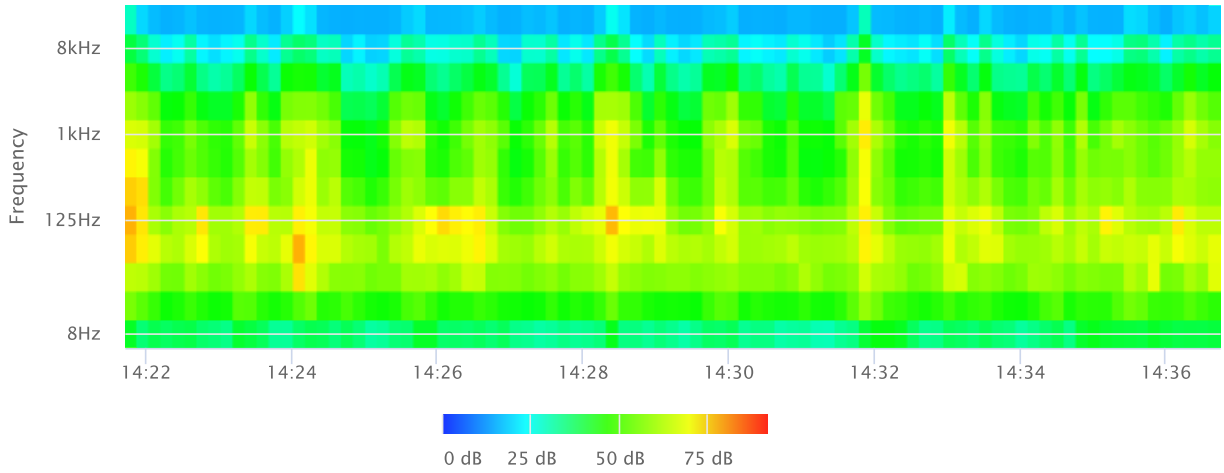
OBA 1/1 Leq



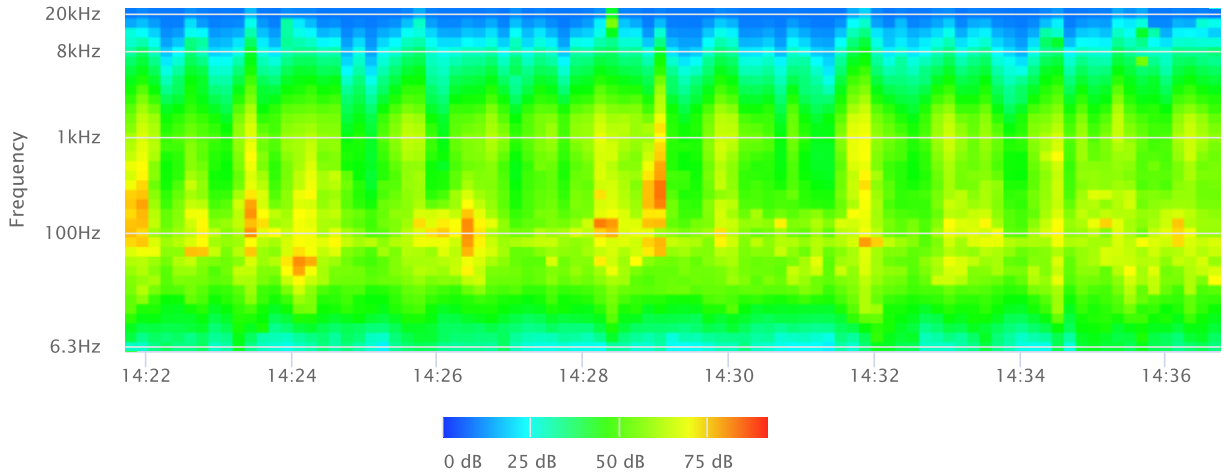
OBA 1/1 Lmax



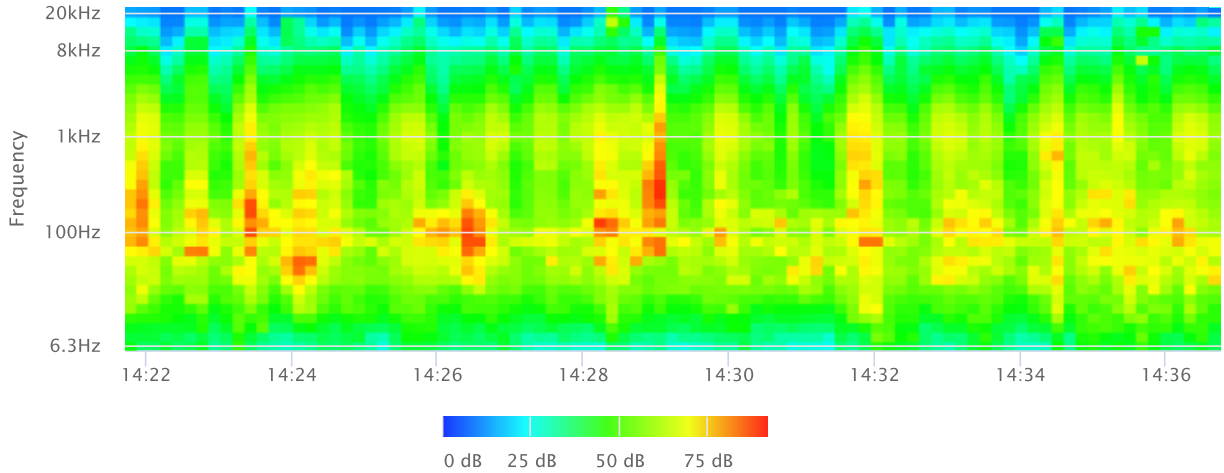
OBA 1/1 Lmin



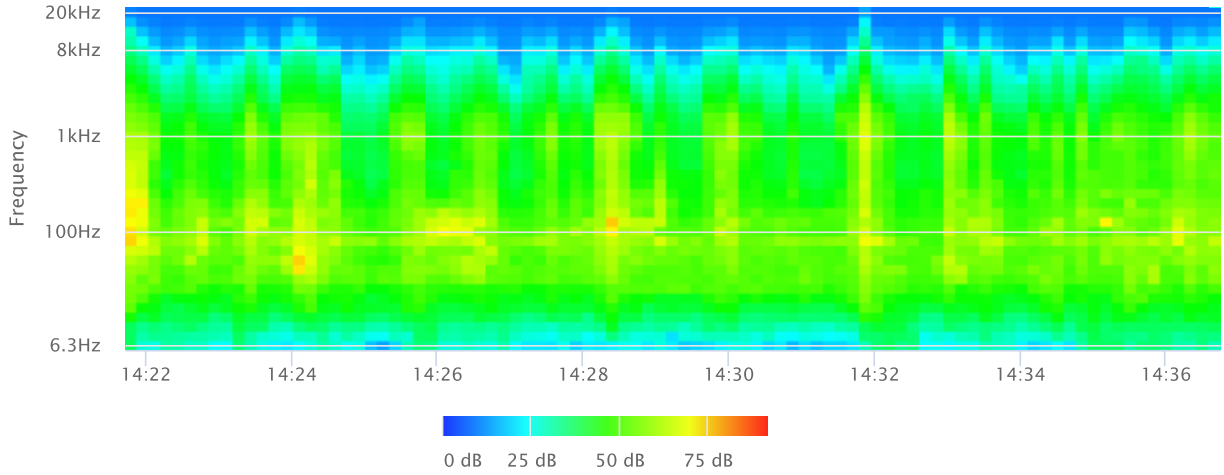
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
14:22
14:24
14:26
14:28
14:30
14:32
14:34
14:36
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond food Mart, Oliver Street & Iris Avenue, Moreno Valley **Date:** March 2, 2023

Project #: 19606

Noise Measurement #: STNM4 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 27392 Arla Street, Moreno Valley, CA 92555

Site Description (Type of Existing Land Use and any other notable features): Measurement Site: Just N of residence 27392 Arla St & S of Iris Ave.

Adjacent: Oliver St (running N-S) ~400' E; Iris Ave (running E-W) adjacent to N; & single-family residential adjacent to S. Vacant project site just north of Iris Ave.

Weather: Mostly clear skies,, sunny. Sunset: 5:46 PM **Settings:** SLOW FAST

Temperature: 55 eg F **Wind:** 3 mph **Humidity:** 39% **Terrain:** Flat

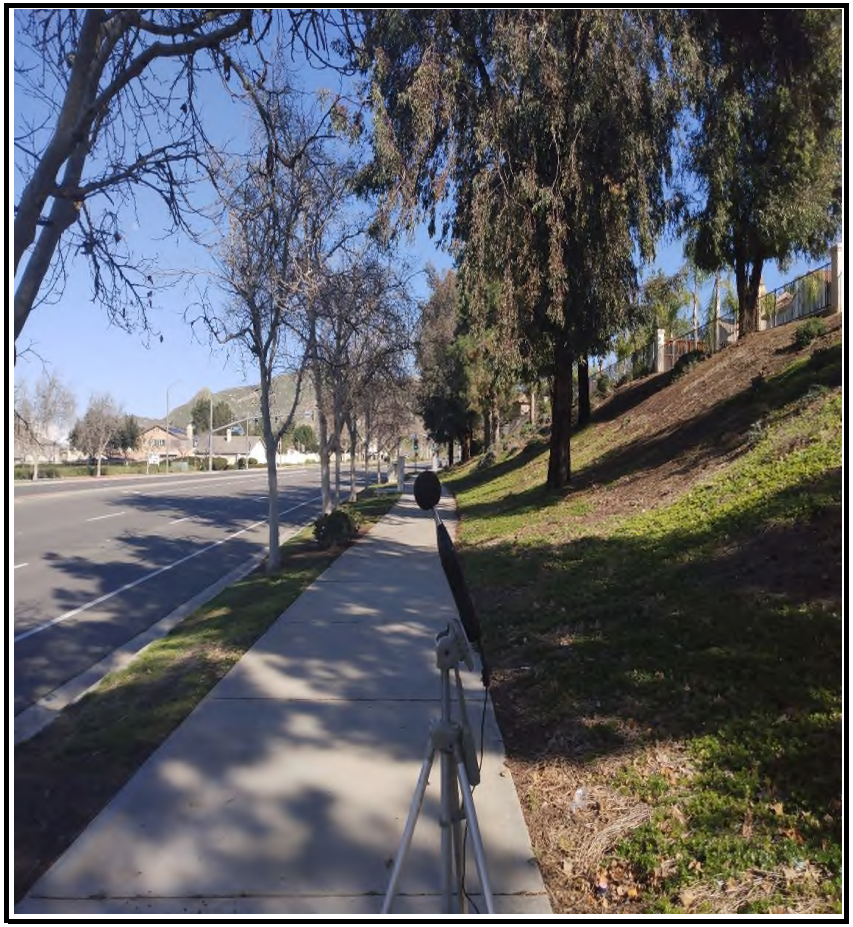
Start Time: 2:45 PM **End Time:** 3:00 PM **Run Time:**

Leq:	67.8	dB	**Primary Noise Source:** Traffic noise from the 298 vehicles passing microphone on Iris Avenue.
Lmax	80.7	dB	Traffic ambiance from vehicles traveling along Oliver Street.
L2	75.7	dB	**Secondary Noise Sources:** Traffic ambiance from vehicles on other roads. Occasional overhead air traffic.
L8	72.6	dB	Bird song. Leaf rustle from 3mph breeze. Some residential ambiance.
L25	68.8	dB	
L50	63.0	dB	

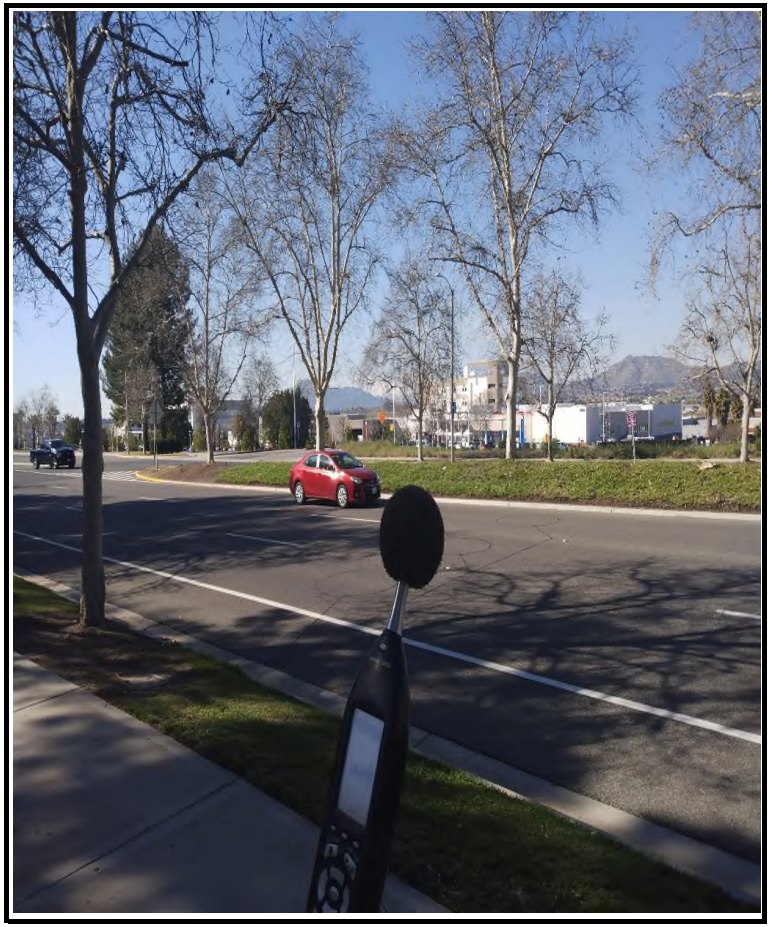
NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/2/2023		

Noise Measurement
Field Data

PHOTOS:



STNM4 looking E from sidewalk towards Oliver Street & Iris Ave intersection (~400').



STNM4 looking NNW across Iris Ave towards hospital building, 27300 Iris Avenue, Moreno Valley (~650').

