BEYOND FOOD MART PALMDALE (25TH STREET & AVE R) NOISE IMPACT ANALYSIS

City of Palmdale
September 26, 2022
(Rev. December 21, 2023)

ganddini

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

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Project No. 19524

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EXECUTIVE SUMMARY

The purpose of this report is to provide an assessment of the noise impacts associated with development and operation of the proposed Beyond Food Mart Palmdale (25th Street & Ave R) 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 Palmdale.

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 analysis.

Project Location

The 5.69-acre project site is located at the northwest corner of 25th Street East and Avenue R in the City of Palmdale, California. The project site is currently vacant and zoned C-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 (i.e., 16-vehicle fueling positions) and an approximately 1,790 square foot automatic car wash tunnel. The proposed project also involves the construction of a raised median on 25th Street along the project frontage. Vehicular access is proposed to be provided by one driveway at Avenue R providing right turn in/out and left turn in access and one driveway at 25th Street providing right in/out only access.

Construction Impacts

On-Site Construction

Modeled unmitigated construction noise levels reached 76 dBA L_{eq} at the nearest multi-family residential property line to the north of the project site, up to 63 dBA L_{eq} at the nearest single-family residential property line to the northeast of the project site, up to 73 dBA L_{eq} at the nearest single-family residential property line to the east of the project site, up to 69 dBA L_{eq} at the nearest single-family residential property line to the southeast of the project site, up to 72 dBA L_{eq} at the nearest single-family residential property line to the south of the project site, up to 72 dBA L_{eq} at the nearest church property line to the south of the project site, up to 61 dBA L_{eq} at the nearest single-family residential property line to the southwest of the project site, and up to 68 dBA L_{eq} at the nearest school property line to the west of the project site.

Construction noise sources are regulated within Palmdale Municipal Code Section 8.28.030 which prohibits construction activities after 8:00 PM or before 6:30 AM, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park.

Project construction will not occur outside of the hours outlined as "exempt" in City of Palmdale Municipal Code Section 8.28.030 and therefore, will not result in or generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance.

Impacts would be less than significant, and no mitigation is required.

In addition to adherence to the City of Palmdale Municipal Code which limits the construction hours of operation, the project applicant will include the following Best Management Practices (BMPs) on project plans and in contract specifications to further reduce construction noise emanating from the proposed project:

Construction Noise - Best Management Practices

1. All construction 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 when not in use.

4. To the degree possible, equipment staging will be located in acres 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 PMC Section 8.28.030.

Off-Site Construction

Construction truck trips would occur throughout the construction period. Given the project site's proximity to the State Route 138 and State Route 14, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

According to the Federal Highway Administration (FHWA), the traffic volumes need to be doubled in order to increase noise levels by 3 dBA CNEL. The estimated existing average daily trips along Avenue R range between 12,100 to 14,300 average daily vehicle trips and along 25th Street range between 5,700 to 12,600 average daily vehicle trips.[1] Project construction is expected to generate up to approximately 78 vehicle trips per day (7.5 for worker trips and 70 for hauling trips). Therefore, the addition of project vendor/haul trucks and worker vehicles per day along off-site roadway segments would not be anticipated to result in a doubling of traffic volumes. Off-site project generated construction vehicle trips would result in a negligible noise level increase and would not result in a substantial increase in ambient noise levels. Impacts would be less than significant. No mitigation measures are required.

Project Operational Noise – Vehicle Trips

During operation, the proposed project is expected to generate approximately 4,656 new average daily trips (with pass-by reduction) with 171 trips during the AM peak-hour and 209 trips during the PM peak-hour. Modeled existing traffic noise level noise levels range between 68-76 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project traffic noise levels range between 68-76 dBA CNEL at the right-of-way of each modeled roadway segment. Project generated vehicle traffic is anticipated to increase existing noise levels between approximately 0.1 to 1.1 dBA CNEL. Therefore, a change in noise level would not be audible and would be considered less than significant. No mitigation is required. Project generated operational vehicle traffic will not result in substantial increases in ambient noise levels. This impact would be less than significant. No mitigation is required.

[1] The existing average daily traffic volumes were obtained from the Beyond Food Mart (25th Street & Ave R) Traffic Impact Analysis (Ganddini Group, 2022), see Table 7 for details.

Project Operational Noise – On-Site Operation

Noise sensitive land uses that may be affected by project operational noise include the existing residential dwelling units to the north, south and east, and Palmdale High School to the west. Modeled peak hour project operational noise is expected to range between 53 and 68 dBA CNEL at the residential land uses. This exceeds the City's Maximum Acceptable Noise Levels criteria (Table 3) of 65 dBA CNEL. With the addition of a 6-foot concrete wall along the northern project property line, Operational noise levels at residential land uses would all fall below the City's criteria of 65. Impacts would be less than significant with mitigation.

Operational noise levels at Palmdale High School, west of the project site would not exceed 54 dBA CNEL and therefore will not exceed 45 dBA CNEL at classrooms. Typical construction provides approximately 20 dB of exterior to interior noise reduction and classroom portables can be expected to provide at least 15 dB of exterior to interior noise levels as long as HVAC is provided, allowing a window closed condition.

Existing measured ambient noise levels at the sensitive receptor locations ranged between 52 and 68 dBA CNEL at nearby properties. Without mitigation, the project may increase ambient noise levels by up to 11.7 dBA CNEL at the northern property line shared with multiple family residential development. With mitigation, (see mitigation measure below) the increase in ambient noise levels would be less than 1 dB. This impact is less than significant with mitigation.

Operational Noise – Mitigation Measure

1. A concrete wall, six feet in height, shall be installed along the northern project boundary.

Groundborne Vibration Impacts

The nearest off-site structures, to the portion of the total project site where construction is to occur, include the multi-family residential dwelling units located as close as approximately 38 feet to the north of the project's northern property line, the single-family residential dwelling units located as close as approximately 115 feet to the east of the project's eastern property line and 106 feet to the south of the project's southern property line, and the school structures located as close as approximately 355 feet to the west (solar carports) and 389 feet to the northwest (buildings) of the project's western property line. Temporary vibration levels associated with project construction would not exceed the threshold at which there is a risk to "architectural" damage to older residential structures of a PPV of 0.3 in/sec or industrial/commercial buildings of a PPV of 0.5 in/sec. The project does not propose any non-construction related sources of ground-borne vibration. Temporary vibration levels associated with project construction would be less than significant. No mitigation is required.

Annoyance - Groundborne vibration becomes strongly perceptible to sensitive receptors at a level of 0.1 in/sec PPV. Therefore, project construction could cause annoyance to the residential uses to the north of the project site. However, potential annoyance would only occur when a vibratory roller, or other similar vibratory equipment, is utilized within 3 feet of the property line in proximity to the residential dwelling unit to the north. Therefore, annoyance will be short-term and will occur only during site grading and preparation which will be limited to daytime hours. Impacts are less than significant.

1. INTRODUCTION

This section describes the purpose of this noise impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed Beyond Food Mart Palmdale (25th Street & Ave R) 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 Palmdale.

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PROJECT DESCRIPTION

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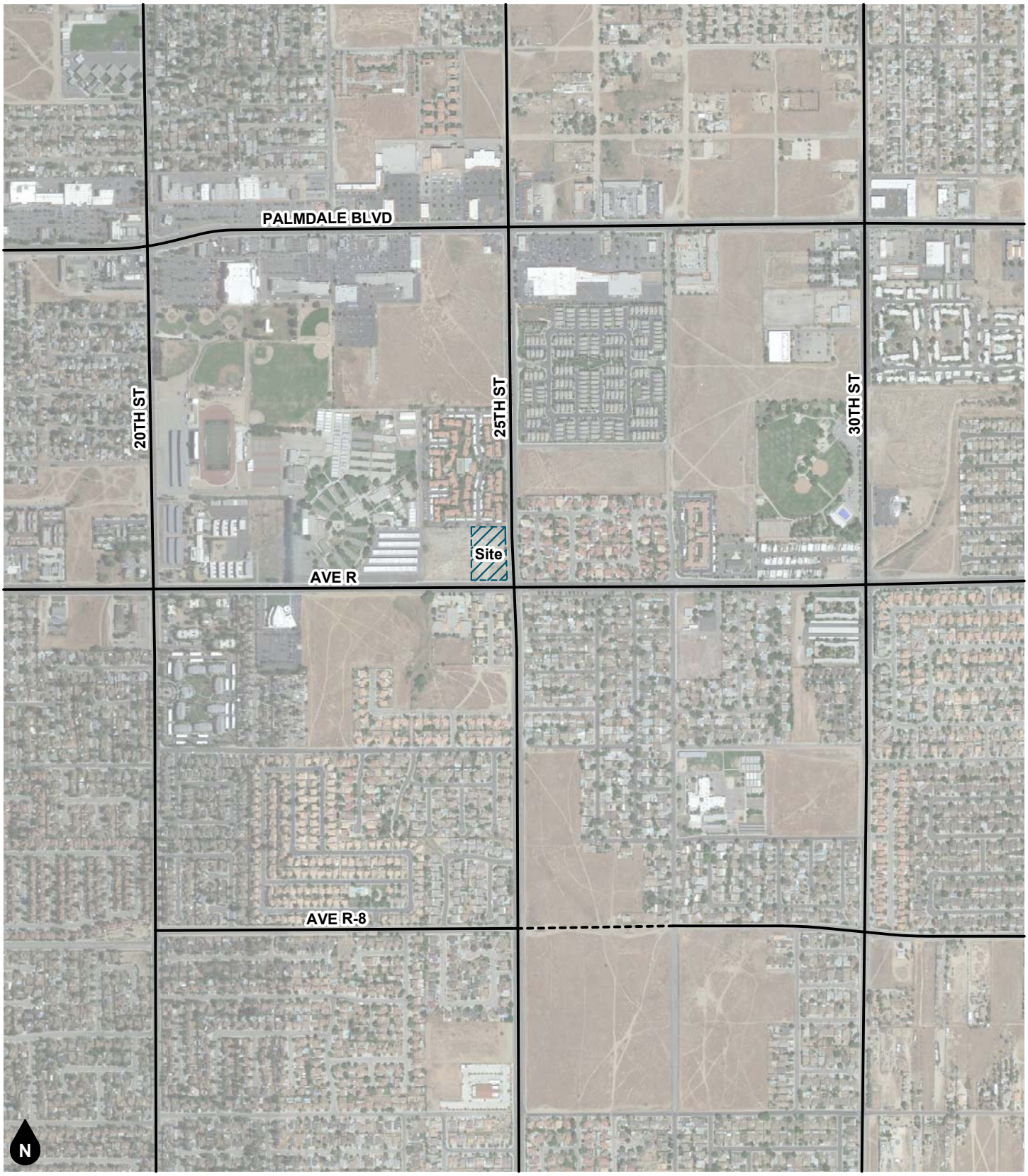