Summary				
File Name on Meter	LxT_Data.204.s			
File Name on PC	LxT_0003099-20230302 144507-LxT_Data.204.ldbin			
Serial Number	3099			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	Ian Edward Gallagher			
Location	STNM4 33°53'42.83"N 117°11'3.59"W			
Job Description	15 minute noise measurement (1 x 15 minutes)			
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.			
Measurement				
Start	2023-03-02 14:45:07			
Stop	2023-03-02 15:00:07			
Duration	00:15:00.0			
Run Time	00:15:00.0			
Pause	00:00:00.0			
Pre-Calibration	2023-03-02 14:44:50			
Post-Calibration	None			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamplifier	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Normal			
OBA Bandwidth	1/1 and 1/3			
OBA Frequency Weighting	C Weighting			
OBA Max Spectrum	At LMax			
Overload	122.6 dB			
Results				
LA_{eq}	67.8			
LAE	97.3			
EA	602.2152 µPa²h			
EA8	19.27089 mPa²h			
EA40	96.35444 mPa²h			
$LA_{peak\ (max)}$	2023-03-02 14:47:35	101.1 dB		
LAS_{max}	2023-03-02 14:49:44	80.7 dB		
LAS_{min}	2023-03-02 14:45:50	43.0 dB		
			Statistics	
LC_{eq}	75.9 dB		**LA2.00**	75.7 dB
LA_{eq}	67.8 dB		**LA8.00**	72.6 dB
LC_{eq} - LA_{eq}	8.1 dB		**LA25.00**	68.8 dB
LAI_{eq}	69.6 dB		**LA50.00**	63.0 dB
LA_{eq}	67.8 dB		**LA66.60**	59.7 dB
LAI_{eq} - LA_{eq}	1.8 dB		**LA90.00**	51.7 dB
Overload Count	0			

Measurement Report

Report Summary

Meter's File Name	LxT_Data.204.s	Computer's File Name	LxT_0003099-20230302 144507-LxT_Data.204.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM4 33°53'42.83"N 117°11'3.59"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.		
Start Time	2023-03-02 14:45:07	Duration	0:15:00.0
End Time	2023-03-02 15:00:07	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	67.8 dB		
LAE	97.3 dB	SEA	--- dB
EA	602.2 µPa²h	LAFTM5	72.5 dB
EA8	19.3 mPa²h		
EA40	96.4 mPa²h		
LA_{peak}	101.1 dB	2023-03-02 14:47:35	
LAS_{max}	80.7 dB	2023-03-02 14:49:44	
LAS_{min}	43.0 dB	2023-03-02 14:45:50	
LA_{eq}	67.8 dB		
LC_{eq}	75.9 dB	LC_{eq} - LA_{eq}	8.1 dB
LAI_{eq}	69.6 dB	LAI_{eq} - LA_{eq}	1.8 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	33	0:07:03.3
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
--- dB	--- dB	0.0 dB

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	67.8 dB		75.9 dB		--- dB	
$L_{S(max)}$	80.7 dB	2023-03-02 14:49:44	--- dB		--- dB	
$L_{S(min)}$	43.0 dB	2023-03-02 14:45:50	--- dB		--- dB	
$L_{Peak(max)}$	101.1 dB	2023-03-02 14:47:35	--- dB		--- dB	

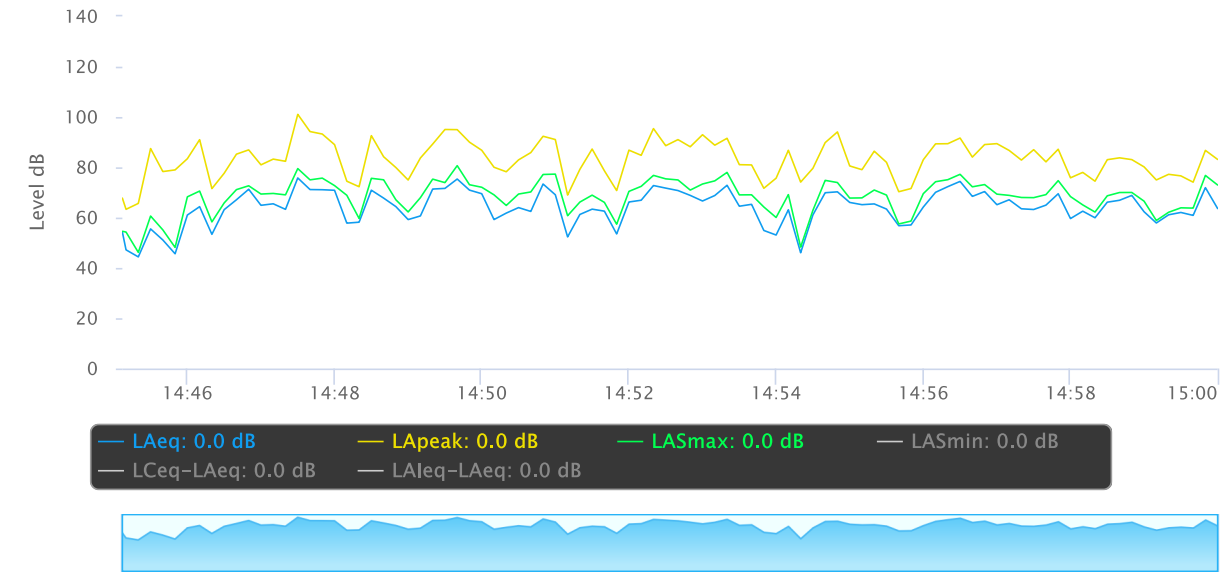
Overloads

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

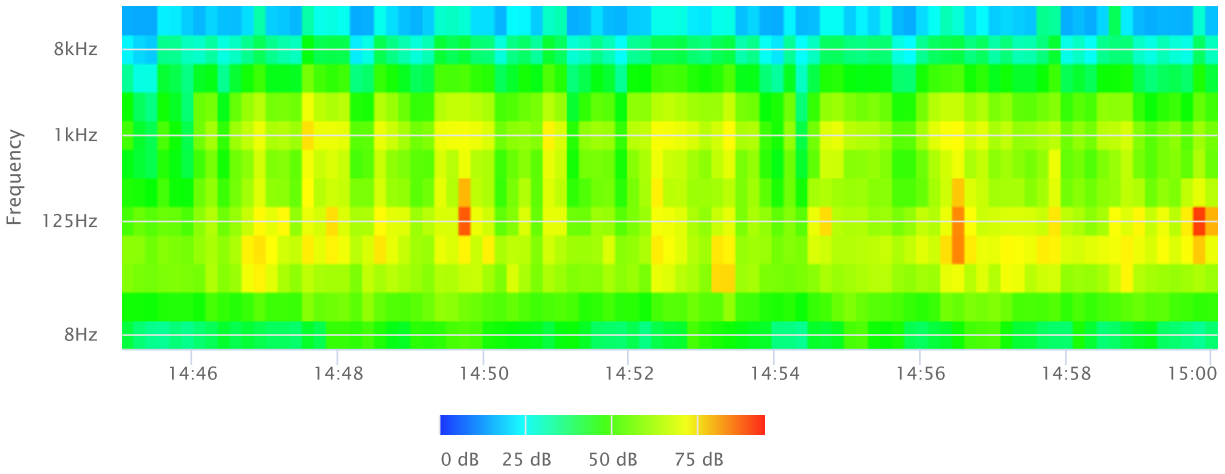
Statistics

LAS 2.0	75.7 dB
LAS 8.0	72.6 dB
LAS 25.0	68.8 dB
LAS 50.0	63.0 dB
LAS 66.6	59.7 dB
LAS 90.0	51.7 dB

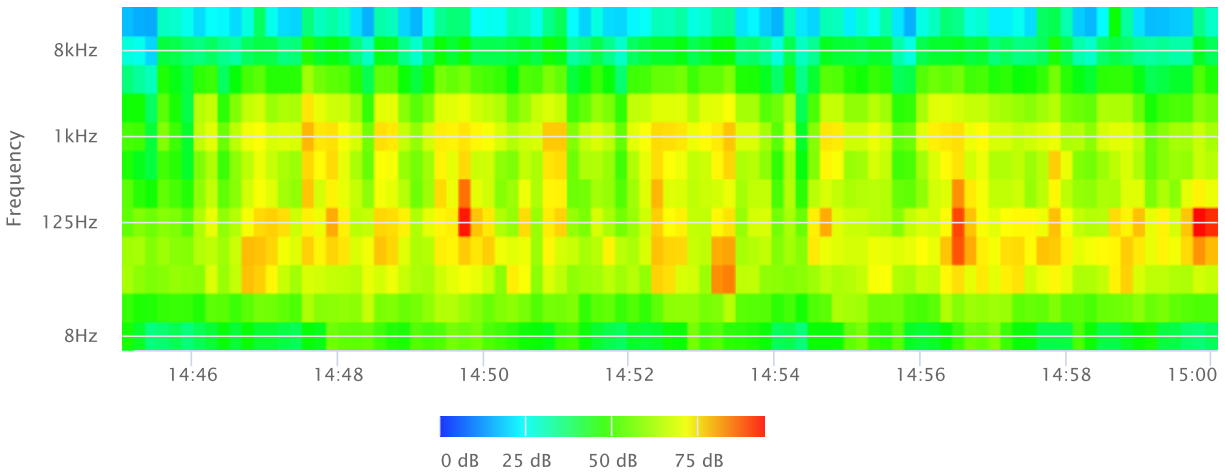
Time History



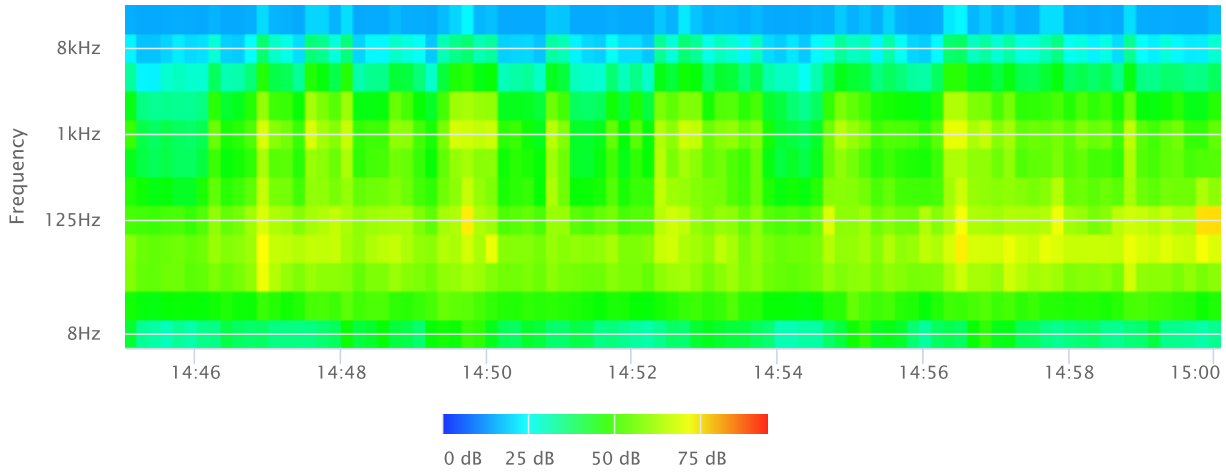
OBA 1/1 Leq



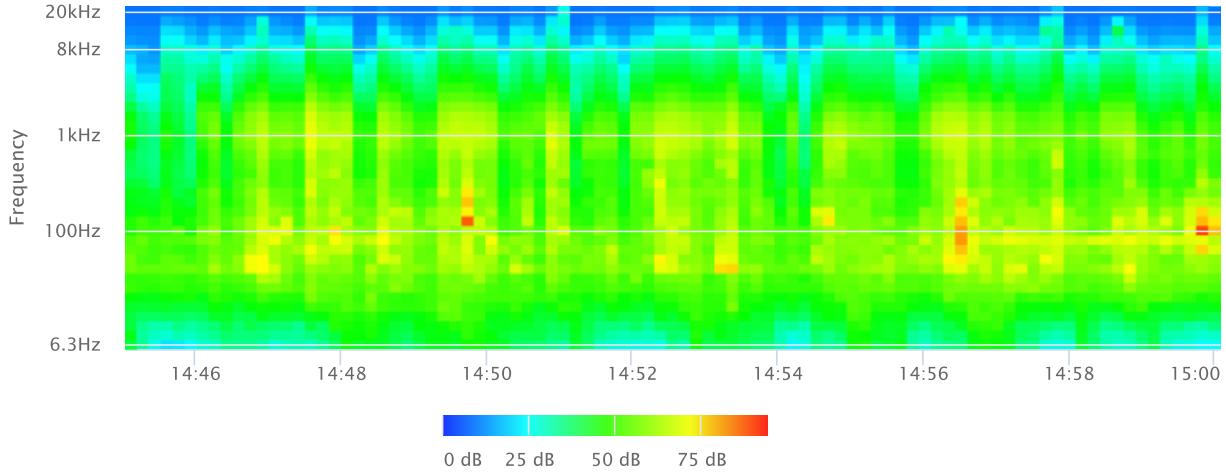
OBA 1/1 Lmax



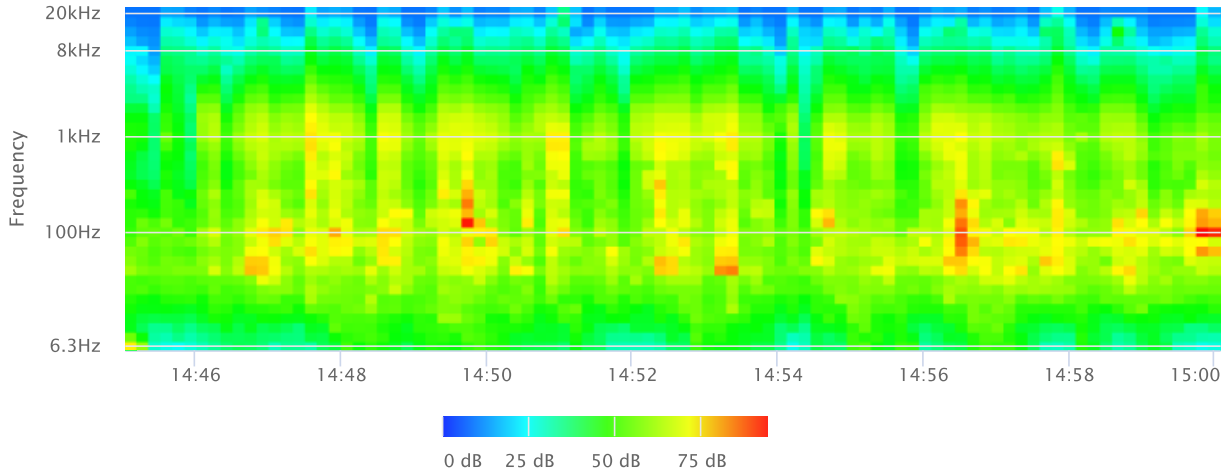
OBA 1/1 Lmin



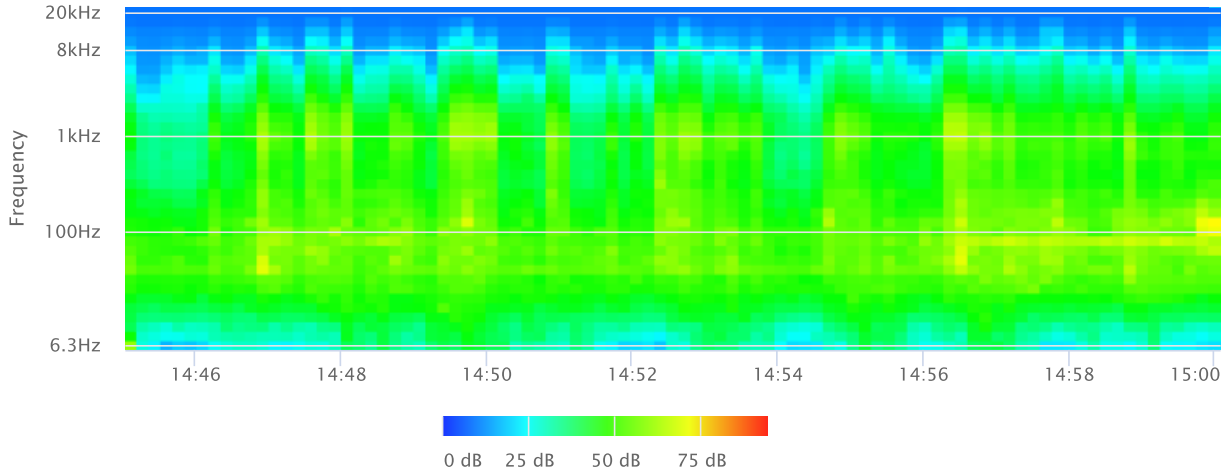
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
14:46
14:48
14:50
14:52
14:54
14:56
14:58
15:00
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond Food Mart, Oliver Street & Iris Avenue, Moreno Valley **Date:** March 2, 2023

Project #: 19606

Noise Measurement #: STNM5 Run Time: 15 minutes (1 x 15 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 27300 Iris Avenue, Moreno Valley, CA 92555

Site Description (Type of Existing Land Use and any other notable features): Project Site: Just east of hospital parking lot & west of eastern access road to hospital, 27300 Iris Avenue, Moreno Valley. Adjacent: Oliver St (running N-S) ~650' E; Iris Ave (running E-W) ~130' S; hospital parking lot & associated buildings to W/NW; & access road to east with vacant project site further east of STNM5.

Weather: Mostly clear skies,, sunny. Sunset: 5:46 PM **Settings:** SLOW FAST

Temperature: 55 eg F **Wind:** 3 mph **Humidity:** 39% **Terrain:** Flat

Start Time: 3:18 PM **End Time:** 3:33 PM **Run Time:**

Leq: 59.5 dB

Lmax 74.1 dB

L2 67.4 dB

L8 62.5 dB

L25 59.5 dB

L50 57.3 dB

Primary Noise Source: 24 vehicles passed microphone traveling along eastern access road to medical facilities during measurement. Traffic ambiance from Iris Avenue.

Secondary Noise Sources: Traffic ambiance from other roads. Occasional overhead air traffic. Hospital parking lot ambiance. Bird song. Leaf rustle from 3mph breeze.

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/2/2023		

Noise Measurement
Field Data

PHOTOS:

STNM5 looking NW from curb of eastern access road across hospital parking lot, towards hospital building 27300 Iris Avenue, Moreno Valley.

STNM5 looking S up eastern hospital access road towards Iris Avenue intersection (~130').

Summary				
File Name on Meter	LxT_Data.205.s			
File Name on PC	LxT_0003099-20230302 151824-LxT_Data.205.ldbin			
Serial Number	3099			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	Ian Edward Gallagher			
Location	STNM5 33°53'45.25"N 117°11'6.29"W			
Job Description	15 minute noise measurement (1 x 15 minutes)			
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.			
Measurement				
Start	2023-03-02 15:18:24			
Stop	2023-03-02 15:33:24			
Duration	00:15:00.0			
Run Time	00:15:00.0			
Pause	00:00:00.0			
Pre-Calibration	2023-03-02 15:18:05			
Post-Calibration	None			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamplifier	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Normal			
OBA Bandwidth	1/1 and 1/3			
OBA Frequency Weighting	C Weighting			
OBA Max Spectrum	At LMax			
Overload	122.5 dB			
Results				
L_{Aeq}	59.5			
LAE	89.0			
EA	89.07672 µPa²h			
EA8	2.850455 mPa²h			
EA40	14.25227 mPa²h			
$L_{Apeak\ (max)}$	2023-03-02 15:18:55	94.0 dB		
L_{ASmax}	2023-03-02 15:29:02	74.1 dB		
L_{ASmin}	2023-03-02 15:24:59	50.0 dB		
			Statistics	
L_{Ceq}	71.8 dB		**LA2.00**	67.4 dB
L_{Aeq}	59.5 dB		**LA8.00**	62.5 dB
L_{Ceq} - L_{Aeq}	12.3 dB		**LA25.00**	59.5 dB
L_{AIeq}	62.3 dB		**LA50.00**	57.3 dB
L_{Aeq}	59.5 dB		**LA66.60**	56.0 dB
L_{AIeq} - L_{Aeq}	2.8 dB		**LA90.00**	52.8 dB
Overload Count	0			

Measurement Report

Report Summary

Meter's File Name	LxT_Data.205.s	Computer's File Name	LxT_0003099-20230302 151824-LxT_Data.205.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM5 33°53'45.25"N 117°11'6.29"W
Job Description	15 minute noise measurement (1 x 15 minutes)		
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.		
Start Time	2023-03-02 15:18:24	Duration	0:15:00.0
End Time	2023-03-02 15:33:24	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	59.5 dB		
LAE	89.0 dB	SEA	--- dB
EA	89.1 µPa²h	LAFTM5	64.2 dB
EA8	2.9 mPa²h		
EA40	14.3 mPa²h		
LA_{peak}	94.0 dB	2023-03-02 15:18:55	
LAS_{max}	74.1 dB	2023-03-02 15:29:02	
LAS_{min}	50.0 dB	2023-03-02 15:24:59	
LA_{eq}	59.5 dB		
LC_{eq}	71.8 dB	LC_{eq} - LA_{eq}	12.3 dB
LAI_{eq}	62.3 dB	LAI_{eq} - LA_{eq}	2.8 dB

Exceedances	Count	Duration
LAS > 65.0 dB	13	0:00:48.6
LAS > 85.0 dB	0	0:00:00.0
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

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

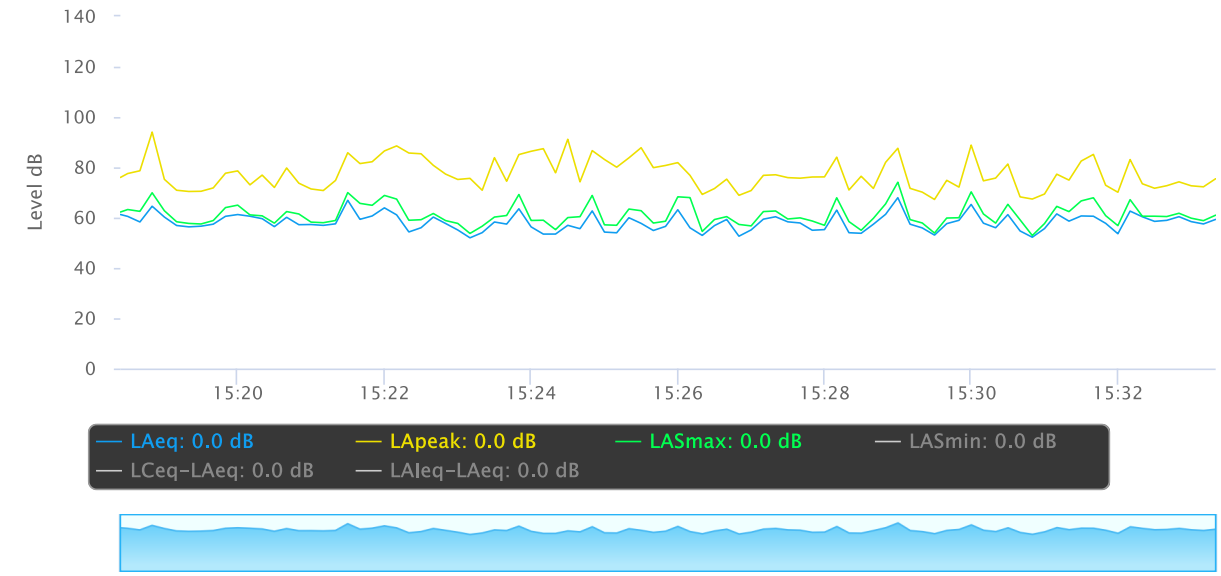
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	59.5 dB		71.8 dB		--- dB	
$L_{S(max)}$	74.1 dB	2023-03-02 15:29:02	--- dB		--- dB	
$L_{S(min)}$	50.0 dB	2023-03-02 15:24:59	--- dB		--- dB	
$L_{Peak(max)}$	94.0 dB	2023-03-02 15:18:55	--- dB		--- dB	

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

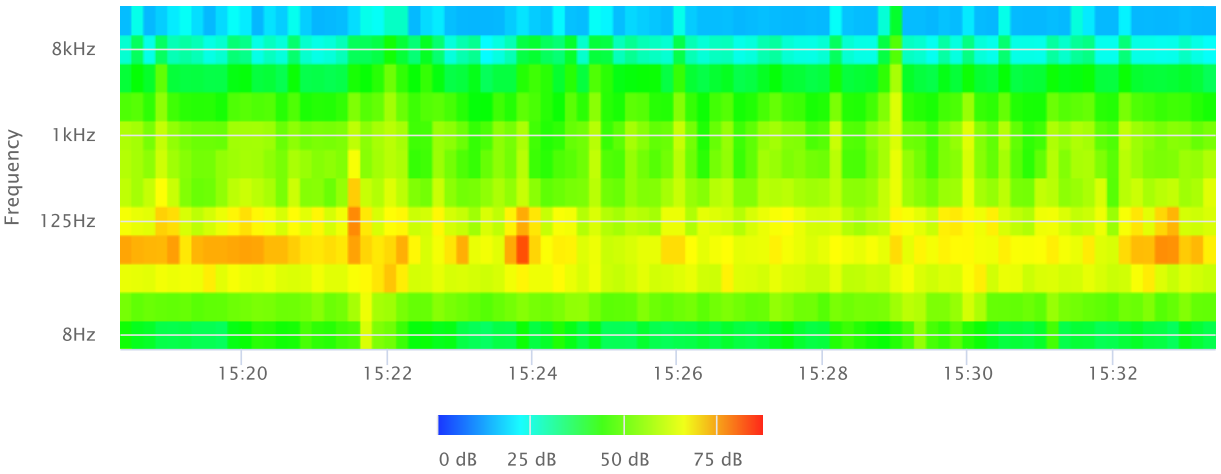
Statistics

LAS 2.0	67.4 dB
LAS 8.0	62.5 dB
LAS 25.0	59.5 dB
LAS 50.0	57.3 dB
LAS 66.6	56.0 dB
LAS 90.0	52.8 dB