Figure 1
Project Location Map

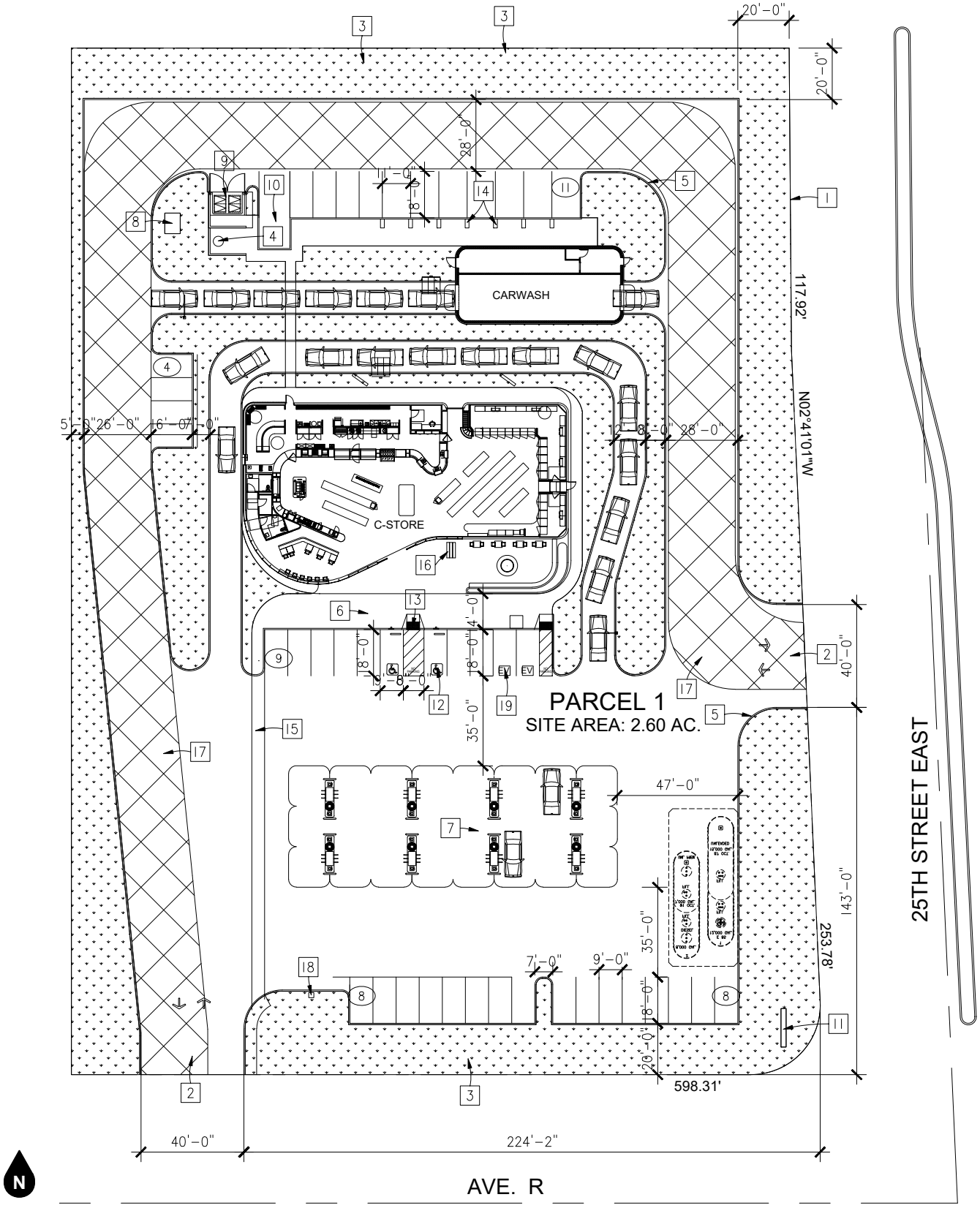


Figure 2
Site Plan

2. NOISE AND VIBRATION FUNDAMENTALS

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.

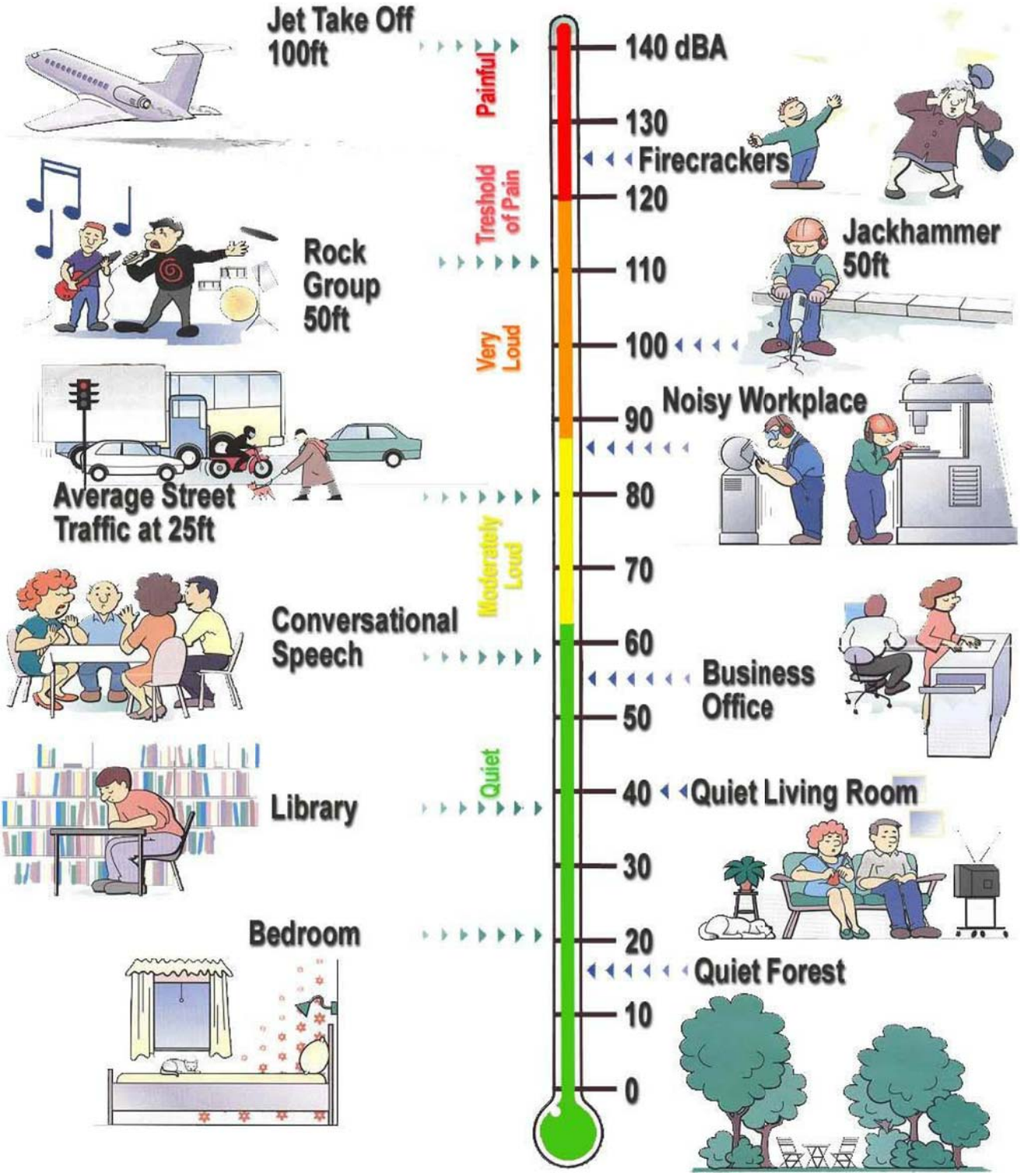
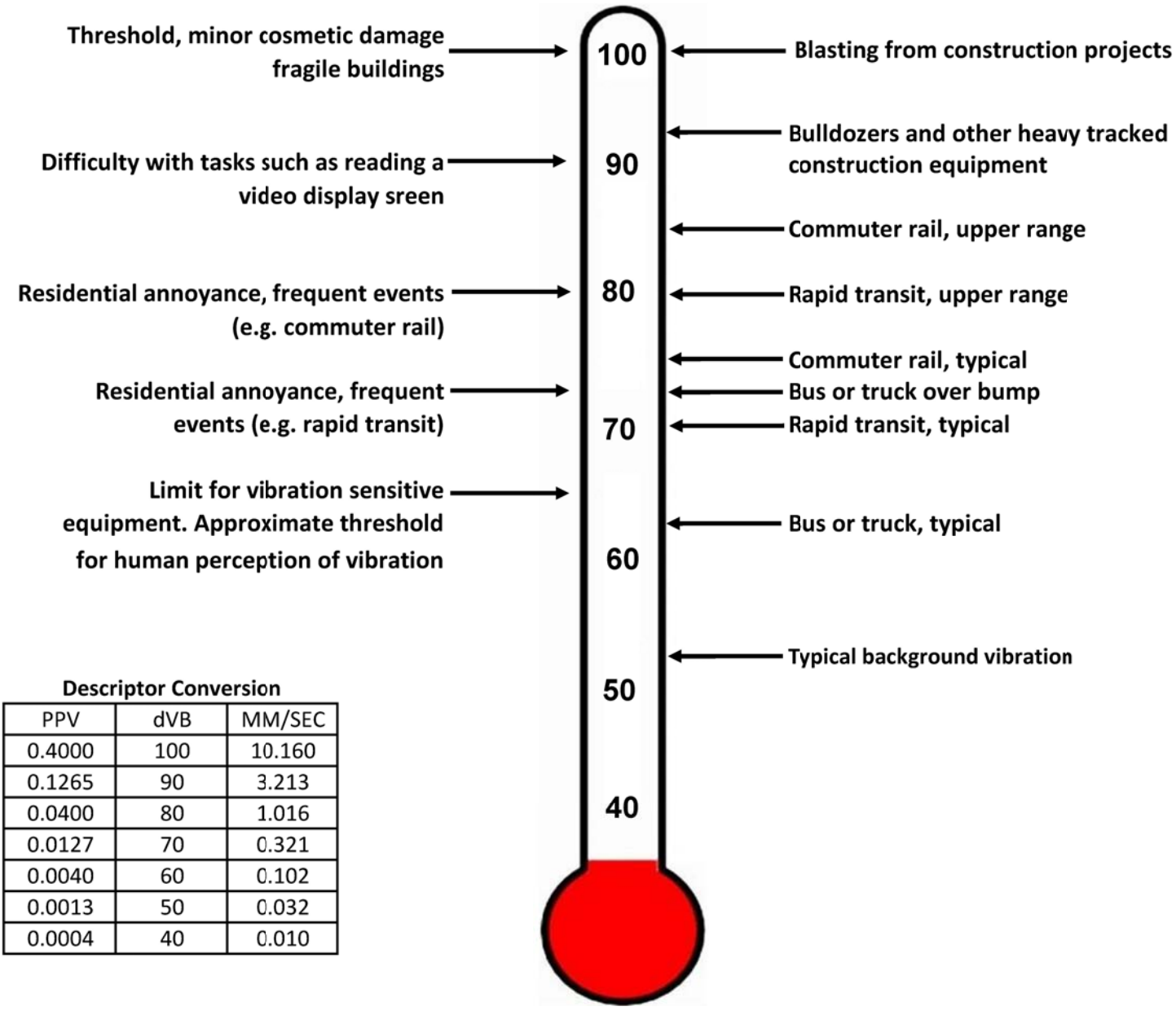


Figure 3
Weighted Sound Levels in Common Environments

Source: Bruel & Kjaer 2001



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

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is bordered by multi-family residential uses to the north, 25th Street E to the east, Avenue R to the south, and Palmdale High School to the west of the project site.

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 existing multi-family residential uses located adjacent to the north and the single-family residential uses located approximately 100 feet to the east (across 25th Street E), 175 feet to the southeast (across the intersection of 25th Street E and Avenue R), and 100 feet to the south (across Avenue R) of the project site. In addition, Palmdale High School is located adjacent to the west of the project site and a church use is located approximately 100 feet to the south (across Avenue Ru) 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, seven (7) 15-minute daytime noise measurements were taken between 11:54 AM and 3:27 PM on August 24, 2022. In addition, one (1) long-term 24-hour noise measurement was also taken from August 24, 2022, to August 25, 2022. Field worksheets and noise measurement output data are included 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 school use to the west of the boundaries of the project site (Palmdale High School, 2137 E Avenue R, Palmdale). The noise meter was placed just east of the school's eastern property line.

- STNM2: represents the existing noise environment of the multi-family residential uses to the north of the boundaries of the project site (Canyon Creek Apartments, 38121 25th St East, Palmdale). The noise meter was placed near the southern boundary of the residential use just north of the project site.

- STNM3: represents the existing noise environment of the multi-family residential uses located at the northeast corner of the intersection of E Avenue Q-12 and 25th Street (2506 East Avenue Q-12, Palmdale). The noise meter was placed just west of the most southwestern unit just north of East Avenue Q-12.

- STNM4: represents the existing noise environment of the single-family residential uses along Jeri Lane to the east of the boundaries of the project site (38003 Jeri Lane, Palmdale). The noise meter was placed just east of 25th Street near the western boundary of the single-family residence.

- STNM5: represents the existing noise environment of the single-family residential uses to the southeast of the project site along Avenue R Frontage Road (2504 East Avenue R, Palmdale). The noise meter was placed just east of 25th Street near the western boundary of the single-family residence.

- STNM6: represents the existing noise environment of the single-family residential uses to the south of the project site along Vintage Court (37954 Vintage Court, Palmdale). The noise meter was placed just south of Avenue R near the northern boundary of the single-family residence.

- STNM7: represents the existing noise environment of the single-family residential uses to the southwest of the project site along Ashlee Court (37855 Ashlee Court, Palmdale). The noise meter was placed just north of the single-family residence and Ashlee Court.

- LTNM1: represents the existing noise environment of the project site. The noise meter was placed near the center of the proposed project area.

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 measurement. Short-term ambient noise levels were measured between 51.7 and 71.4 dBA L_{eq}. Long-term hourly noise measurement ambient noise levels ranged from 48.9 to 63 dBA L_{eq}. The dominant noise source was from vehicle traffic associated with Avenue R, 25th Street, East Avenue Q-12, and other surrounding roadways.

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	11:54 AM	59.5	70.7	42.3	65.7	63.7	60.7	57.5
STNM2	12:19 PM	53.6	68.2	45.6	61.8	55.4	52.3	50.7
STNM3	12:49 PM	58.7	69.9	49.0	64.1	62.4	60.0	56.9
STNM4	1:37 PM	71.4	86.7	56.9	80.2	75.8	70.0	65.4
STNM5	1:58 PM	71.1	83.7	58.2	78.3	75.1	72.2	67.8
STNM6	2:18 PM	67.5	82.1	50.6	76.6	71.8	66.7	63.1
STNM7	3:12 PM	51.6	62.3	45.4	58.0	54.5	51.9	50.2

Notes:

(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.

(2) Noise measurements performed on August 24, 2022.

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	7:00 PM	58.7	85.5	34.7	65.8	62.0	58.4	54.9
1	7:00 PM	61.5	83.0	46.6	69.1	63.4	59.8	57.0
2	8:00 PM	60.5	80.0	47.1	68.8	63.5	59.5	56.5
3	9:00 PM	57.5	78.8	43.1	65.6	60.6	56.2	53.0
4	10:00 PM	54.9	73.5	41.3	62.8	58.4	54.2	51.4
5	11:00 PM	53.4	70.3	39.8	61.6	56.5	52.5	49.5
6	12:00 AM	51.4	72.1	38.4	59.8	54.6	50.9	47.4
7	1:00 AM	49.9	70.7	35.5	58.2	53.5	49.4	45.8
8	2:00 AM	48.9	69.6	34.7	56.7	52.8	47.5	43.3
9	3:00 AM	50.1	66.9	36.4	58.0	54.2	50.0	46.4
10	4:00 AM	54.3	69.5	40.1	61.9	58.3	54.6	51.0
11	5:00 AM	57.4	76.3	43.0	64.9	60.4	56.8	53.7
12	6:00 AM	58.7	75.0	45.1	66.7	62.1	58.7	55.9
13	7:00 AM	60.7	82.6	49.8	67.2	62.5	59.9	57.4
14	8:00 AM	59.0	78.7	47.3	65.2	61.6	59.0	56.7
15	9:00 AM	59.4	78.8	43.7	66.3	61.9	58.7	55.8
16	10:00 AM	60.3	85.5	45.4	67.1	61.7	57.9	54.9
17	11:00 AM	57.2	70.6	44.4	64.5	60.8	57.6	54.6
18	12:00 PM	58.7	81.2	45.0	65.4	61.5	58.4	55.6
19	1:00 PM	58.4	75.3	46.0	65.6	61.7	58.6	55.9
20	2:00 PM	59.5	80.6	48.8	65.3	62.4	59.8	57.2
21	3:00 PM	59.8	72.9	50.3	65.8	63.1	60.5	58.4
22	4:00 PM	61.3	74.9	52.0	67.0	64.6	62.1	59.8
23	5:00 PM	63.0	84.0	50.6	69.1	64.6	61.8	59.2
24	6:00 PM	60.7	79.5	49.9	67.5	63.8	60.9	57.9
CNEL	62.90							

Notes:

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

(2) Noise measurement performed from August 24, 2022 to August 25, 2022.



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

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 addition, the Levels of Environmental Noise identified five (5) dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

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.

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. The City of Palmdale has adopted their own version of the State Land Use Compatibility Guidelines (see Tables 3).

California Department of Transportation (Caltrans)

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations and although

the project is not subject to these regulations, it serves as useful tools to evaluate vibration impacts. These guidelines recommend that a standard of 0.2 inches per section (in/sec) PPV not be exceeded for the protection of normal residential buildings (California Department of Transportation, 2013). This is the appropriate threshold for construction related ground-borne vibration impacts.

LOCAL REGULATIONS

City of Palmdale General Plan

The current City of Palmdale General Plan Noise Element was adopted by the City Council in January 1993. The goals, objectives, and policies from the Noise Element that are applicable to the proposed project are presented below:

Goal N1 Minimize the exposure of residents to excessive noise to the extent possible, through the land planning and the development review process.

Objective N1.1 Utilize appropriate land use planning as the primary method of achieving noise compatibility among adjacent land uses.

Policies

Policy N1.1.1 Locate noise compatible land uses near existing and future air, rail and highway transportation noise sources.

Policy N1.1.3 When proposed stationary noise sources could exceed an exterior noise level of 65 dBA CNEL at present, or could impact future noise sensitive land uses, require preparation of an acoustical analysis and mitigation measures to reduce noise levels to no more than 65 dBA CNEL exterior and 45 dBA CNEL interior; if the noise level cannot be reduced to these thresholds through mitigation, the new noise source should not be permitted.

Policy N1.1.4 Consider the noise environment when making land use decisions with respect to the guidelines contained in Table 3 and require noise standards consistent with the criteria listed on Table 4. The State Recommended Acceptable Noise Guidelines, listed in Table 3, are provided as guidelines only, and are not represented as standards.

Objective N1.2 Protect and maintain those areas having acceptable noise environments.

Policies

Policy N1.2.1 Locate new major noise sources in areas containing existing noise sources and avoid their location adjacent to noise sensitive land uses unless a finding can be made, based on evidence in the record, that the placement of the new noise source will not result in adverse impacts to the existing noise sensitive land use.

Policy N1.2.2 Restrict construction hours during the evening, early morning and Sundays.

Policy N1.2.3 Utilize any or all of the following measures in order to maintain acceptable noise environments throughout the City:

1. Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
2. The provision of buffer areas and/or wide setbacks between the noise source and other development.
3. The reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).

4. The use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
5. Designation of appropriate land uses adjacent to known noise sources.

City of Palmdale Municipal Code

The City of Palmdale Municipal Code (PMC) includes the following noise related regulations that pertain to the proposed project.

Chapter 8.28 Building Construction Hours of Operation and Noise Control

Section 8.28.030 Construction noise prohibited in residential zones

Except as otherwise provided in this chapter, no person shall perform any construction or repair work on any Sunday, or any other day after 8:00 PM or before 6:30 AM, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. For the purposes of this section, construction and repair work includes work of any kind upon any building or structure, earth excavating, filling, or moving, and delivery, preparation or operation of construction equipment, materials or supplies where any of the foregoing entails the use of an air compressor, jack hammer, power-driven drill, riveting machine, excavator, semi-truck, diesel power truck, tractor, cement truck, or earth moving equipment, hand hammer, or other machine, tool, device or equipment which makes loud noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness sleeping or residing in the area.

Section 8.28.040 Exceptions

The provisions of PMC Section 8.28.030 do not apply to any person who performs the construction, repair, excavation or earth moving work involved pursuant to the express written permission of the City Engineer to perform such work at times prohibited in PMC 8.28.030. Upon receipt of an application in writing therefore, stating the reasons for the request and the facts upon which such reasons are based, the City Engineer may grant such permission if he finds that:

A. The work proposed to be done is affected with public interest; or
B. Hardship, injustice, or unreasonable delay would result from the interruption thereof during the hours and days specified in PMC 8.28.030; or
C. The building or structure involved is devoted or intended to be devoted to a use immediately incident to public defense.

Chapter 9.18 Disturbing, Excessive, Loud or Offensive Noise

Section 9.18.020 Acts constituting disturbing, excessive, loud, offensive noise

The following activities, among others, are declared to cause disturbing, excessive, loud, or offensive noises in violation of this chapter and causing or permitting such activities is unlawful; provided, however, that inclusion in this section shall not be construed as limiting the type of activities which may be found to cause disturbing, excessive, loud, or offensive noises:

C. Hospitals, Schools, Libraries, Rest Homes, Long-Term Medical or Mental Care Facilities. To make noise adjacent to a hospital, school, library, rest home, or long-term medical or mental care facility, which noise unreasonably interferes with the workings of such institutions or which disturbs or unduly annoys occupants of such institutions.

Chapter 17.92 Commercial Uses

Section 17.92.170 Car Washes, Express

It is the purpose of these regulations to establish specific standards for express car washes facilities. The intent is to insure that express car washes facilities are designed and located in a manner that minimize impacts to adjacent uses, aesthetic impacts, and ensure compatibility with the surrounding uses and neighborhood while at the same time permitting Express Car Wash uses.