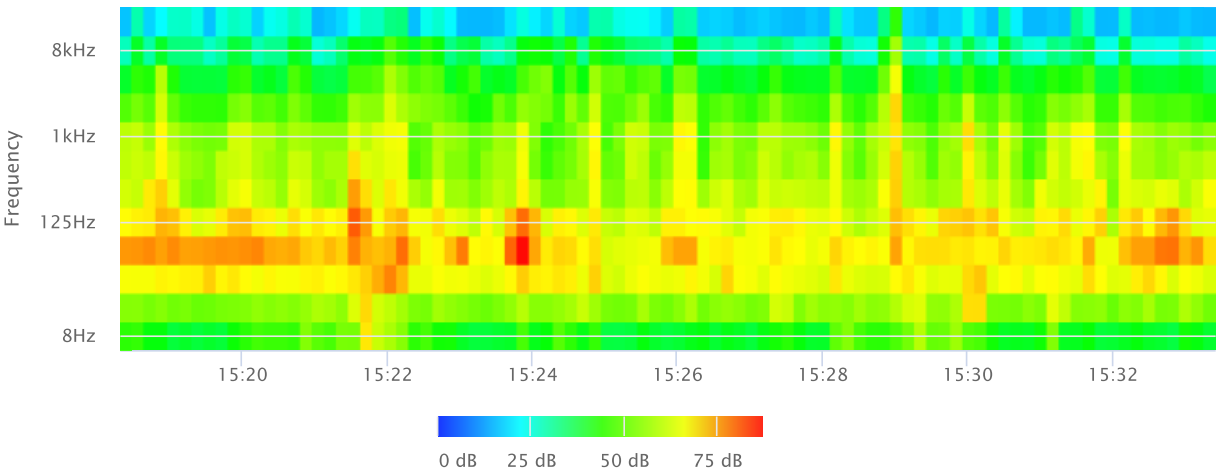
Time History



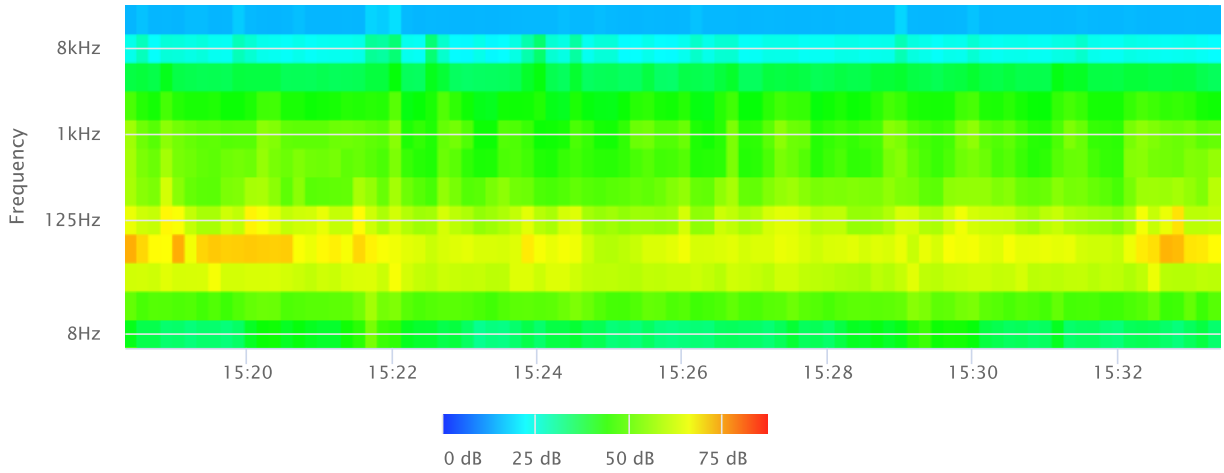
OBA 1/1 Leq



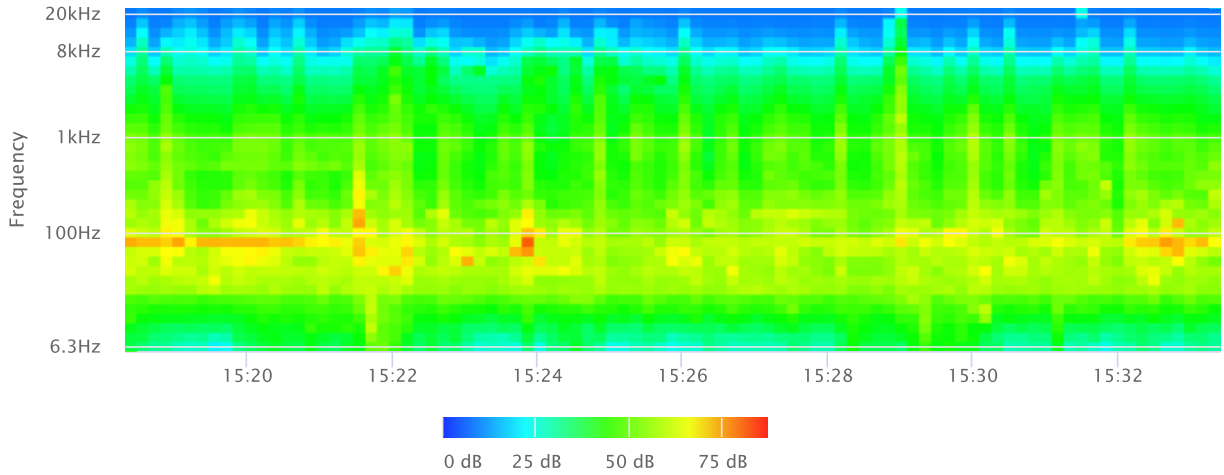
OBA 1/1 Lmax



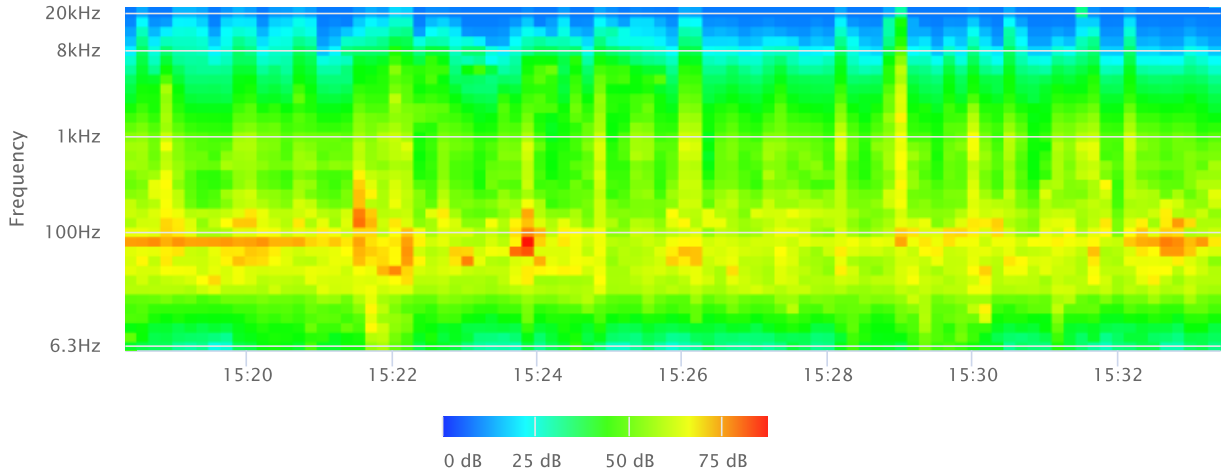
OBA 1/1 Lmin



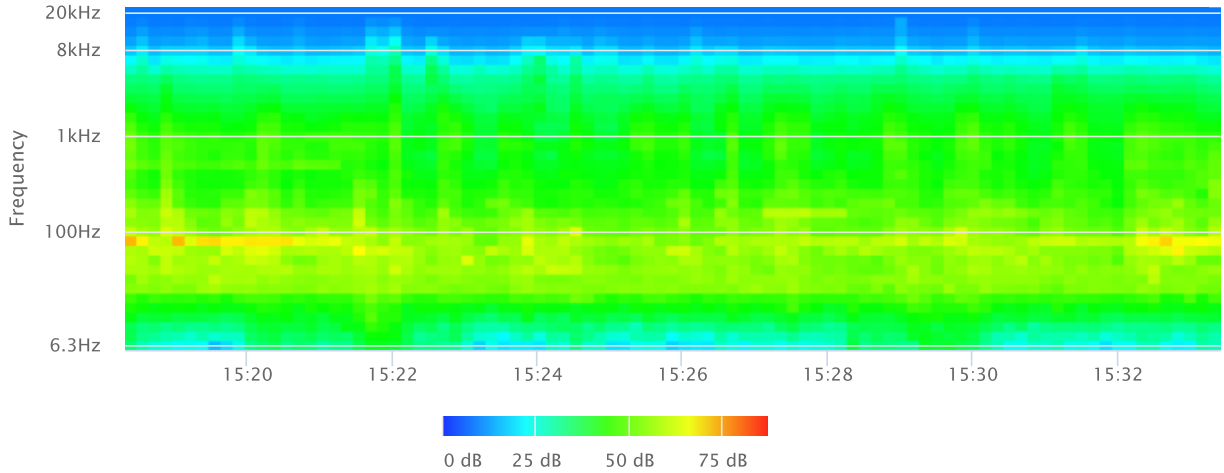
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
15:20
15:22
15:24
15:26
15:28
15:30
15:32
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond Food Mart, Oliver Street & Iris Avenue, Moreno Valley **Date:** March 2-3, 2023

Project #: 19606

Noise Measurement #: LTNM1 Run Time: 24 hours (24 x 1 hours) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: Oliver Street & Iris Avenue, Moreno Valley, CA 92555. (NW corner of intersection)

Site Description (Type of Existing Land Use and any other notable features): Measurement Site: NW corner of Oliver St & Iris Ave intersection (SE corner of project site) Adjacent: Oliver St (running N-S) just E of LTNM; Iris Ave (running E-W) intersecting with Oliver St ~50' SE; & vacant project site to W & N of LTNM1. Residential uses further east and south.

Weather: Mostly clear skies. Sunset/rise: 5:46 PM/6:16AM **Settings:** SLOW FAST

Temperature: 35-59 deg F **Wind:** 0-5 mph **Humidity:** 39-80% **Terrain:** Flat

Start Time: 6:00 PM **End Time:** 6:00 PM **Run Time:**

Leq: 62.9 dB

Lmax 93.8 dB

L2 70.5 dB

L8 66.6 dB

L25 61.9 dB

L50 56.5 dB

Primary Noise Source: Traffic noise from vehicles passing through Oliver St & Iris Ave intersection. Road work on intersection 2-3AM, crosswalk yellow paint being scraped off asphalt.

Secondary Noise Sources: Traffic ambiance from vehicles on other roads. Occasional Overhead air traffic. Bird song. Leaf rustle from breeze. Some residential ambiance, occasional pedestrian..

NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	3/2/2023		

Noise Measurement
Field Data

PHOTOS:

LTNM1 looking SE towards Oliver Street & Iris Avenue intersection (~50').

LTNM1 looking W across project site (parallel to Iris Ave). Hospital building 27300 Iris Ave, Moreno Valley on right of image (~880'). Microphone top, right corner of sign.

Summary	
File Name on Meter	LxT_Data.206.s
File Name on PC	LxT_0003099-20230302 180000-LxT_Data.206.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	LTNM1 33°53'44.26"N 117°10'59.18"W
Job Description	24 hour noise measurement (24 x 1 hours)
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.

Measurement	
Start	2023-03-02 18:00:00
Stop	2023-03-03 18:00:00
Duration	24:00:00.0
Run Time	24:00:00.0
Pause	00:00:00.0
Pre-Calibration	2023-03-02 17:27:45
Post-Calibration	None

Overall Settings	
RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	A Weighting
OBA Max Spectrum	Bin Max
Overload	122.5 dB

Results				
LA_{eq}	62.9			
LAE	112.2			
EA	18.562	mPa^2h		
EA8	6.187	mPa^2h		
EA40	30.937	mPa^2h		
$LA_{peak\ (max)}$	2023-03-03 14:29:32	113.6	dB	
LAS_{max}	2023-03-02 23:17:54	93.8	dB	
LAS_{min}	2023-03-03 01:43:40	35.6	dB	

			Statistics	
LC_{eq}	71.0	dB	**LA2.00**	70.5 dB
LA_{eq}	62.9	dB	**LA8.00**	66.6 dB
LC_{eq} - LA_{eq}	8.2	dB	**LA25.00**	61.9 dB
LAI_{eq}	64.6	dB	**LA50.00**	56.5 dB
LA_{eq}	62.9	dB	**LA90.00**	44.3 dB
LAI_{eq} - LA_{eq}	1.8	dB	**LA99.00**	38.9 dB
Overload Count	0			

Record #	Date	Time	Run Duration	Run Time	Pause	LAeq	LASmin	LASmin Time	LASmax	LASmax Time	LAS2.00	LAS8.00	LAS25.00	LAS50.00	LAS90.00	LAS99.00
1	2023-03-02	18:00:00	01:00:00.0	01:00:00.0	00:00:00.0	65.4	48.4	18:49:39	89.7	18:19:56	71.8	69.2	65.5	60.7	53.8	50.5
2	2023-03-02	19:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.2	43.5	19:58:06	85.4	19:32:59	70.4	67.1	63.4	59.0	51.8	47.4
3	2023-03-02	20:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.9	43.4	20:59:59	81.2	20:33:39	68.2	64.9	60.6	56.1	49.3	45.2
4	2023-03-02	21:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.6	41.3	21:56:16	84.3	21:31:36	68.0	64.2	59.8	54.3	45.9	42.9
5	2023-03-02	22:00:00	01:00:00.0	01:00:00.0	00:00:00.0	58.8	39.7	22:33:51	80.3	22:50:58	66.5	63.1	58.4	53.1	43.3	40.4
6	2023-03-02	23:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.0	38.0	23:24:54	93.8	23:17:54	67.0	62.8	56.5	49.3	40.9	38.9
7	2023-03-03	00:00:00	01:00:00.0	01:00:00.0	00:00:00.0	56.4	37.5	00:11:36	83.4	00:16:51	65.0	59.6	51.6	44.9	39.8	38.4
8	2023-03-03	01:00:00	01:00:00.0	01:00:00.0	00:00:00.0	53.7	35.6	01:43:40	76.5	01:56:51	63.7	57.2	49.6	44.2	38.6	36.7
9	2023-03-03	02:00:00	01:00:00.0	01:00:00.0	00:00:00.0	67.0	38.3	02:47:23	80.2	02:03:02	74.9	72.0	68.3	60.8	40.5	38.7
10	2023-03-03	03:00:00	01:00:00.0	01:00:00.0	00:00:00.0	56.3	37.5	03:01:04	75.3	03:34:12	65.9	60.9	53.0	45.4	39.2	37.9
11	2023-03-03	04:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.6	39.5	04:05:22	81.8	04:43:52	67.9	64.3	58.4	51.8	43.5	41.0
12	2023-03-03	05:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.4	40.9	05:12:56	76.8	05:55:13	69.3	66.5	62.0	56.3	46.5	41.9
13	2023-03-03	06:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.1	45.2	06:04:24	79.5	06:30:07	70.6	67.8	63.8	58.7	50.3	46.5
14	2023-03-03	07:00:00	01:00:00.0	01:00:00.0	00:00:00.0	64.4	48.3	07:04:22	86.0	07:01:10	71.6	68.4	64.9	60.4	54.2	50.2
15	2023-03-03	08:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.1	43.7	08:48:52	77.7	08:06:42	70.4	67.2	63.8	59.8	52.5	47.0
16	2023-03-03	09:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.7	41.6	09:06:53	83.6	09:08:55	68.9	65.8	62.0	57.0	49.3	44.5
17	2023-03-03	10:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.6	40.8	10:35:36	91.3	10:47:35	68.4	64.7	60.7	56.5	48.2	43.6
18	2023-03-03	11:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.7	41.2	11:43:10	79.3	11:30:40	69.2	65.8	61.8	57.5	49.8	45.4
19	2023-03-03	12:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.9	40.9	12:40:32	80.5	12:29:48	68.1	65.3	61.6	56.8	48.9	44.0
20	2023-03-03	13:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.0	42.3	13:19:02	75.3	13:42:53	68.6	65.7	61.9	56.9	49.3	45.2
21	2023-03-03	14:00:00	01:00:00.0	01:00:00.0	00:00:00.0	65.5	39.3	14:32:33	92.2	14:29:33	70.2	66.7	63.4	59.2	51.1	44.5
22	2023-03-03	15:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.4	42.9	15:43:04	84.1	15:32:55	71.0	67.1	63.7	58.8	51.8	47.5
23	2023-03-03	16:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.7	43.8	16:32:40	83.8	16:07:10	70.3	67.1	63.8	59.1	51.7	46.6
24	2023-03-03	17:00:00	01:00:00.0	01:00:00.0	00:00:00.0	66.7	45.2	17:48:16	89.3	17:35:26	74.7	68.1	63.7	59.5	52.9	48.4