Development Standards
Any express car wash use shall be developed and operated in conformance with the following standards in addition to any other applicable standards and regulations:

1. The car wash use shall operate between the hours of 7:00 AM to 9:00 PM, daily unless otherwise approved by the reviewing authority.

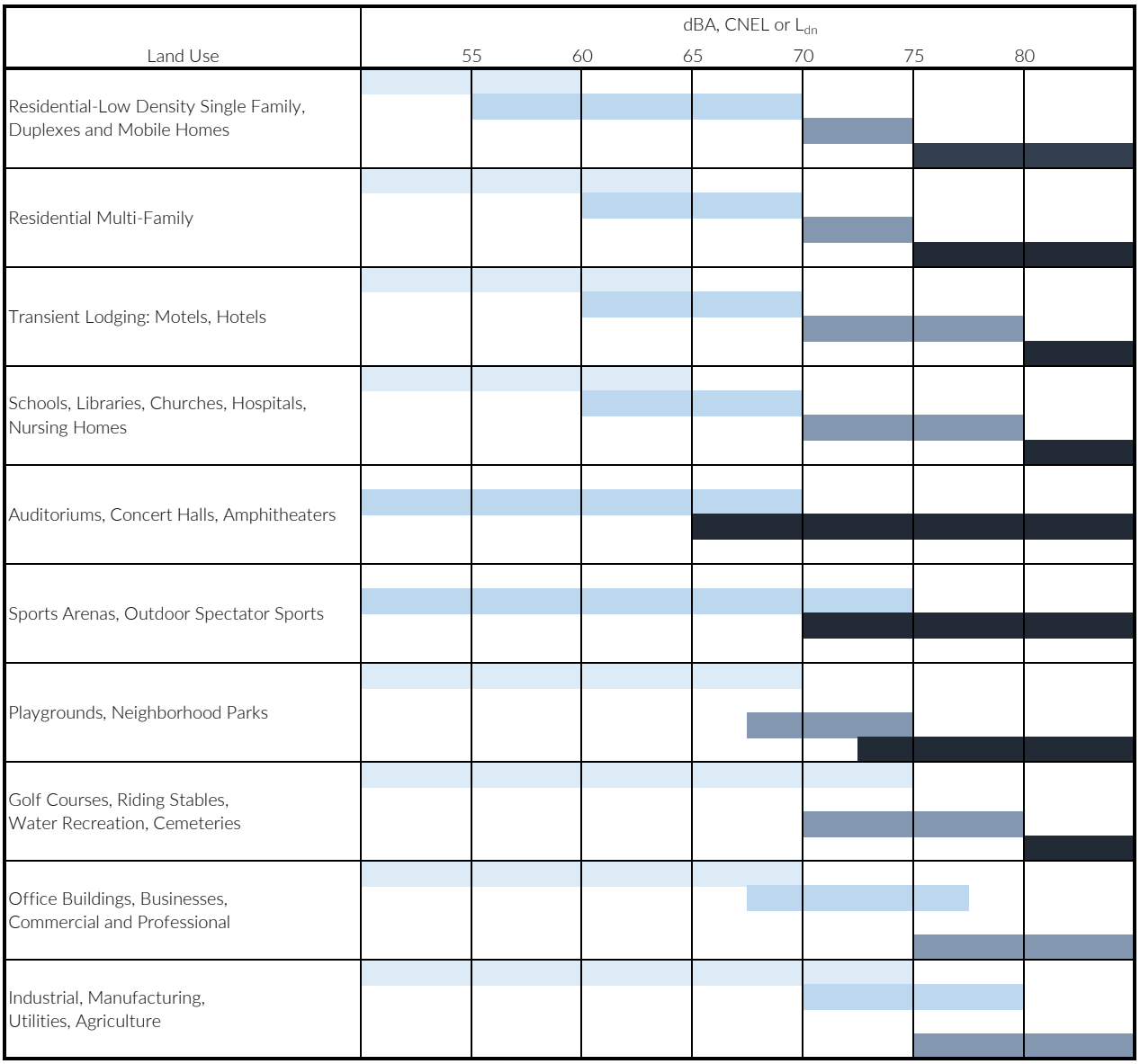
2. Noise generated by an Express Car Wash use shall not impact existing or future adjacent residential uses in compliance with the Palmdale General Plan Noise Element. Acoustical studies and manufacturers data and information may be requested as needed to demonstrate compliance with this requirement.

Chapter 17.84 Performance Standards

Section 17.84.050

Any existing or proposed use or portion thereof that can or may generate noise that constitutes or may be considered a nuisance or hazard on any adjacent property, shall control the source of the noise in such manner as will prevent the issuance, continuance, or recurrence of any hazardous or disturbing emanations. All existing or proposed uses shall conform to the Noise Element of the General Plan. All construction activity shall conform to Chapter 8.28 PMC, Building Construction Hours of Operation and Noise Control.

Table 3
Land Use Compatibility for Community Noise Exposure



Source: City of Palmdale General Plan Noise Element Table N-1 (January 1993).

Normally Acceptable: Specified land uses is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation or requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction and development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Table 4
City of Palmdale Maximum Acceptable Levels

Land Use	Exterior	Interior	Scale[1]
Residential			
SFR	65	45	dBA CNEL
MFR	65	45	dBA CNEL
MHP	65	45	dBA CNEL
Commercial: including, but not limited to:			
Retail	A noise level which does not jeopardize health, safety, and welfare of visitors.	55	Leq(h)
Services		55	Leq(h)
Office		55	Leq(h)
Institutional: including, but not limited to:			
Schools	A noise level which does not jeopardize health, safety, and welfare of visitors.	45	Leq(h)
Hospitals		45	Leq(h)
Nursing Homes		45	Leq(h)
Industrial: inlcuding, but not limited to:			
Industrial Park	A noise level which does not interfere with normal business activity.	65	Leq(h)
Business Park		65	Leq(h)
Quarry	Maximum 65 Leq (h) at the interface with residentially designated land.	NA	-

Notes:

Source: City of Palmdale General Plan Noise Element Table N-3 (January 1993).

(1) Leq(h): The A-weighted equivalent sound level averaged over a period of "h" hours. An example would be Leq(12) where the equivalent sound level is the average over a specified 12-hour period (such as 7 a.m. to 7 p.m.). Typically, time period "h" is defined to match the hours of operation of a given type of use.

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

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

CONSTRUCTION NOISE MODELING

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 analysis prepared for the proposed project (Lilburn Corporation, 2022). For construction noise 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 provided in Table 5 were utilized for modeling purposes. Construction noise worksheets are provided in Appendix D.

FEDERAL HIGHWAY ADMINISTRATION (FHWA) TRAFFIC NOISE PREDICTION MODEL

The roadway noise level increases from project generated vehicular traffic were modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emissions Levels.[1] Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification (i.e., collector, secondary, major or arterial), the roadway active width (i.e., distance between the center of the outermost travel lanes on each side of the roadway), travel speed, truck mix (i.e., percentage of automobiles, medium trucks, and heavy trucks in the traffic volume), roadway grade and site conditions (hard or soft ground surface relating to the absorption of the ground, pavement, or landscaping). Research conducted by Caltrans identifies that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model.[2] Therefore, surfaces adjacent to all modeled roadways were assumed to have a "soft site". Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis.

Existing and Project average daily trips were obtained from the Beyond Food Mart (25th Street & Ave R) Traffic Impact Analysis (Ganddini Group, August 19, 2022). As neither the City of Palmdale nor the County of Los Angeles have vehicle mixes for use in noise analyses, the vehicle/truck mixes and D/E/N splits for use in acoustical studies published by the Riverside County Department of Industrial Hygiene were utilized for noise modeling. Existing Plus Project vehicle mixes were calculated by adding the proposed project trips to existing conditions. FHWA spreadsheets are included in Appendix E.

SOUNDPLAN NOISE MODEL

The SoundPLAN acoustical modeling software was utilized to model project operational worst-case stationary noise impacts from the proposed project to adjacent sensitive uses (e.g., residences). SoundPLAN is capable

[1] California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.

[2] California Department of Transportation. Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report. June 1995. FHWA/CA/TL-95/23.

of evaluating stationary noise sources (e.g., parking lots, drive-thru menus, carwash 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 F.

Peak hour operational noise levels were modeled utilizing representative sound levels in the SoundPLAN model. Modeled noise sources include car wash equipment, vacuum equipment, queuing, fueling area and parking lot noise, drive-thru speaker, 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.

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 93.1dBA L_{eq}[3] at the tunnel exit was utilized to model the propagation of car wash noise in the SoundPLAN noise model. A point noise source was placed 5 feet from the opening of the end of the car wash tunnel at a height of 8 feet to represent dryer noise.

Vacuum Equipment Noise

A hose system will extend from vacuum producers that will be located with other car wash equipment within the car wash structure. A point noise source with a sound pressure level of 76.8 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[4]. 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.

Queuing, Parking Lot Noise and Fueling Area

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 spot, 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[5].

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 the 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)

[3] Representative Noise Measurement of 12 MacNeil Tech-21 15 HP Dryers at tunnel exit taken at Scrub Bot Express Wash 3965 W. Ray Rd. Chandler, AZ 85226 provided by the equipment manufacturer.

[4] 2017 Noise Measurements, Fast Five Car Wash. City of Murrieta, November 7. Kunzman Associates.

[5] SoundPLAN Essential 4.0 Manual. SoundPLAN International, LLC. May 2016.

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

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

The fueling area was modeled as an area noise source with a sound power level of 65 dBA L_{eq} per square meter to represent normal to loud speech.

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[6]. 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 3 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. Roof top is assumed to be approximately 6 meters (~18.3 feet) above grade.

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

Table 5 (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 5 (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.

6. IMPACT ANALYSIS

This impact discussion analyzes the potential for noise and/or groundborne vibration impacts to cause the exposure of a person to, or generation of, noise levels in excess of established City of Palmdale standards related to construction, transportation, and operational noise related impacts from the proposed project.

NOISE IMPACTS DUE TO CONSTRUCTION ACTIVITIES

Construction activities will occur in phases including demolition, site preparation, grading, building construction, paving, and architectural coating. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. Construction activities are anticipated to begin no sooner than the end of May 2023 and be completed by mid-May 2024.

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. The existing multi-family residential use property lines located adjacent to the north; the existing single-family residential use property lines located approximately 100 feet to the east, 175 feet to the southeast, and 100 feet to the south; the existing school use property line located adjacent to the west; and the existing church use property line located approximately 100 feet to the south of the project site boundaries may be affected by short-term noise impacts associated with construction noise.

Construction noise associated with the proposed project was calculated 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 proposed construction activity. Construction noise levels were calculated for each phase. Anticipated noise levels during each construction phase are presented in Table 6. Worksheets for each phase are included as Appendix D.

Modeled unmitigated construction noise levels reached 76 dBA L_{eq} at the nearest multi-family residential property line to the north of the project site, up to 63 dBA L_{eq} at the nearest single-family residential property line to the northeast of the project site, up to 73 dBA L_{eq} at the nearest single-family residential property line to the east of the project site, up to 69 dBA L_{eq} at the nearest single-family residential property line to the southeast of the project site, up to 72 dBA L_{eq} at the nearest single-family residential property line to the south of the project site, up to 72 dBA L_{eq} at the nearest chruch property line to the south of the project site, up to 61 dBA L_{eq} at the nearest single-family residential property line to the southwest of the project site, and up to 68 dBA L_{eq} at the nearest school property line to the west of the project site.

Table 6 also includes a comparison of existing noise levels and project construction noise levels. Short-term noise measurement (STNM)2 was chosen to represent noise levels at the nearest residential property line of the multi-family residential uses to the north, STNM3 was chosen to represent noise levels at the nearest residential property line of the single-family residential uses to the northeast, STNM4 was chosen to represent noise levels at the nearest residential property line of the single-family residential uses to the east, STNM5 was chosen to represent noise levels at the nearest residential property line of the single-family residential uses to the southeast, STNM6 was chosen to represent noise levels at the nearest single-family residential and church property lines to the south, and STNM1 was chosen to represent noise levels at the nearest property line of the school use to the west of the project site.

As discussed earlier, construction noise sources are regulated within PMC Section 8.28.030 which prohibits construction activities after 8:00 PM or before 6:30 AM, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park.

Project construction will not occur outside of the hours outlined as "exempt" in PMC Section 8.28.030 and therefore, will not result in or generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance.

The following BMPs will be included on the project plans and any related contract specifications. Construction noise impacts would be less than significant.

Construction Noise - Best Management Practices

1. All construction 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 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 PMC Section 8.28.030.

Off-Site Construction

Construction truck trips would occur throughout the construction period. Given the project site's proximity to the State Route 138 and State Route 14, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

According to the FHWA, the traffic volumes need to be doubled in order to increase noise levels by 3 dBA CNEL. The estimated existing average daily trips along Avenue R range between 12,100 to 14,300 average daily vehicle trips and along 25th Street range between 5,700 to 12,600 average daily vehicle trips.[7] Project construction is expected to generate up to approximately 37.5 vehicle trips per day (15 for worker trips and 22.5 for hauling trips during grading phase).[8] Therefore, the addition of project vendor/haul trucks and worker vehicles per day along off-site roadway segments would not be anticipated to result in a doubling of traffic volumes. Off-site project generated construction vehicle trips would result in a negligible noise level increase and would not result in a substantial increase in ambient noise levels. Impacts would be less than significant. No mitigation measures are required.

[7] The existing average daily traffic volumes were obtained from the Beyond Food Mart (25th Street & Ave R) Traffic Impact Analysis (Ganddini Group, 2022), see Table 7 for details.

[8] Construction vehicle trips taken from the CalEEMod modeling in the air quality analysis prepared for the proposed project (Lilburn Corporation, 2022). As shown in the CalEEMod output, site preparation has the most construction vehicle trips per day at 7.5 worker trips per day and 140 hauling trips per day.

NOISE IMPACTS DUE TO PROJECT OPERATION

Noise Impacts to Off-Site Receptors Due to Project Generated Trips

During operation, the proposed project is expected to generate approximately 4,656 new average daily trips (with pass-by reduction) with 171 trips during the AM peak-hour and 209 trips during the PM peak-hour. A project-generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated at the right of way 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 levels are shown for comparative purposes only to show the difference in with and without project conditions. Roadway input parameters including average daily traffic volumes (ADTs), speeds, and vehicle distribution data is shown in Table 7. The potential off-site noise impacts caused by an increase of traffic from operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Existing Year (without Project): This scenario refers to existing year traffic noise conditions and is demonstrated in Table 7.

Existing Year (With Project): This scenario refers to existing year plus project traffic noise conditions and is demonstrated in Table 7.

As shown in Table 8, modeled Existing traffic noise levels range between 68-76 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project traffic noise levels range between 68-76 dBA CNEL at the right-of-way of each modeled roadway segment.

For purposes of this project, increases in ambient noise along affected roadways due to project generated vehicle traffic is considered substantial if they result in an increase of at least 3 dBA CNEL and: (1) the existing noise levels already exceed the applicable mobile source noise standard for the affected sensitive receptors set forth in the City's General Plan; or (2) the project increases noise levels by at least 3 dBA CNEL and raises the ambient noise level from below the applicable standard to above the applicable standard.

Project generated vehicle traffic is anticipated to increase existing noise levels between approximately 0.1 to 1.1 dBA CNEL. Therefore, a change in noise level would not be audible and would be considered less than significant. No mitigation is required.

Noise impacts to Off-Site Receptors Due to On-Site Operational Noise

Project Operational Noise – On-Site Operation

Noise sensitive land uses that may be affected by project operational noise include the existing residential dwelling units to the north, south and east, and Palmdale High School to the west. As shown in Figure 6, modeled peak hour project operational noise is expected to range between 53 and 68 dBA CNEL at the residential land uses. This exceeds the City's Maximum Acceptable Noise Levels criteria (Table 3) of 65 dBA CNEL. With the addition of a 6-foot concrete wall along the northern project property line, As shown on Figure 7, operational noise levels at residential land uses would all fall below the City's criteria of 65. Impacts would be less than significant with mitigation.

Operational noise levels at Palmdale High School, west of the project site would not exceed 54 dBA CNEL and therefore will not exceed 45 dBA CNEL at classrooms. Typical construction provides approximately 20 dB of exterior to interior noise reduction and classroom portables can be expected to provide at least 15 dB of exterior to interior noise levels as long as HVAC is provided, allowing a window closed condition.

Existing measured ambient noise levels at the sensitive receptor locations ranged between 52 and 68 dBA CNEL at nearby properties. Without mitigation, the project may increase ambient noise levels by up to 11.7

dBA CNEL at the northern property line shared with multiple family residential development. With mitigation, (see mitigation measure below) the increase in ambient noise levels would be less than 1 dB (see Table 9). This impact is less than significant with mitigation.

Operational Noise – Mitigation Measure

1. A concrete wall, six feet in height, shall be installed along the northern project boundary.

GROUNDBORNE VIBRATION IMPACTS

There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 10, a vibratory roller could generate up to 0.21 PPV at a distance of 25 feet; and operation of a large bulldozer (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 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.

Architectural Damage

Construction activity has the potential to result in cracking of floor slabs, foundations, columns, beams, or wells, or cosmetic architectural damage, such as cracked plaster, stucco, or tile. (California Department of Transportation, 2020). Land uses adjacent to the proposed construction are industrial and residential. Table 11 identifies a PPV level of 0.5 in/sec as the threshold at which there is a risk to "architectural" damage to modern industrial/commercial buildings and a PPV level of 0.3 in/sec for older residential structures.

The nearest off-site structures, to the portion of the total project site where construction is to occur, include the multi-family residential dwelling units located as close as approximately 38 feet to the north of the project's northern property line, the single-family residential dwelling units located as close as approximately 115 feet to the east of the project's eastern property line and 106 feet to the south of the project's southern property line, and the school structures located as close as approximately 355 feet to the west (solar carports) and 389 feet to the northwest (buildings) of the project's western property line. Estimated groundborne vibration levels at the nearest sensitive receptors are presented in Table 12. As shown in Table 12, temporary vibration levels associated with project construction would not exceed the threshold at which there is a risk to "architectural" damage to older residential structures of a PPV of 0.3 in/sec or industrial/commercial buildings of a PPV of 0.5 in/sec. The project does not propose any non-construction related sources of ground-borne vibration.

Temporary vibration levels associated with project construction would be less than significant. No mitigation is required. Vibration worksheets are provided in Appendix G.

Annoyance to Persons

The primary effect of perceptible vibration is often a concern. However, secondary effects, such as the rattling of a china cabinet, can also occur, even when vibration levels are well below perception. Any effect (primary perceptible vibration, secondary effects, or a combination of the two) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping, or reading will be more sensitive than someone who is running on a treadmill. Reoccurring primary and secondary vibration effects often lead people to believe that the vibration is damaging their home, although vibration levels are well below minimum thresholds for damage potential. (California Department of Transportation, 2020).

As shown in Table 13, groundborne vibration becomes distinctly perceptible to sensitive receptors at a level of 0.04 in/sec PPV and severely perceptible at a level of 0.1 in/sec PPV. Operation of a vibratory roller may result in groundborne vibration levels of up to 0.1 at a distance of 41 feet and a large bulldozer at a distance of 23 feet. Therefore, as shown in Table 12, project construction could cause annoyance to the residential uses to the north of the project site. However, potential annoyance would only occur when a vibratory roller, or other similar vibratory equipment, is utilized within 3 feet of the property line in proximity to the residential dwelling unit to the north. Therefore, annoyance will be short-term and will occur only during site grading and preparation which will be limited to daytime hours. Impacts are less than significant. Vibration worksheets are provided in Appendix G.

Table 6 (1 of 2)
Construction Noise Levels (dBA Leq)

Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[2]	Construction Noise Levels (dBA Leq)
Site Preparation	Multi-family Residential Uses to the North (Canyon Creek Apartments, 38121 25th St E)	53.6	75.7
	Single-Family Residential Uses to the Northeast (2506 E Ave Q-12)	58.7	62.8
	Multi-Family Residential Uses to the Northeast (SEC 25th Street and Ave Q-12)	58.7	67.7
	Single-Family Residential Uses to the East (38021 Jeri Lane)	71.4	73.5
	Single-Family Residential Uses to the Southeast (2504 East Avenue R)	71.1	69.3
	Single-Family Residential Uses to the South (37954 Vintage Ct)	67.5	72.2
	Church Use to the South (Living Praise Christian Center, 2320 E Ave R)	67.5	71.7
	Single-Family Residential Uses to the Southwest (37856 Ashlee Ct)	51.6	60.8
	School Use to the West (Palmdale High School, 2137 E Ave R)	59.5	68.4
Grading	Multi-family Residential Uses to the North (Canyon Creek Apartments, 38121 25th St E)	53.6	75.3
	Single-Family Residential Uses to the Northeast (2506 E Ave Q-12)	58.7	62.4
	Multi-Family Residential Uses to the Northeast (SEC 25th Street and Ave Q-12)	58.7	67.3
	Single-Family Residential Uses to the East (38021 Jeri Lane)	71.4	73.1
	Single-Family Residential Uses to the Southeast (2504 East Avenue R)	71.1	69.0
	Single-Family Residential Uses to the South (37954 Vintage Ct)	67.5	71.9
	Church Use to the South (Living Praise Christian Center, 2320 E Ave R)	67.5	71.4
	Single-Family Residential Uses to the Southwest (37856 Ashlee Ct)	51.6	60.4
	School Use to the West (Palmdale High School, 2137 E Ave R)	59.5	68.0
Building Construction	Multi-family Residential Uses to the North (Canyon Creek Apartments, 38121 25th St E)	53.6	73.9
	Single-Family Residential Uses to the Northeast (2506 E Ave Q-12)	58.7	61.0
	Multi-Family Residential Uses to the Northeast (SEC 25th Street and Ave Q-12)	58.7	66.0
	Single-Family Residential Uses to the East (38021 Jeri Lane)	71.4	71.7
	Single-Family Residential Uses to the Southeast (2504 East Avenue R)	71.1	67.6
	Single-Family Residential Uses to the South (37954 Vintage Ct)	67.5	70.5
	Church Use to the South (Living Praise Christian Center, 2320 E Ave R)	67.5	70.0
	Single-Family Residential Uses to the Southwest (37856 Ashlee Ct)	51.6	59.0
	School Use to the West (Palmdale High School, 2137 E Ave R)	59.5	66.6