Measurement Report

Report Summary

Meter's File Name	LxT_Data.206.s	Computer's File Name	LxT_0003099-20230302 180000-LxT_Data.206.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	LTNM1 33°53'44.26"N 117°10'59.18"W
Job Description	24 hour noise measurement (24 x 1 hours)		
Note	Ganddini Project 19606 Beyond Food Mart, Oliver St & Iris Ave, Moreno Valley.		
Start Time	2023-03-02 18:00:00	Duration	24:00:00.0
End Time	2023-03-03 18:00:00	Run Time	24:00:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	62.9 dB		
LAE	112.2 dB	SEA	--- dB
EA	18.6 mPa²h	LAFTM5	67.4 dB
EA8	6.2 mPa²h		
EA40	30.9 mPa²h		
LA_{peak}	113.6 dB	2023-03-03 14:29:32	
LAS_{max}	93.8 dB	2023-03-02 23:17:54	
LAS_{min}	35.6 dB	2023-03-03 01:43:40	
LA_{eq}	62.9 dB		
LC_{eq}	71.0 dB	LC_{eq} - LA_{eq}	8.2 dB
LAI_{eq}	64.6 dB	LAI_{eq} - LA_{eq}	1.8 dB

Exceedances	Count	Duration
LAS > 65.0 dB	1747	3:58:03.8
LAS > 85.0 dB	10	0:00:34.8
LApeak > 135.0 dB	0	0:00:00.0
LApeak > 137.0 dB	0	0:00:00.0
LApeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	--- dB	--- dB	0.0 dB

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

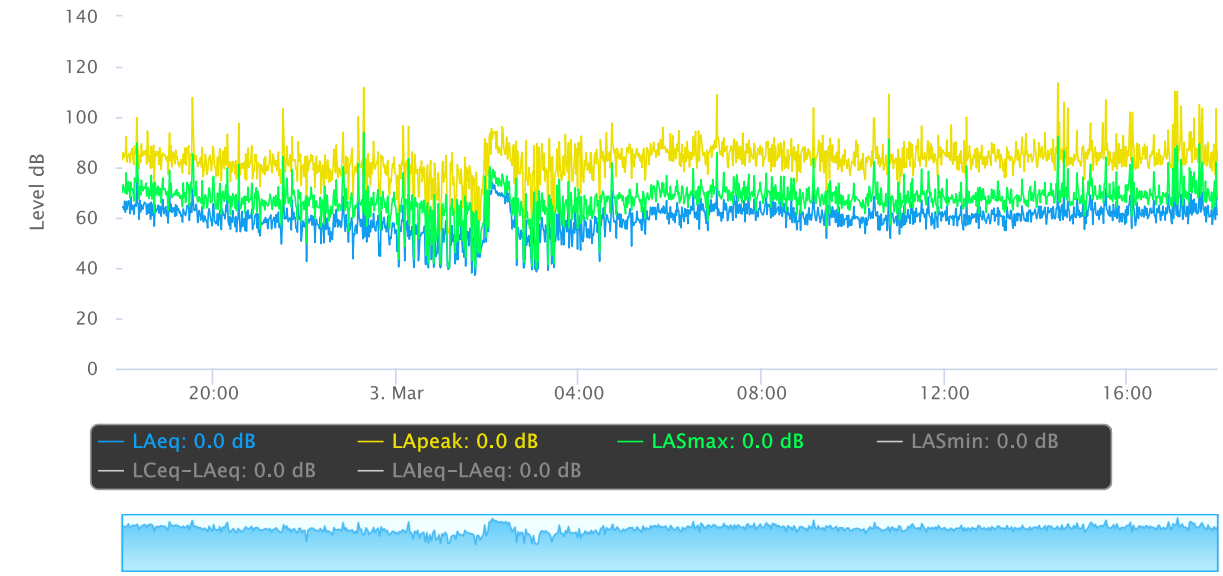
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	62.9 dB		71.0 dB		--- dB	
$L_{S(max)}$	93.8 dB	2023-03-02 23:17:54	--- dB		--- dB	
$L_{S(min)}$	35.6 dB	2023-03-03 01:43:40	--- dB		--- dB	
$L_{Peak(max)}$	113.6 dB	2023-03-03 14:29:32	--- dB		--- dB	

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

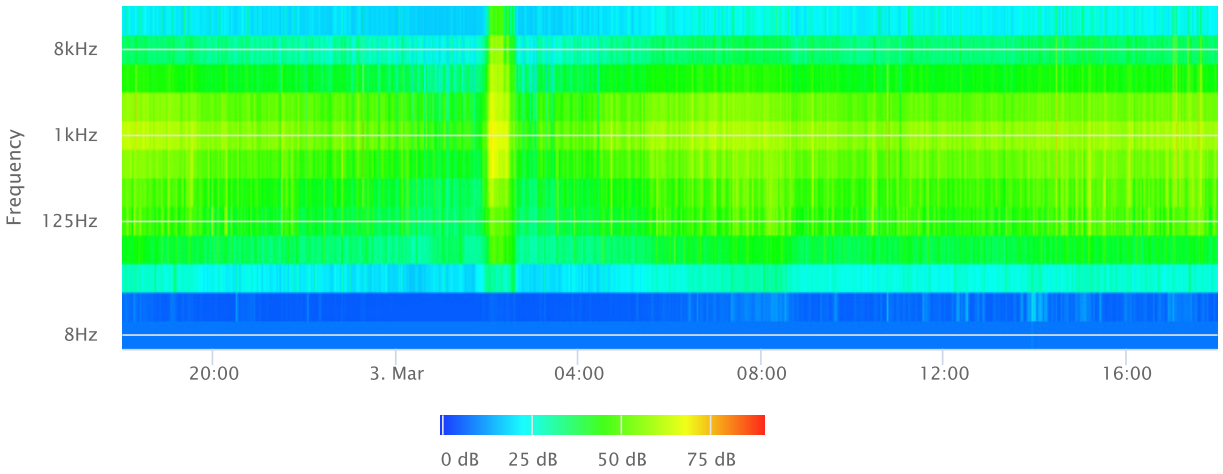
Statistics

LAS 2.0	70.5 dB
LAS 8.0	66.6 dB
LAS 25.0	61.9 dB
LAS 50.0	56.5 dB
LAS 90.0	44.3 dB
LAS 99.0	38.9 dB

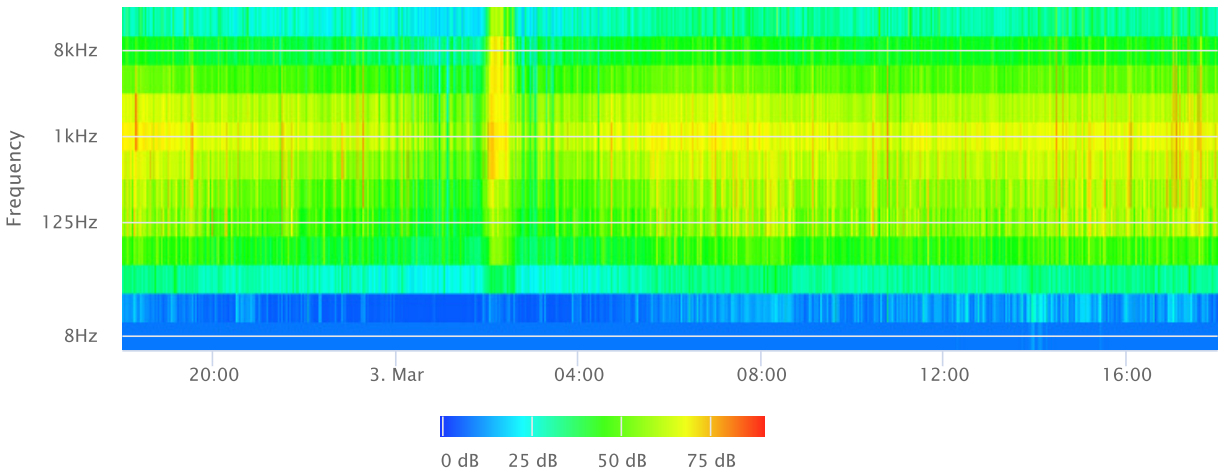
Time History



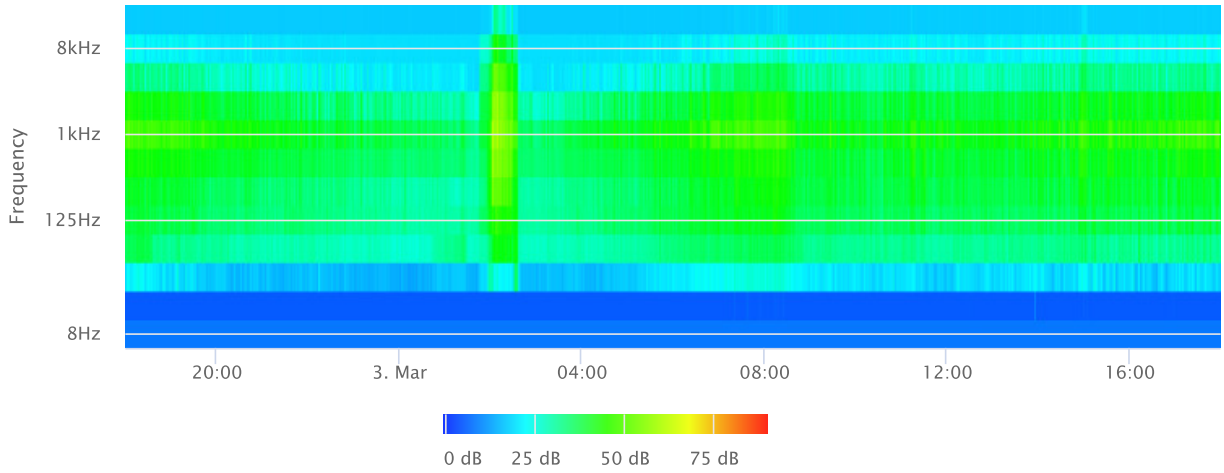
OBA 1/1 Leq



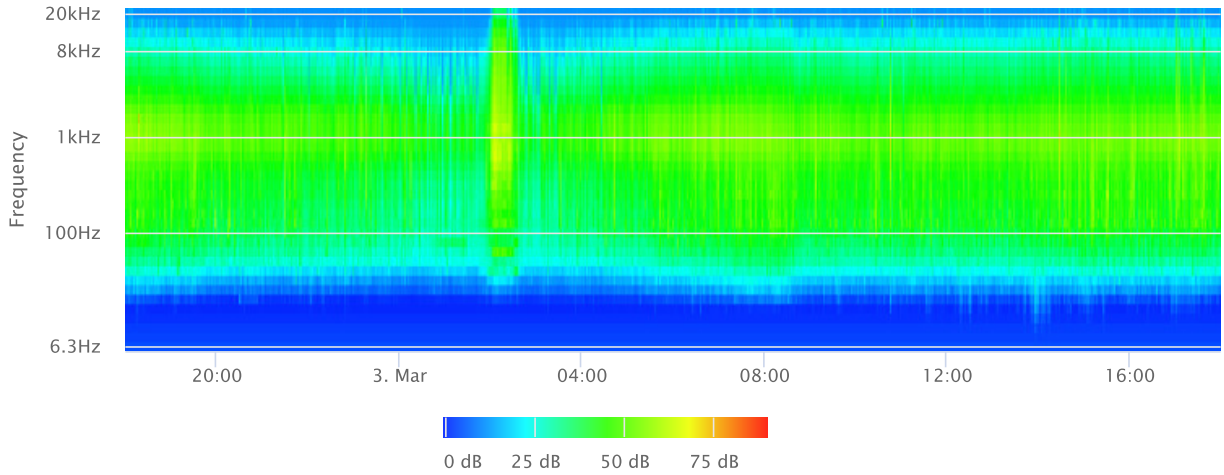
OBA 1/1 Lmax



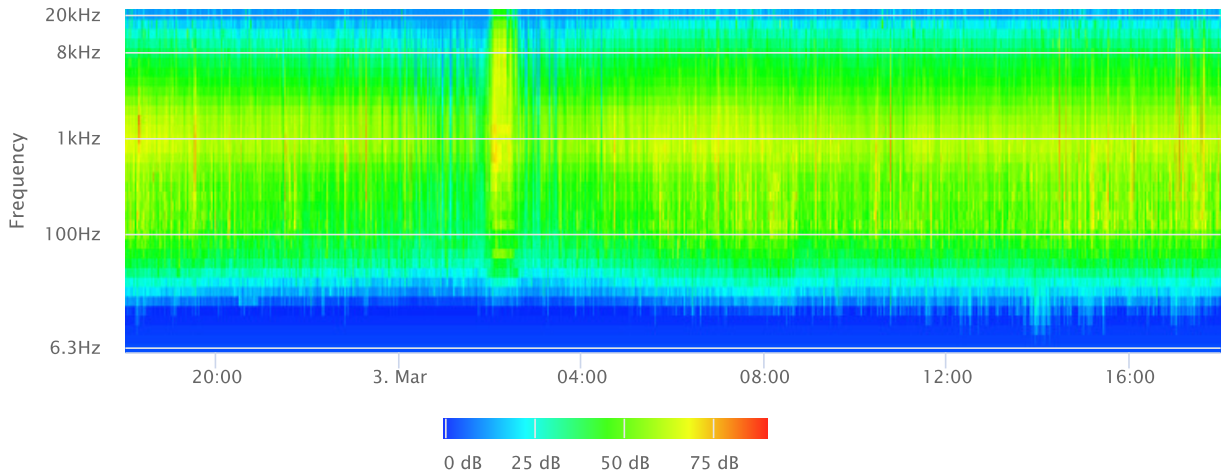
OBA 1/1 Lmin



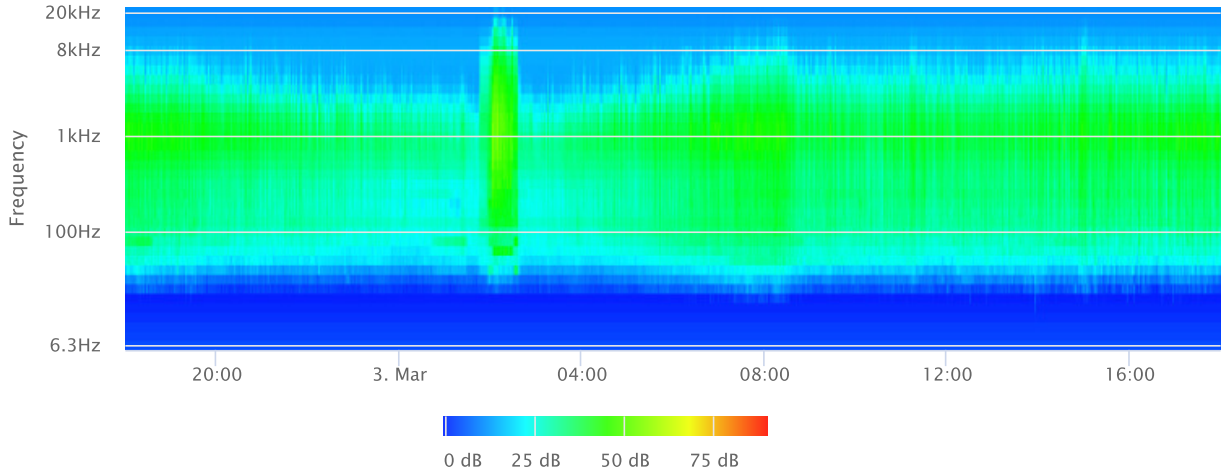
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
20:00
3. Mar
04:00
08:00
12:00
16:00
0 dB
25 dB
50 dB
75 dB

APPENDIX D

CONSTRUCTION NOISE MODEL WORKSHEETS

Receptor - School to Northeast (Landmark Middle School, 15261 Legendary Drive, Moreno Valley)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	1137	20	0.20	-27.1	-7.0	62.9	55.9
Excavators	3	81	1137	40	1.20	-27.1	0.8	53.9	54.7
Rubber Tired Dozers	1	82	1137	40	0.40	-27.1	-4.0	54.9	50.9
								Log Sum	59.0
Site Preparation									
Graders	1	85	1137	40	0.40	-27.1	-4.0	57.9	53.9
Tractors/Loaders/Backhoes	1	84	1137	40	0.40	-27.1	-4.0	56.9	52.9
Rubber Tired Dozers	1	82	1137	40	0.40	-27.1	-4.0	54.9	50.9
								Log Sum	57.5
Grading									
Rubber Tired Dozers	1	82	1137	40	0.40	-27.1	-4.0	54.9	50.9
Tractors/Loaders/Backhoes	2	84	1137	40	0.80	-27.1	-1.0	56.9	55.9
Graders	1	85	1137	40	0.40	-27.1	-4.0	57.9	53.9
								Log Sum	58.8
Building Construction									
Cranes	1	81	1137	16	0.16	-27.1	-8.0	53.9	45.9
Forklifts[2]	1	48	1137	40	0.40	-27.1	-4.0	20.9	16.9
Generator Sets	1	81	1137	50	0.50	-27.1	-3.0	53.9	50.9
Welders	3	74	1137	40	1.20	-27.1	0.8	46.9	47.7
Tractors/Loaders/Backhoes	1	84	1137	40	0.40	-27.1	-4.0	56.9	52.9
								Log Sum	56.2
Paving									
Cement and Mortar Mixers	1	79	1137	40	0.40	-27.1	-4.0	51.9	47.9
Pavers	1	77	1137	50	0.50	-27.1	-3.0	49.9	46.9
Paving Equipment	1	77	1137	50	0.50	-27.1	-3.0	49.9	46.9
Tractors/Loaders/Backhoes	1	84	1137	40	0.40	-27.1	-4.0	56.9	52.9
Rollers	1	80	1137	20	0.20	-27.1	-7.0	52.9	45.9
								Log Sum	55.9
Architectural Coating									
Air Compressors	1	78	1137	40	0.40	-27.1	-4.0	50.9	46.9
								Log Sum	46.9

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor -Residential to East (15445 Legendary Drive, Moreno Valley)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	201	20	0.20	-12.1	-7.0	77.9	70.9
Excavators	3	81	201	40	1.20	-12.1	0.8	68.9	69.7
Rubber Tired Dozers	1	82	201	40	0.40	-12.1	-4.0	69.9	65.9
								Log Sum	74.1
Site Preparation									
Graders	1	85	201	40	0.40	-12.1	-4.0	72.9	68.9
Tractors/Loaders/Backhoes	1	84	201	40	0.40	-12.1	-4.0	71.9	67.9
Rubber Tired Dozers	1	82	201	40	0.40	-12.1	-4.0	69.9	65.9
								Log Sum	72.5
Grading									
Rubber Tired Dozers	1	82	201	40	0.40	-12.1	-4.0	69.9	65.9
Tractors/Loaders/Backhoes	2	84	201	40	0.80	-12.1	-1.0	71.9	70.9
Graders	1	85	201	40	0.40	-12.1	-4.0	72.9	68.9
								Log Sum	73.8
Building Construction									
Cranes	1	81	201	16	0.16	-12.1	-8.0	68.9	61.0
Forklifts[2]	1	48	201	40	0.40	-12.1	-4.0	35.9	31.9
Generator Sets	1	81	201	50	0.50	-12.1	-3.0	68.9	65.9
Welders	3	74	201	40	1.20	-12.1	0.8	61.9	62.7
Tractors/Loaders/Backhoes	1	84	201	40	0.40	-12.1	-4.0	71.9	67.9
								Log Sum	71.2
Paving									
Cement and Mortar Mixers	1	79	201	40	0.40	-12.1	-4.0	66.9	62.9
Pavers	1	77	201	50	0.50	-12.1	-3.0	64.9	61.9
Paving Equipment	1	77	201	50	0.50	-12.1	-3.0	64.9	61.9
Tractors/Loaders/Backhoes	1	84	201	40	0.40	-12.1	-4.0	71.9	67.9
Rollers	1	80	201	20	0.20	-12.1	-7.0	67.9	60.9
								Log Sum	71.0
Architectural Coating									
Air Compressors	1	78	201	40	0.40	-12.1	-4.0	65.9	61.9
								Log Sum	61.9

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor -Residential to South (15555 Oliver Street, Moreno Valley)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	295	20	0.20	-15.4	-7.0	74.6	67.6
Excavators	3	81	295	40	1.20	-15.4	0.8	65.6	66.4
Rubber Tired Dozers	1	82	295	40	0.40	-15.4	-4.0	66.6	62.6
								Log Sum	70.8
Site Preparation									
Graders	1	85	295	40	0.40	-15.4	-4.0	69.6	65.6
Tractors/Loaders/Backhoes	1	84	295	40	0.40	-15.4	-4.0	68.6	64.6
Rubber Tired Dozers	1	82	295	40	0.40	-15.4	-4.0	66.6	62.6
								Log Sum	69.2
Grading									
Rubber Tired Dozers	1	82	295	40	0.40	-15.4	-4.0	66.6	62.6
Tractors/Loaders/Backhoes	2	84	295	40	0.80	-15.4	-1.0	68.6	67.6
Graders	1	85	295	40	0.40	-15.4	-4.0	69.6	65.6
								Log Sum	70.5
Building Construction									
Cranes	1	81	295	16	0.16	-15.4	-8.0	65.6	57.6
Forklifts[2]	1	48	295	40	0.40	-15.4	-4.0	32.6	28.6
Generator Sets	1	81	295	50	0.50	-15.4	-3.0	65.6	62.6
Welders	3	74	295	40	1.20	-15.4	0.8	58.6	59.4
Tractors/Loaders/Backhoes	1	84	295	40	0.40	-15.4	-4.0	68.6	64.6
								Log Sum	67.9
Paving									
Cement and Mortar Mixers	1	79	295	40	0.40	-15.4	-4.0	63.6	59.6
Pavers	1	77	295	50	0.50	-15.4	-3.0	61.6	58.6
Paving Equipment	1	77	295	50	0.50	-15.4	-3.0	61.6	58.6
Tractors/Loaders/Backhoes	1	84	295	40	0.40	-15.4	-4.0	68.6	64.6
Rollers	1	80	295	20	0.20	-15.4	-7.0	64.6	57.6
								Log Sum	67.6
Architectural Coating									
Air Compressors	1	78	295	40	0.40	-15.4	-4.0	62.6	58.6
								Log Sum	58.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Hospital to West (Kaiser Permanente Moreno Valley Medical Center, 27300 Iris Avenue, Moreno Valley)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	525	20	0.20	-20.4	-7.0	69.6	62.6
Excavators	3	81	525	40	1.20	-20.4	0.8	60.6	61.4
Rubber Tired Dozers	1	82	525	40	0.40	-20.4	-4.0	61.6	57.6
								Log Sum	65.8
Site Preparation									
Graders	1	85	525	40	0.40	-20.4	-4.0	64.6	60.6
Tractors/Loaders/Backhoes	1	84	525	40	0.40	-20.4	-4.0	63.6	59.6
Rubber Tired Dozers	1	82	525	40	0.40	-20.4	-4.0	61.6	57.6
								Log Sum	64.2
Grading									
Rubber Tired Dozers	1	82	525	40	0.40	-20.4	-4.0	61.6	57.6
Tractors/Loaders/Backhoes	2	84	525	40	0.80	-20.4	-1.0	63.6	62.6
Graders	1	85	525	40	0.40	-20.4	-4.0	64.6	60.6
								Log Sum	65.5
Building Construction									
Cranes	1	81	525	16	0.16	-20.4	-8.0	60.6	52.6
Forklifts[2]	1	48	525	40	0.40	-20.4	-4.0	27.6	23.6
Generator Sets	1	81	525	50	0.50	-20.4	-3.0	60.6	57.6
Welders	3	74	525	40	1.20	-20.4	0.8	53.6	54.4
Tractors/Loaders/Backhoes	1	84	525	40	0.40	-20.4	-4.0	63.6	59.6
								Log Sum	62.9
Paving									
Cement and Mortar Mixers	1	79	525	40	0.40	-20.4	-4.0	58.6	54.6
Pavers	1	77	525	50	0.50	-20.4	-3.0	56.6	53.6
Paving Equipment	1	77	525	50	0.50	-20.4	-3.0	56.6	53.6
Tractors/Loaders/Backhoes	1	84	525	40	0.40	-20.4	-4.0	63.6	59.6
Rollers	1	80	525	20	0.20	-20.4	-7.0	59.6	52.6
								Log Sum	62.6
Architectural Coating									
Air Compressors	1	78	525	40	0.40	-20.4	-4.0	57.6	53.6
								Log Sum	53.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Medical Office to Northwest (Fresenius Kidney Care Moreno Valley, 27420 Iris Avenue, Moreno Valley)

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA
Demolition									
Concrete/Industrial Saws	1	90	469	20	0.20	-19.4	-7.0	70.6	63.6
Excavators	3	81	469	40	1.20	-19.4	0.8	61.6	62.3
Rubber Tired Dozers	1	82	469	40	0.40	-19.4	-4.0	62.6	58.6
								Log Sum	66.7
Site Preparation									
Graders	1	85	469	40	0.40	-19.4	-4.0	65.6	61.6
Tractors/Loaders/Backhoes	1	84	469	40	0.40	-19.4	-4.0	64.6	60.6
Rubber Tired Dozers	1	82	469	40	0.40	-19.4	-4.0	62.6	58.6
								Log Sum	65.2
Grading									
Rubber Tired Dozers	1	82	469	40	0.40	-19.4	-4.0	62.6	58.6
Tractors/Loaders/Backhoes	2	84	469	40	0.80	-19.4	-1.0	64.6	63.6
Graders	1	85	469	40	0.40	-19.4	-4.0	65.6	61.6
								Log Sum	66.5
Building Construction									
Cranes	1	81	469	16	0.16	-19.4	-8.0	61.6	53.6
Forklifts[2]	1	48	469	40	0.40	-19.4	-4.0	28.6	24.6
Generator Sets	1	81	469	50	0.50	-19.4	-3.0	61.6	58.5
Welders	3	74	469	40	1.20	-19.4	0.8	54.6	55.3
Tractors/Loaders/Backhoes	1	84	469	40	0.40	-19.4	-4.0	64.6	60.6
								Log Sum	63.9
Paving									
Cement and Mortar Mixers	1	79	469	40	0.40	-19.4	-4.0	59.6	55.6
Pavers	1	77	469	50	0.50	-19.4	-3.0	57.6	54.5
Paving Equipment	1	77	469	50	0.50	-19.4	-3.0	57.6	54.5
Tractors/Loaders/Backhoes	1	84	469	40	0.40	-19.4	-4.0	64.6	60.6
Rollers	1	80	469	20	0.20	-19.4	-7.0	60.6	53.6
								Log Sum	63.6
Architectural Coating									
Air Compressors	1	78	469	40	0.40	-19.4	-4.0	58.6	54.6
								Log Sum	54.6

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

APPENDIX E

SOUNDPLAN WORKSHEETS

Noise emissions of industry sources

Source na	Referer	Level	Frequency spectrum [dB(A)]																											Correctio		
		dB(A	31 Hz	40 Hz	50 Hz	63 Hz	80 Hz	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz	1 kHz	1.3 kHz	1.6 kHz	2 kHz	2.5 kHz	3.2 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz	12.5 kHz	16 kHz	Cwa dB	CI dB	CT dB
Fueling A	Lw/unit	Da 63.0	-	-	-	-	-	-	-	-	-	-	-	-	63.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drying Sy	Lw/unit	Da 109.	-	-	-	80.	84.	87.	90.	92.	100	103	105	103	105	106	102	102	103	101	101	101	95.	95.	94.	87.	86.	-	-	-	-	-	-
Vacuum	Lw/unit	Da 84.8	-	-	-	67.	71.	64.	67.	70.	65.7	68.0	70.0	67.6	69.2	70.5	75.9	76.7	77.3	82.0	82.2	82.3	74.	74.	74.	76.	75.	-	-	-	-	-	-
	Lw/unit	Da 84.8	-	-	-	67.	71.	64.	67.	70.	65.7	68.0	70.0	67.6	69.2	70.5	75.9	76.7	77.3	82.0	82.2	82.3	74.	74.	74.	76.	75.	-	-	-	-	-	-
	Lw/unit	Da 84.8	-	-	-	67.	71.	64.	67.	70.	65.7	68.0	70.0	67.6	69.2	70.5	75.9	76.7	77.3	82.0	82.2	82.3	74.	74.	74.	76.	75.	-	-	-	-	-	-
HVAC	Lw/unit	Da 78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.2	64.5	66.5	56.9	58.5	59.8	68.7	69.5	70.1	71.3	71.5	71.6	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
	Lw/unit	Da 78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.2	64.5	66.5	56.9	58.5	59.8	68.7	69.5	70.1	71.3	71.5	71.6	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
	Lw/unit	Da 78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.2	64.5	66.5	56.9	58.5	59.8	68.7	69.5	70.1	71.3	71.5	71.6	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
	Lw/unit	Da 78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.2	64.5	66.5	56.9	58.5	59.8	68.7	69.5	70.1	71.3	71.5	71.6	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
	Lw/unit	Da 78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.2	64.5	66.5	56.9	58.5	59.8	68.7	69.5	70.1	71.3	71.5	71.6	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-
Que	Lw/unit	Da 78.7	42.	47.	42.	46.	50.	56.	59.	62.	62.2	64.5	66.5	56.9	58.5	59.8	68.7	69.5	70.1	71.3	71.5	71.6	70.	70.	70.	73.	72.	71.	74.	72.	-	-	-