Table 6 (2 of 2)
Construction Noise Levels (dBA Leq)

Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[2]	Construction Noise Levels (dBA Leq)
Paving	Multi-family Residential Uses to the North (Canyon Creek Apartments, 38121 25th St E)	53.6	69.4
	Single-Family Residential Uses to the Northeast (2506 E Ave Q-12)	58.7	56.5
	Multi-Family Residential Uses to the Northeast (SEC 25th Street and Ave Q-12)	58.7	61.5
	Single-Family Residential Uses to the East (38021 Jeri Lane)	71.4	67.2
	Single-Family Residential Uses to the Southeast (2504 East Avenue R)	71.1	63.1
	Single-Family Residential Uses to the South (37954 Vintage Ct)	67.5	66.0
	Church Use to the South (Living Praise Christian Center, 2320 E Ave R)	67.5	65.5
	Single-Family Residential Uses to the Southwest (37856 Ashlee Ct)	51.6	54.5
	School Use to the West (Palmdale High School, 2137 E Ave R)	59.5	62.1
Architectural Coating	Multi-family Residential Uses to the North (Canyon Creek Apartments, 38121 25th St E)	53.6	62.0
	Single-Family Residential Uses to the Northeast (2506 E Ave Q-12)	58.7	49.1
	Multi-Family Residential Uses to the Northeast (SEC 25th Street and Ave Q-12)	58.7	54.0
	Single-Family Residential Uses to the East (38021 Jeri Lane)	71.4	59.8
	Single-Family Residential Uses to the Southeast (2504 East Avenue R)	71.1	55.6
	Single-Family Residential Uses to the South (37954 Vintage Ct)	67.5	58.5
	Church Use to the South (Living Praise Christian Center, 2320 E Ave R)	67.5	58.0
	Single-Family Residential Uses to the Southwest (37856 Ashlee Ct)	51.6	47.1
	School Use to the West (Palmdale High School, 2137 E Ave R)	59.5	54.7

Notes:

(1) Construction noise worksheets are provided in Appendix D.

(2) Per measured existing ambient noise levels (see Table 1). STNM2 was used for multi-family residential uses to the north, STNM3 was used for single-family and multi-family residential uses to the northeast, STNM4 was used for single-family residential uses to the east, STNM5 was used for single-family residential uses to the southeast, STNM6 was used for single-family residential and church uses to the south, STNM7 was used for single-family residential uses to the southwest, and STNM1 was used for school uses to the west.

Table 7
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		
Palmdale Boulevard	West of 25th Street	21,700	466	45	Soft
	East of 25th Street	19,600	466	45	Soft
Avenue R	West of 20th Street	12,200	698	50	Soft
	20th Street to Project Site	12,100	1,164	50	Soft
	Project Site to 25th Street	12,100	2,747	50	Soft
	25th Street to 30th Street	14,300	1,862	50	Soft
	East of 30th Street	13,700	698	50	Soft
Avenue R-8	West of 25th Street	2,200	233	50	Soft
20th Street	North of Avenue R	8,300	698	50	Soft
	South of Avenue R	8,500	233	50	Soft
25th Street	North of Palmdale Boulevard	5,700	233	50	Soft
	Palmdale Boulevard to Project Site	10,200	1,164	50	Soft
	Project Site to Avenue R	9,900	3,026	50	Soft
	Avenue R to Avenue R-8	11,500	1,164	55	Soft
	South of Avenue R-8	12,600	931	55	Soft
30th Street	North of Avenue R	7,500	931	50	Soft
	South of Avenue R	6800	233	50	Soft

Vehicle Distribution (Light Mix)[2]			
Motor-Vehicle Type	Daytime % (7 AM-7 PM)	Evening % (7 PM-10 PM)	Night % (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 trips were obtained from the Beyond Food Mart (25th Street & Avenue R) Traffic Impact Analysis (Ganddini Group August 2022).

(2) Existing vehicle percentages are based on the Riverside County Industrial Hygiene Letter for Traffic Noise.

Table 8
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 3 dB or More?
Palmdale Boulevard	West of 25th Street	52	76.10	76.20	0.10	Yes	No
	East of 25th Street	52	75.66	75.80	0.14	Yes	No
Avenue R	West of 20th Street	52	74.30	74.50	0.20	Yes	No
	20th Street to Project Site	52	74.26	74.70	0.44	Yes	No
	Project Site to 25th Street	52	74.26	75.10	0.84	Yes	No
	25th Street to 30th Street	52	74.99	75.50	0.51	Yes	No
	East of 30th Street	52	74.80	75.00	0.20	Yes	No
Avenue R-8	West of 25th Street	42	67.78	68.20	0.42	Yes	No
20th Street	North of Avenue R	42	73.55	73.90	0.35	Yes	No
	South of Avenue R	42	73.65	73.80	0.15	Yes	No
25th Street	North of Palmdale Boulevard	52	70.99	71.20	0.21	Yes	No
	Palmdale Bouleavard to Project Site	52	73.52	74.00	0.48	Yes	No
	Project Site to Avenue R	52	73.39	74.50	1.11	Yes	No
	Avenue R to Avenue R-8	52	74.70	75.10	0.40	Yes	No
	South of Avenue R-8	52	75.09	75.40	0.31	Yes	No
30th Street	North of Avenue R	52	72.18	72.70	0.52	Yes	No
	South of Avenue R	52	71.76	71.90	0.14	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 Palmdale General Plan Roadway Cross Sections (1993).
(3) Per the City of Palmdale single-family residential "normally acceptable" noise standard of 60 dBA CNEL (see Table 3).

Table 9
Comparison of Existing Measured Noise and Peak Hour Project Operational Noise (dBA, Leq)

Location	Measured Ambient Noise Level[1,2]	Modeled Operational Noise Level[3]	Combined Noise Level	Increase in Noise Level Due to Proposed Project	Combined Noise Level	Increase in Noise Level Due to Proposed Project
STNM1	59.5	52.0	60.2	0.7	59.5	0.0
STNM2	53.6	65.0	65.3	11.7	53.6	0.0
STNM3	58.7	53.0	59.7	1.0	58.7	0.0
STNM4	71.4	58.0	71.6	0.2	71.4	0.0
STNM5	71.1	53.0	71.2	0.1	71.1	0.0
STNM6	67.5	59.0	68.1	0.6	67.5	0.0
STNM7	51.6	63.0	63.3	11.7	51.6	0.0
STNM8	51.6	68.0	68.1	16.5	51.6	0.0
STNM9	61.5	53.0	62.1	0.6	61.5	0.0

Notes:

(1) See Figure 5 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.

(2) Noise measurements performed on August 24, 2022.

Table 10
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

Table 11
Guideline Vibration Damage Potential Threshold Criteria

Structure Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 19, April 2020.

Notes:

(1) Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

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				
Multi-Family Residential to North	38	Vibratory Roller	0.112	No
	38	Large Bulldozer	0.047	No
Single-Family Residential to East	115	Vibratory Roller	0.021	No
	115	Large Bulldozer	0.009	No
Single-Family Residential to South	106	Vibratory Roller	0.024	No
	106	Large Bulldozer	0.009	No
School to West (Solar Carports)	355	Vibratory Roller	0.004	No
	355	Large Bulldozer	0.002	No
School to Northwest (Buildings)	389	Vibratory Roller	0.003	No
	389	Large Bulldozer	0.001	No

Notes:

(1) Vibration levels are provided in PPV in/sec.

(2) Caltrans identifies the threshold at which there is a risk to "architectural" damage to older residential structures as 0.3 in/sec PPV and 0.5 in/sec PPV to modern industrial/commercial buildings (see Table 11).

Table 13
Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 20, April 2020.

Notes:

(1) Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

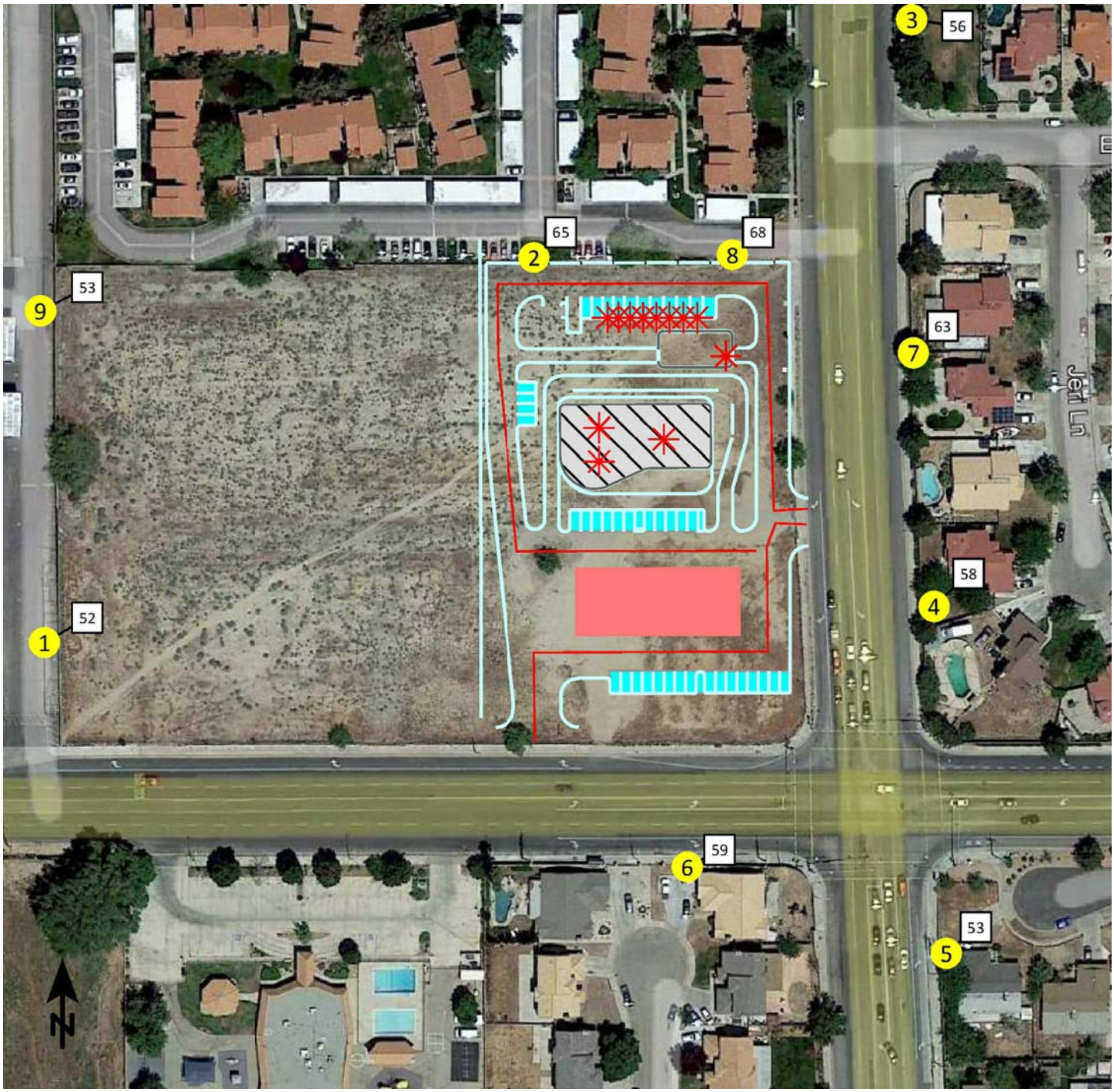


Figure 6
Project Operational Noise Levels (dBA, CNEL)