Noise emissions of parking lot traffic

Name	Parking lot type	Size	Movements per hour			Road surface	Separated method	Lw,ref
			Day	Evening	Night			dB(A)
1	Visitors and staff	12 Parking bays	6.100	0.000	0.000	Asphaltic driving lanes	no	75.0
2	Visitors and staff	12 Parking bays	6.100	0.000	0.000	Asphaltic driving lanes	no	75.0
3	Visitors and staff	11 Parking bays	6.100	0.000	0.000	Asphaltic driving lanes	no	74.2
4	Visitors and staff	8 Parking bays	6.100	0.000	0.000	Asphaltic driving lanes	no	72.0

Receiver list

No.	Receiver name	Building side	Floor	Limit Day dB(A)	Level Day dB(A)	Conflict Day dB
1	1	-	EG	-	49.9	-
2	2	-	EG	-	56.9	-
3	3	-	EG	-	59.2	-
4	4	-	EG	-	57.7	-
5	5	-	EG	-	44.9	-
6	6	-	EG	-	40.8	-

APPENDIX F

FHWA TRAFFIC NOISE MODEL WORKSHEETS

Existing Traffic Noise

1	:Id
Grande Vista Drive	:Road
South of Iris Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	1700
Speed	25
Distance	33
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	104.26	1.27	0.50	77.05	0.23	0.23	19.30	1.70	0.66
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	15.90	-3.23	-7.33	14.58	-10.74	-10.73	8.57	-1.98	-6.08
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	52.07	44.59	46.64	50.76	37.08	43.25	44.74	45.84	47.89
	DAY LEQ	53.73		EVENING LEQ	51.62		NIGHT LEQ	51.13	

F	CNEL	58.21	
	DAY LEQ	53.73	

Day hour	89.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

1	:Id	Vehicle Distribution (Light Truck Mix)				ADT	2130
Grande Vista Drive	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	25
South of Iris Avenue	:Segment	Automobiles	75.56	13.96	10.49	97.40	Distance	33
		Medium Trucks	48.91	2.17	48.91	1.84	Left Angle	-90
		Heavy Trucks	47.30	5.41	47.30	0.74	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	130.63	1.60	0.62	96.54	0.28	0.28	24.18	2.13	0.83
Speed in MPH	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	59.44	71.09	77.24	59.44	71.09	77.24	59.44	71.09	77.24
ADJUSTMENTS									
Flow	16.88	-2.25	-6.35	15.56	-9.76	-9.75	9.55	-1.00	-5.10
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	53.05	45.57	47.62	51.74	38.06	44.23	45.72	46.82	48.87
	DAY LEQ	54.71		EVENING LEQ	52.60		NIGHT LEQ	52.11	

CNEL	59.19	Day hour	89.00
DAY LEQ	54.71	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

2	:Id
Nason Street	:Road
North of Iris Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	10400
Speed	45
Distance	55
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	602.31	12.48	20.80	447.14	2.08	3.47	110.88	17.33	28.89
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	20.96	4.12	6.34	19.67	-3.66	-1.44	13.61	5.55	7.77
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.82	56.26	63.00	63.53	48.48	55.22	57.47	57.69	64.43
	DAY LEQ	67.37		EVENING LEQ	64.24		NIGHT LEQ	65.93	

CNEL	72.66
DAY LEQ	67.37

Day hour	90.00
Absorptive?	no
Use hour?	no
GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

2	:Id
Nason Street	:Road
North of Iris Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	10620
Speed	45
Distance	55
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	615.05	12.74	21.24	456.60	2.12	3.54	113.23	17.70	29.50
Speed in MPH	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	69.34	77.62	82.14	69.34	77.62	82.14	69.34	77.62	82.14
ADJUSTMENTS									
Flow	21.05	4.22	6.43	19.76	-3.57	-1.35	13.70	5.64	7.86
Distance	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48	-0.48
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	64.91	56.35	63.09	63.62	48.57	55.31	57.56	57.78	64.52
	DAY LEQ	67.46		EVENING LEQ	64.33		NIGHT LEQ	66.02	

CNEL	72.75
DAY LEQ	67.46

Day hour	90.00
Absorptive?	no
Use hour?	no
GRADE dB	1.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

3	:Id
Oliver Street	:Road
North of John F Kennedy Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	3000
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	173.74	3.60	6.00	128.98	0.60	1.00	31.99	5.00	8.33
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.65	-0.18	2.03	15.36	-7.97	-5.75	9.30	1.24	3.46
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	57.25	50.13	57.57	55.95	42.35	49.78	49.90	51.56	58.99
	DAY LEQ	60.81		EVENING LEQ	57.04		NIGHT LEQ	60.14	

CNEL	66.70
DAY LEQ	60.81

Day hour	91.00
Absorptive?	no
Use hour?	no
GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

3	:Id
Oliver Street	:Road
North of John F Kennedy Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	3220
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	186.48	3.86	6.44	138.44	0.64	1.07	34.33	5.37	8.94
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.96	0.12	2.34	15.67	-7.66	-5.44	9.61	1.55	3.77
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	57.55	50.44	57.87	56.26	42.66	50.09	50.21	51.86	59.30
	DAY LEQ	61.12		EVENING LEQ	57.35		NIGHT LEQ	60.45	

CNEL	67.01
DAY LEQ	61.12

Day hour	91.00
Absorptive?	no
Use hour?	no
GRADE dB	2.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

4	:Id
Oliver Street	:Road
John F Kennedy Drive to Filaree Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2100
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	121.62	2.52	4.20	90.29	0.42	0.70	22.39	3.50	5.83
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	15.10	-1.73	0.49	13.81	-9.51	-7.30	7.75	-0.31	1.91
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.70	48.58	56.02	54.40	40.80	48.24	48.35	50.01	57.44
	DAY LEQ	59.26		EVENING LEQ	55.49		NIGHT LEQ	58.60	

CNEL	65.15
DAY LEQ	59.26

Day hour	92.00
Absorptive?	no
Use hour?	no
GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

4	:Id
Oliver Street	:Road
John F Kennedy Drive to Filaree Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2750
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	159.26	3.30	5.50	118.24	0.55	0.92	29.32	4.58	7.64
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.27	-0.56	1.66	14.98	-8.34	-6.12	8.93	0.87	3.08
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.87	49.75	57.19	55.58	41.97	49.41	49.52	51.18	58.62
	DAY LEQ	60.43		EVENING LEQ	56.67		NIGHT LEQ	59.77	

CNEL	66.32
DAY LEQ	60.43

Day hour	92.00
Absorptive?	no
Use hour?	no
GRADE dB	3.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

5	:Id
Oliver Street	:Road
Filaree Avenue to Shellie Way	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2000
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	115.83	2.40	4.00	85.99	0.40	0.67	21.32	3.33	5.56
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	14.89	-1.94	0.27	13.60	-9.73	-7.51	7.54	-0.52	1.70
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.49	48.37	55.81	54.19	40.59	48.02	48.14	49.80	57.23
	DAY LEQ	59.05		EVENING LEQ	55.28		NIGHT LEQ	58.38	

CNEL	64.94
DAY LEQ	59.05

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

5	:Id
Oliver Street	:Road
Filaree Avenue to Shellie Way	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2650
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	153.47	3.18	5.30	113.94	0.53	0.88	28.25	4.42	7.36
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.11	-0.72	1.50	14.82	-8.50	-6.29	8.76	0.70	2.92
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.71	49.59	57.03	55.42	41.81	49.25	49.36	51.02	58.45
	DAY LEQ	60.27		EVENING LEQ	56.50		NIGHT LEQ	59.61	

CNEL	66.16
DAY LEQ	60.27

Day hour	93.00
Absorptive?	no
Use hour?	no
GRADE dB	4.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

6	:Id
Oliver Street	:Road
Shellie Way to Iris Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2300
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	133.20	2.76	4.60	98.89	0.46	0.77	24.52	3.83	6.39
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	15.50	-1.34	0.88	14.20	-9.12	-6.90	8.15	0.09	2.31
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.09	48.98	56.41	54.80	41.19	48.63	48.74	50.40	57.84
	DAY LEQ	59.65		EVENING LEQ	55.89		NIGHT LEQ	58.99	

CNEL	65.55
DAY LEQ	59.65

Day hour	94.00
Absorptive?	no
Use hour?	no
GRADE dB	5.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

6	:Id	
Oliver Street	:Road	
Shellie Way to Iris Avenue	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2950
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	170.85	3.54	5.90	126.83	0.59	0.98	31.45	4.92	8.19
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.58	-0.26	1.96	15.29	-8.04	-5.82	9.23	1.17	3.39
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	57.17	50.06	57.49	55.88	42.28	49.71	49.82	51.48	58.92
	DAY LEQ	60.74		EVENING LEQ	56.97		NIGHT LEQ	60.07	

CNEL	66.63
DAY LEQ	60.74

Day hour	94.00
Absorptive?	no
Use hour?	no
GRADE dB	5.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

7	:Id
Oliver Street	:Road
South of Iris Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	1800
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	104.25	2.16	3.60	77.39	0.36	0.60	19.19	3.00	5.00
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	14.43	-2.40	-0.18	13.14	-10.18	-7.97	7.08	-0.98	1.24
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.03	47.91	55.35	53.74	40.13	47.57	47.68	49.34	56.77
	DAY LEQ	58.59		EVENING LEQ	54.82		NIGHT LEQ	57.93	

CNEL	64.48
DAY LEQ	58.59

Day hour	95.00
Absorptive?	no
Use hour?	no
GRADE dB	6.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

7	:Id
Oliver Street	:Road
South of Iris Avenue	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2230
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	129.15	2.68	4.46	95.88	0.45	0.74	23.78	3.72	6.19
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	15.36	-1.47	0.75	14.07	-9.25	-7.03	8.01	-0.04	2.17
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.96	48.84	56.28	54.67	41.06	48.50	48.61	50.27	57.70
	DAY LEQ	59.52		EVENING LEQ	55.76		NIGHT LEQ	58.86	

CNEL	65.41
DAY LEQ	59.52

Day hour	95.00
Absorptive?	no
Use hour?	no
GRADE dB	6.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

8	:Id
Via Del Lago	:Road
South of Iris Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	1200
Speed	35
Distance	33
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	73.60	0.90	0.35	54.39	0.16	0.16	13.62	1.20	0.47
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	12.92	-6.20	-10.31	11.61	-13.71	-13.70	5.60	-4.95	-9.06
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	54.77	45.36	46.48	53.45	37.85	43.08	47.44	46.61	47.72
	DAY LEQ	55.78		EVENING LEQ	53.94		NIGHT LEQ	52.05	

CNEL	**59.49**
DAY LEQ	55.78

Day hour	96.00
Absorptive?	no
Use hour?	no
GRADE dB	7.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Plus Project Traffic Noise

8	:Id
Via Del Lago	:Road
South of Iris Avenue	:Segment

Vehicle Distribution (Light Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.56	13.96	10.49	97.40
Medium Trucks	48.91	2.17	48.91	1.84
Heavy Trucks	47.30	5.41	47.30	0.74

ADT	1420
Speed	35
Distance	33
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	87.09	1.06	0.41	64.36	0.19	0.19	16.12	1.42	0.55
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	13.65	-5.47	-9.57	12.34	-12.98	-12.97	6.33	-4.22	-8.33
Distance	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.50	46.09	47.21	54.18	38.58	43.81	48.17	47.34	48.46
	DAY LEQ	56.51		EVENING LEQ	54.67		NIGHT LEQ	52.79	

CNEL	60.22
DAY LEQ	56.51

Day hour	96.00
Absorptive?	no
Use hour?	no
GRADE dB	7.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside light truck mix.