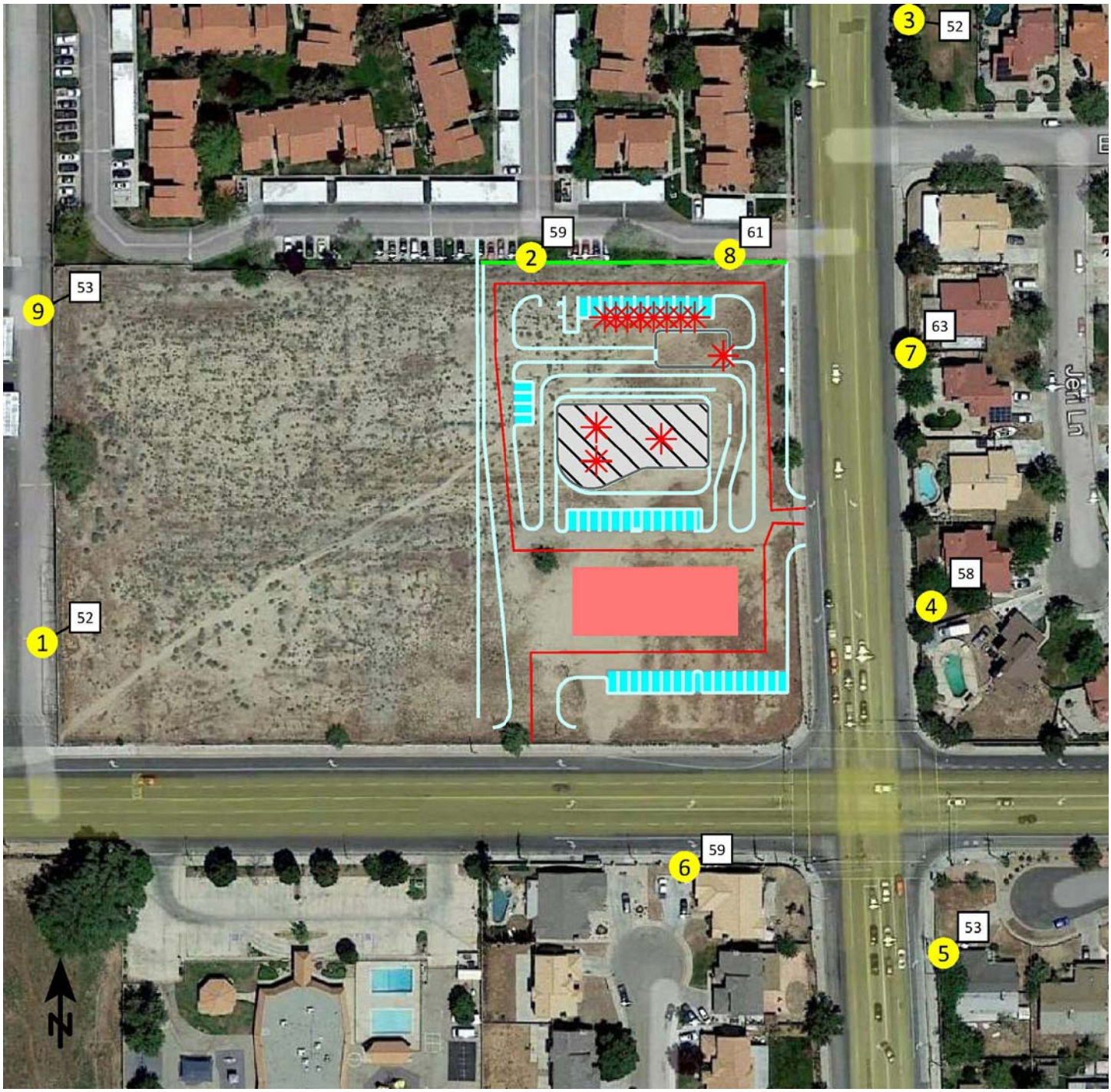


Figure 7
Project Operational Noise Levels (dBA, CNEL) - Mitigated

7. CEQA THRESHOLDS & IMPACTS EVALUATION

Will the project result in the:

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?*

Less Than Significant Impact:

On-Site Construction Noise

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 activities will occur in phases including demolition, site preparation, grading, building construction, paving, and architectural coating. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. Construction activities are anticipated to begin no sooner than the end of May 2023 and be completed by mid-May 2024.

Construction noise associated with each phase of project construction associated with the proposed project was calculated 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.

Modeled unmitigated construction noise levels reached 76 dBA L_{eq} at the nearest multi-family residential property line to the north of the project site, up to 63 dBA L_{eq} at the nearest single-family residential property line to the northeast of the project site, up to 73 dBA L_{eq} at the nearest single-family residential property line to the east of the project site, up to 69 dBA L_{eq} at the nearest single-family residential property line to the southeast of the project site, up to 72 dBA L_{eq} at the nearest single-family residential property line to the south of the project site, up to 72 dBA L_{eq} at the nearest chruch property line to the south of the project site, up to 61 dBA L_{eq} at the nearest single-family residential property line to the southwest of the project site, and up to 68dBA L_{eq} at the nearest school property line to the west of the project site.

As discussed earlier, construction noise sources are regulated within PMC Section 8.28.030 which prohibits construction activities after 8:00 PM or before 6:30 AM, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park.

Project construction will not occur outside of the hours outlined as “exempt” in PMC Section 8.28.030 and therefore, will not result in or generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance.

Impacts would be less than significant, and no mitigation is required.

The following BMPs will be included on the project plans and any related contract specifications. Construction noise impacts would be less than significant.

Construction Noise - Best Management Practices

1. All construction 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 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 PMC Section 8.28.030.

Off-Site Construction Noise

Construction truck trips would occur throughout the construction period. Given the project site's proximity to the State Route 138 and State Route 14, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

According to the FHWA, the traffic volumes need to be doubled in order to increase noise levels by 3 dBA CNEL. The estimated existing average daily trips along Avenue R range between 12,100 to 14,300 average daily vehicle trips and along 25th Street range between 5,700 to 12,600 average daily vehicle trips.[9] Project construction is expected to generate up to approximately 148 vehicle trips per day (7.5 for worker trips and 140 for hauling trips).[10] Therefore, the addition of project vendor/haul trucks and worker vehicles per day along off-site roadway segments would not be anticipated to result in a doubling of traffic volumes. Off-site project generated construction vehicle trips would result in a negligible noise level increase and would not result in a substantial increase in ambient noise levels. Impacts would be less than significant. No mitigation measures are required.

Operational Noise – Vehicle Trips

During operation, the proposed project is expected to generate approximately 4,656 new average daily trips (with pass-by reduction) with 171 trips during the AM peak-hour and 209 trips during the PM peak-hour. A Project generated vehicle noise along affected roadways was modeled utilizing a computer program that replicates the FHWA Traffic Noise Prediction Model FHWA-RD-77-108. Modeled existing traffic noise level noise levels range between 68-76 dBA CNEL at the right-of-way of each modeled roadway segment; and the modeled Existing Plus Project traffic noise levels range between 68-76 dBA CNEL at the right-of-way of each modeled roadway segment. Project generated vehicle traffic is anticipated to increase the noise between approximately 0.06 to 0.74 dBA CNEL and would not result in significant increases in ambient noise levels. The impact would be less than significant. No mitigation is required.

[9] The existing average daily traffic volumes were obtained from the Beyond Food Mart (25th Street & Ave R) Traffic Impact Analysis (Ganddini Group, 2022), see Table 7 for details.

[10] Construction vehicle trips taken from the CalEEMod modeling in the air quality analysis prepared for the proposed project (Lilburn Corporation, 2022). As shown in the CalEEMod output, site preparation has the most construction vehicle trips per day at 7.5 worker trips per day and 140 hauling trips per day.

Operational Noise – On-Site

Noise sensitive land uses that may be affected by project operational noise include the existing residential dwelling units to the north, south and east, and Palmdale High School to the west. As shown in Figure 6, modeled peak hour project operational noise is expected to range between 53 and 68 dBA CNEL at the residential land uses. This exceeds the City's Maximum Acceptable Noise Levels criteria (Table 3) of 65 dBA CNEL. With the addition of a 6-foot concrete wall along the northern project property line, As shown on Figure 7, operational noise levels at residential land uses would all fall below the City's criteria of 65. Impacts would be less than significant with mitigation.

Operational noise levels at Palmdale High School, west of the project site would not exceed 54 dBA CNEL and therefore will not exceed 45 dBA CNEL at classrooms. Typical construction provides approximately 20 dB of exterior to interior noise reduction and classroom portables can be expected to provide at least 15 dB of exterior to interior noise levels as long as HVAC is provided, allowing a window closed condition.

Existing measured ambient noise levels at the sensitive receptor locations ranged between 52 and 68 dBA CNEL at nearby properties. Without mitigation, the project may increase ambient noise levels by up to 11.7 dBA CNEL at the northern property line shared with multiple family residential development. With mitigation, (see mitigation measure below) the increase in ambient noise levels would be less than 1 dB (see Table 9). This impact is less than significant with mitigation.

Operational Noise – Mitigation Measure

1. A concrete wall, six feet in height, shall be installed along the northern project boundary.

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

Less Than Significant Impact:

The Caltrans Transportation and Construction Vibration Guidance Manual (2020) provides a comprehensive discussion regarding groundborne vibration and the appropriate thresholds to use to assess the potential for damage. As shown in Table 11, the threshold at which there is a risk of "architectural" damage to historic structures is a peak particle velocity (PPV) of 0.25 in/sec, and a PPV of 0.3 in/sec at older residential structures. There is a risk of architectural damage at newer residential structures and modern commercial/industrial buildings at a PPV of 0.5 in/sec.

The nearest off-site structures, to the portion of the total project site where construction is to occur, include the multi-family residential dwelling units located as close as approximately 38 feet to the north of the project's northern property line, the single-family residential dwelling units located as close as approximately 115 feet to the east of the project's eastern property line and 106 feet to the south of the project's southern property line, and the school structures located as close as approximately 355 feet to the west (solar carports) and 389 feet to the northwest (buildings) of the project's western property line. Estimated groundborne vibration levels at the nearest sensitive receptors are presented in Table 12. As shown in Table 12, temporary vibration levels associated with project construction would not exceed the threshold at which there is a risk to "architectural" damage to older residential structures of a PPV of 0.3 in/sec or industrial/commercial buildings of a PPV of 0.5 in/sec. The project does not propose any non-construction related sources of ground-borne vibration. Temporary vibration levels associated with project construction would be less than significant. No mitigation is required.