Existing Traffic Noise

9	:Id
John F Kennedy Way	:Road
East of Oliver Street	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2000
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	115.83	2.40	4.00	85.99	0.40	0.67	21.32	3.33	5.56
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	14.89	-1.94	0.27	13.60	-9.73	-7.51	7.54	-0.52	1.70
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.49	48.37	55.81	54.19	40.59	48.02	48.14	49.80	57.23
	DAY LEQ	59.05		EVENING LEQ	55.28		NIGHT LEQ	58.38	

CNEL	64.94
DAY LEQ	59.05

Day hour	97.00
Absorptive?	no
Use hour?	no
GRADE dB	8.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

9	:Id
John F Kennedy Way	:Road
East of Oliver Street	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2440
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	141.31	2.93	4.88	104.91	0.49	0.81	26.01	4.07	6.78
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	15.76	-1.08	1.14	14.46	-8.86	-6.64	8.41	0.35	2.56
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.35	49.23	56.67	55.06	41.45	48.89	49.00	50.66	58.10
	DAY LEQ	59.91		EVENING LEQ	56.15		NIGHT LEQ	59.25	

F	CNEL	65.80	
	DAY LEQ	59.91	

Day hour	97.00
Absorptive?	no
Use hour?	no
GRADE dB	8.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

10	:Id
John F Kennedy Way	:Road
West of Moreno Beach Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	9200
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	532.81	11.04	18.40	395.55	1.84	3.07	98.09	15.33	25.56
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.52	4.68	6.90	20.23	-3.10	-0.88	14.17	6.11	8.33
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.11	55.00	62.43	60.82	47.21	54.65	54.76	56.42	63.86
	DAY LEQ	65.68		EVENING LEQ	61.91		NIGHT LEQ	65.01	

CNEL	71.57
DAY LEQ	65.68

Day hour	98.00
Absorptive?	no
Use hour?	no
GRADE dB	9.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

10	:Id
John F Kennedy Way	:Road
West of Moreno Beach Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	9640
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	558.29	11.57	19.28	414.47	1.93	3.21	102.78	16.07	26.78
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	21.72	4.89	7.10	20.43	-2.90	-0.68	14.37	6.31	8.53
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	62.32	55.20	62.64	61.02	47.42	54.85	54.97	56.63	64.06
	DAY LEQ	65.88		EVENING LEQ	62.11		NIGHT LEQ	65.21	

CNEL	71.77
DAY LEQ	65.88

Day hour	98.00
Absorptive?	no
Use hour?	no
GRADE dB	9.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

11	:Id
John F Kennedy Way	:Road
East of Moreno Beach Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	1800
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	104.25	2.16	3.60	77.39	0.36	0.60	19.19	3.00	5.00
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	14.43	-2.40	-0.18	13.14	-10.18	-7.97	7.08	-0.98	1.24
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.03	47.91	55.35	53.74	40.13	47.57	47.68	49.34	56.77
	DAY LEQ	58.59		EVENING LEQ	54.82		NIGHT LEQ	57.93	

CNEL	64.48
DAY LEQ	58.59

Day hour	99.00
Absorptive?	no
Use hour?	no
GRADE dB	10.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

11	:Id
John F Kennedy Way	:Road
East of Moreno Beach Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	2670
Speed	35
Distance	44
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	154.63	3.20	5.34	114.80	0.53	0.89	28.47	4.45	7.42
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	16.15	-0.69	1.53	14.85	-8.47	-6.25	8.80	0.74	2.96
Distance	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.74	49.62	57.06	55.45	41.84	49.28	49.39	51.05	58.49
	DAY LEQ	60.30		EVENING LEQ	56.54		NIGHT LEQ	59.64	

CNEL	66.20
DAY LEQ	60.30

Day hour	99.00
Absorptive?	no
Use hour?	no
GRADE dB	10.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

12	:Id	
Iris Avenue	:Road	
West of Grande Vista Drive	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	24700
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1430.48	29.64	49.40	1061.97	4.94	8.23	263.35	41.17	68.61
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	24.26	7.42	9.64	22.97	-0.36	1.86	16.91	8.85	11.07
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	69.04	59.88	66.32	67.74	52.09	58.54	61.69	61.30	67.75
	DAY LEQ	71.23		EVENING LEQ	68.34		NIGHT LEQ	69.43	

CNEL	76.26
DAY LEQ	71.23

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

12	:Id	
Iris Avenue	:Road	
West of Grande Vista Drive	:Segment	

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	25570
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1480.86	30.68	51.14	1099.37	5.11	8.52	272.62	42.62	71.03
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	24.41	7.57	9.79	23.12	-0.21	2.01	17.06	9.00	11.22
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	69.19	60.03	66.47	67.89	52.24	58.69	61.84	61.45	67.90
	DAY LEQ	71.38		EVENING LEQ	68.49		NIGHT LEQ	69.58	

CNEL	76.41
DAY LEQ	71.38

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

13	:Id
Iris Avenue	:Road
Grande Vista Drive to Nason Street	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	24100
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1395.73	28.92	48.20	1036.17	4.82	8.03	256.95	40.17	66.94
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	24.15	7.32	9.53	22.86	-0.47	1.75	16.80	8.74	10.96
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	68.93	59.77	66.21	67.64	51.99	58.43	61.58	61.20	67.64
	DAY LEQ	71.12		EVENING LEQ	68.23		NIGHT LEQ	69.33	

CNEL	76.15
DAY LEQ	71.12

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

13	:Id
Iris Avenue	:Road
Grande Vista Drive to Nason Street	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	25400
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1471.02	30.48	50.80	1092.06	5.08	8.47	270.81	42.33	70.56
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	24.38	7.54	9.76	23.09	-0.24	1.98	17.03	8.97	11.19
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	69.16	60.00	66.44	67.87	52.22	58.66	61.81	61.42	67.87
	DAY LEQ	71.35		EVENING LEQ	68.46		NIGHT LEQ	69.56	

CNEL	76.38
DAY LEQ	71.35

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

14	:Id
Iris Avenue	:Road
Nason Street to Kaiser Hospital	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	19500
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1129.32	23.40	39.00	838.40	3.90	6.50	207.90	32.50	54.17
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	23.23	6.40	8.62	21.94	-1.38	0.83	15.88	7.82	10.04
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	68.01	58.85	65.29	66.72	51.07	57.51	60.66	60.28	66.72
	DAY LEQ	70.20		EVENING LEQ	67.31		NIGHT LEQ	68.41	

CNEL	75.23
DAY LEQ	70.20

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

14	:Id	Vehicle Distribution (Heavy Truck Mix)				ADT	21020
Iris Avenue	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	50
Nason Street to Kaiser Hospital	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	67
		Medium Trucks	48.00	2.00	50.00	3.00	Left Angle	-90
		Heavy Trucks	48.00	2.00	50.00	5.00	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1217.35	25.22	42.04	903.75	4.20	7.01	224.11	35.03	58.39
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	23.56	6.72	8.94	22.26	-1.06	1.16	16.21	8.15	10.37
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	68.34	59.18	65.62	67.04	51.39	57.84	60.99	60.60	67.05
	DAY LEQ	70.53		EVENING LEQ	67.64		NIGHT LEQ	68.73	

CNEL	75.56	Day hour	0.00
DAY LEQ	70.53	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

15	:Id
Iris Avenue	:Road
Kaiser Hospital to Medical Offices	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	16600
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	961.37	19.92	33.20	713.71	3.32	5.53	176.99	27.67	46.11
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	22.53	5.70	7.92	21.24	-2.08	0.13	15.18	7.12	9.34
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.31	58.15	64.59	66.02	50.37	56.81	59.96	59.58	66.02
	DAY LEQ	69.50		EVENING LEQ	66.62		NIGHT LEQ	67.71	

CNEL	74.53
DAY LEQ	69.50

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

15	:Id
Iris Avenue	:Road
Kaiser Hospital to Medical Offices	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	18120
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1049.40	21.74	36.24	779.06	3.62	6.04	193.19	30.20	50.33
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	22.91	6.08	8.30	21.62	-1.70	0.51	15.56	7.50	9.72
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.69	58.53	64.98	66.40	50.75	57.19	60.34	59.96	66.40
	DAY LEQ	69.88		EVENING LEQ	67.00		NIGHT LEQ	68.09	

CNEL	74.91
DAY LEQ	69.88

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

16	:Id
Iris Avenue	:Road
Medical Offices to Oliver Street	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	16000
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	926.62	19.20	32.00	687.91	3.20	5.33	170.59	26.67	44.44
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	22.37	5.54	7.76	21.08	-2.24	-0.03	15.02	6.96	9.18
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.15	57.99	64.44	65.86	50.21	56.65	59.80	59.42	65.86
	DAY LEQ	69.34		EVENING LEQ	66.46		NIGHT LEQ	67.55	

CNEL	74.37
DAY LEQ	69.34

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

16	:Id	Vehicle Distribution (Heavy Truck Mix)				ADT	17520
Iris Avenue	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	50
Medical Offices to Oliver Street	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	67
		Medium Trucks	48.00	2.00	50.00	3.00	Left Angle	-90
		Heavy Trucks	48.00	2.00	50.00	5.00	Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	1014.65	21.02	35.04	753.27	3.50	5.84	186.79	29.20	48.67
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	22.77	5.93	8.15	21.47	-1.85	0.37	15.42	7.36	9.58
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.55	58.38	64.83	66.25	50.60	57.05	60.20	59.81	66.26
	DAY LEQ	69.74		EVENING LEQ	66.85		NIGHT LEQ	67.94	

CNEL	74.77	Day hour	0.00
DAY LEQ	69.74	Absorptive?	no
		Use hour?	no
		GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

17	:Id
Iris Avenue	:Road
Oliver Street to Via Del Lago	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	14000
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	810.80	16.80	28.00	601.93	2.80	4.67	149.26	23.33	38.89
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	21.79	4.96	7.18	20.50	-2.82	-0.61	14.44	6.38	8.60
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.57	57.41	63.86	65.28	49.63	56.07	59.22	58.84	65.28
	DAY LEQ	68.76		EVENING LEQ	65.88		NIGHT LEQ	66.97	

CNEL	73.79
DAY LEQ	68.76

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

17	:Id
Iris Avenue	:Road
Oliver Street to Via Del Lago	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	15740
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	911.57	18.89	31.48	676.74	3.15	5.25	167.82	26.23	43.72
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	22.30	5.47	7.68	21.01	-2.32	-0.10	14.95	6.89	9.11
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.08	57.92	64.36	65.79	50.14	56.58	59.73	59.35	65.79
	DAY LEQ	69.27		EVENING LEQ	66.38		NIGHT LEQ	67.48	

CNEL	74.30
DAY LEQ	69.27

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

18 :Id

Moreno Beach Drive :Road

Vial Del Lago to John F Kennedy Drive :Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	13900
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	805.00	16.68	27.80	597.63	2.78	4.63	148.20	23.17	38.61
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	21.76	4.93	7.14	20.47	-2.86	-0.64	14.41	6.35	8.57
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.54	57.38	63.82	65.25	49.60	56.04	59.19	58.81	65.25
	DAY LEQ	68.73		EVENING LEQ	65.84		NIGHT LEQ	66.94	

CNEL	73.76
DAY LEQ	68.73

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

18	:Id
Moreno Beach Drive	:Road
Vial Del Lago to John F Kennedy Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	15420
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	893.03	18.50	30.84	662.98	3.08	5.14	164.40	25.70	42.83
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	22.21	5.38	7.60	20.92	-2.40	-0.19	14.86	6.80	9.02
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.99	57.83	64.27	65.70	50.05	56.49	59.64	59.26	65.70
	DAY LEQ	69.18		EVENING LEQ	66.30		NIGHT LEQ	67.39	

CNEL	74.21
DAY LEQ	69.18

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Traffic Noise

19	:Id
Moreno Beach Drive	:Road
North of John F Kennedy Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	14400
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	833.96	17.28	28.80	619.12	2.88	4.80	153.53	24.00	40.00
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	21.92	5.08	7.30	20.62	-2.70	-0.48	14.57	6.51	8.73
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	66.69	57.53	63.98	65.40	49.75	56.20	59.35	58.96	65.40
	DAY LEQ	68.89		EVENING LEQ	66.00		NIGHT LEQ	67.09	

CNEL	73.92
DAY LEQ	68.89

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

Existing Plus Project Traffic Noise

19	:Id
Moreno Beach Drive	:Road
North of John F Kennedy Drive	:Segment

Vehicle Distribution (Heavy Truck Mix)				
Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	75.54	14.02	10.43	92.00
Medium Trucks	48.00	2.00	50.00	3.00
Heavy Trucks	48.00	2.00	50.00	5.00

ADT	15490
Speed	50
Distance	67
Left Angle	-90
Right Angle	90

	Daytime			Evening			Night		
Noise Parameters	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks	Autos	Medium Trucks	Heavy Trucks
INPUT PARAMETERS									
Vehicles per hour	897.09	18.59	30.98	665.99	3.10	5.16	165.15	25.82	43.03
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	22.23	5.40	7.62	20.94	-2.38	-0.17	14.88	6.82	9.04
Distance	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34	-1.34
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	67.01	57.85	64.29	65.72	50.07	56.51	59.66	59.28	65.72
	DAY LEQ	69.20		EVENING LEQ	66.31		NIGHT LEQ	67.41	

CNEL	74.23
DAY LEQ	69.20

Day hour	0.00
Absorptive?	no
Use hour?	no
GRADE dB	0.00

Notes:

(1) FHWA Traffic Noise Prediction Model FHWA-RD-77-108

(2) Vehicle percentages based on County of Riverside heavy truck mix.

APPENDIX G

GROUNDBORNE VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS

Project:	19606 Beyond Food Mart (Oliver and Iris)	Date:	5/9/23
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Residential to East		
Address:	15465 Legendary Drive, Moreno Valley		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type =	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	115.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from the Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020, pg 37.

RESULTS

PPV =	0.021	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19606 Beyond Food Mart (Oliver and Iris)	Date:	5/9/23
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Residential to East		
Address:	15465 Legendary Drive, Moreno Valley		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	115.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from the Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020, pg 37.

RESULTS

PPV =	0.009	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19606 Beyond Food Mart (Oliver and Iris)		Date: 5/9/23
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Residential to South		
Address:	15555 Oliver Street, Moreno Valley		
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	169.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from the Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020, pg 37.			
RESULTS			
PPV =	0.012	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19606 Beyond Food Mart (Oliver and Iris)	Date:	5/9/23
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Residential to South		
Address:	15555 Oliver Street, Moreno Valley		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	169.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from the Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020, pg 37.

RESULTS

PPV =	0.005	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19606 Beyond Food Mart (Oliver and Iris)	Date:	5/9/23
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Medical Office to Northwest		
Address:	Fresenius Kindey Care, 27420 Iris Avenue, Moreno Valley		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	360.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from the Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020, pg 37.

RESULTS

PPV =	0.004	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19606 Beyond Food Mart (Oliver and Iris)	Date:	5/9/23
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Medical Office to Northwest		
Address:	Fresenius Kindey Care, 27420 Iris Avenue, Moreno Valley		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	360.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from the Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020, pg 37.

v

PPV =	0.002	IN/SEC	OUTPUT IN BLUE

Construction Annoyance Vibration Calculations

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual (September 2018).

Eq. 7-3: $Lvdistance = Lvref - 30\log(D/25)$

Lvdistance = the rms velocity level adjsuted for distance, VdB
Lvref = the source reference vibration level at 25 feet, VdB
D = distance from the equipment to th receiver, ft.

Large Bulldozer:

Residential to East: $Lvdistance = 87 - 30 \log(115/25) = 67.12$ VdB

Residential to South: $Lvdistance = 87 - 30 \log(169/25) = 62.10$ VdB

Medical Office to Northwest: $Lvdistance = 87 - 30 \log(360/25) = 52.25$ VdB

Residential: Under Threshold Mitigation Distance: $87 - 30 \log(80/25) = 71.85$ VdB

Vibratory Roller:

Residential to East: $Lvdistance = 94 - 30 \log(115/25) = 74.12$ VdB

Residential to South: $Lvdistance = 94 - 30 \log(169/25) = 69.10$ VdB

Medical Office to Northwest: $Lvdistance = 94 - 30 \log(360/25) = 59.25$ VdB

Residential: Under Threshold Mitigation Distance: $94 - 30 \log(136/25) = 71.93$ VdB

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