As shown in Table 13, groundborne vibration becomes distinctly perceptible to sensitive receptors at a level of 0.04 in/sec PPV and severely perceptible at a level of 0.1 in/sec PPV. Operation of a vibratory roller may result in groundborne vibration levels of up to 0.1 at a distance of 41 feet and a large bulldozer at a distance of 23 feet. Therefore, project construction could cause annoyance to the residential uses to the north of the project site. However, potential annoyance would only occur when a vibratory roller, or other similar vibratory

equipment, is utilized within 3 feet of the property line in proximity to the residential dwelling unit to the north. Therefore, annoyance will be short-term and will occur only during site grading and preparation which will be limited to daytime hours. Impacts are less than significant.

Operation of the proposed project will involve the movement of passenger vehicles and trucks. Driving surfaces associated with the project will be paved and will generally be smooth. Loaded trucks generally have a PPV of 0.076 at a distance of 25 feet (Caltrans 2020). Groundborne vibration levels associated with passenger vehicles is much lower. The movement of vehicles on the project site would not result in the generation of excessive groundborne vibration or groundborne noise. Impacts would be less than significant. No mitigation is required.

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?*

Less than Significant Impact:

The closest airport to the project site is the Palmdale Regional Airport/Unites States Air Force (USAF) Plant 42, with associated airport runways located as close as approximately 2.84 miles north of the project site. As shown on the Los Angeles County Airport Land Use Commission's Los Angeles County Airport Land Use Plan Airport Influence Area map for the Palmdale Regional Airport/(USAF Plant 42 (October 2004), the project site is well outside the 65 dBA CNEL noise contour for the airport.[11] 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.

11 https://planning.lacounty.gov/assets/upl/data/pd_alup.pdf

8. REFERENCES

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1974 "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety," EPA/ONAC 550/9-74-004, March 1974.

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2006 FHWA Roadway Construction Noise Model User's Guide. January.

APPENDICES

Appendix A List of Acronyms
Appendix B Definitions of Acoustical Terms
Appendix C Noise Measurement Field Worksheet
Appendix D Construction Noise Modeling
Appendix E FHWA Worksheets
Appendix F SoundPLAN Inputs and Outputs
Appendix G 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 WORKSHEET

Noise Measurement
Field Data

Project Name: Beyond food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24, 2022

Project #: 19524

Noise Measurement #: STNM1 Run Time: 10 minutes (1 x 10 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 2137 E Avemue R, Palmdale, CA 93550

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: Taken along western portion of total project site area w/ high school to west (near associated parking lot), vacant projet site area to north, east, and south with Ave R located further south.

Weather: Sunny, some white cloud. **Settings:** SLOW FAST

Temperature: 100 deg F **Wind:** 8mph **Humidity:** 20% **Terrain:** Flat

Start Time: 11:54 AM **End Time:** 12:04 PM **Run Time:**

Leq: 59.5 dB **Primary Noise Source:** Traffic noise from 146 vehicles passing microphone traveling along E Avenue R.

Lmax 70.7 dB Road Traffic noise from 25th Street East.

L2 65.7 dB **Secondary Noise Sources:** Leaf rustle from breeze. Occasional distant overhead air traffic. School yard

L8 63.7 dB ambiance.

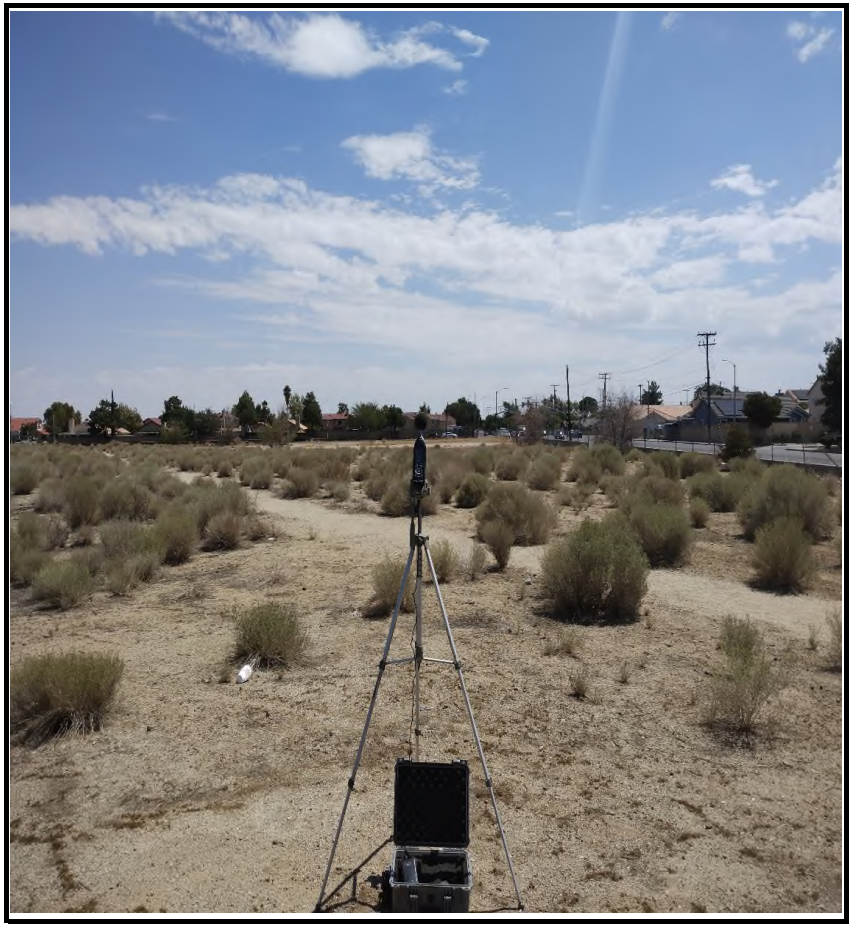
L25 60.7 dB

L50 57.5 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:	8/24/2022		

Noise Measurement
Field Data

PHOTOS:



STNM1 looking E towards 25th Street East. East Avenue R on right of image.



STNM1 looking W towards eastern boundary of Palmdale High School parking lot.

Summary	
File Name on Meter	LxT_Data.046.s
File Name on PC	LxT_0003099-20220824 115445-LxT_Data.046.ldbi
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM1 34°34'23.14"N 118° 5'13.85"W
Job Description	10 minute noise measurement (1 x 10 minutes)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 11:54:45
Stop	2022-08-24 12:04:45
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 11:54:20
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	123.1 dB

Results			
L_{Aeq}	59.5		
LAE	87.3		
EA	60.006 µPa²h		
EA8	2.880 mPa²h		
EA40	14.401 mPa²h		
$L_{Apeak\ (max)}$	2022-08-24 12:02:49	83.9 dB	
L_{ASmax}	2022-08-24 12:02:50	70.7 dB	
L_{ASmin}	2022-08-24 11:59:30	42.3 dB	

		Statistics	
L_{Ceq}	71.7 dB	**LA2.00**	65.7 dB
L_{Aeq}	59.5 dB	**LA8.00**	63.7 dB
L_{Ceq} - L_{Aeq}	12.2 dB	**LA25.00**	60.7 dB
L_{AIeq}	60.9 dB	**LA50.00**	57.5 dB
L_{Aeq}	59.5 dB	**LA66.60**	55.1 dB
L_{AIeq} - L_{Aeq}	1.3 dB	**LA90.00**	49.3 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.046.s	Computer's File Name	LxT_0003099-20220824 115445-LxT_Data.046.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM1 34°34'23.14"N 118° 5'13.85"W
Job Description	10 minute noise measurement (1 x 10 minutes)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 11:54:45	Duration	0:10:00.0
End Time	2022-08-24 12:04:45	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	59.5 dB		
LAE	87.3 dB	SEA	--- dB
EA	60.0 µPa²h	LAFTM5	62.7 dB
EA8	2.9 mPa²h		
EA40	14.4 mPa²h		
LA_{peak}	83.9 dB	2022-08-24 12:02:49	
LAS_{max}	70.7 dB	2022-08-24 12:02:50	
LAS_{min}	42.3 dB	2022-08-24 11:59:30	
LA_{eq}	59.5 dB		
LC_{eq}	71.7 dB	LC_{eq} - LA_{eq}	12.2 dB
LAI_{eq}	60.9 dB	LAI_{eq} - LA_{eq}	1.3 dB

Exceedances	Count	Duration
LAS > 65.0 dB	5	0:00:32.7
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

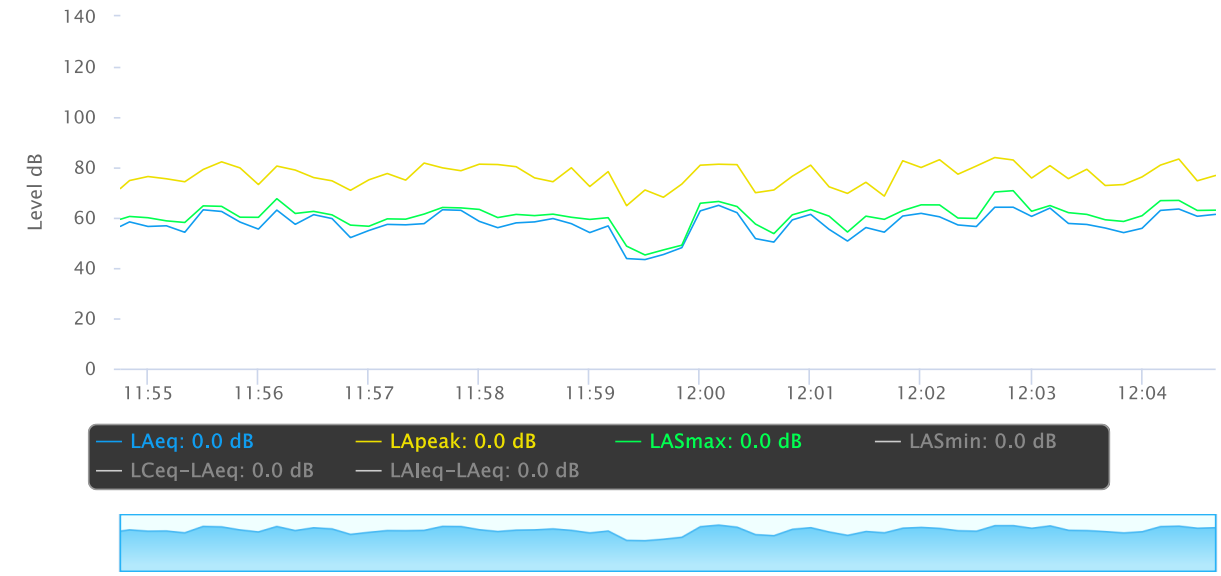
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	59.5 dB		71.7 dB		--- dB	
$L_{S(max)}$	70.7 dB	2022-08-24 12:02:50	--- dB		--- dB	
$L_{S(min)}$	42.3 dB	2022-08-24 11:59:30	--- dB		--- dB	
$L_{Peak(max)}$	83.9 dB	2022-08-24 12:02:49	--- dB		--- dB	

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

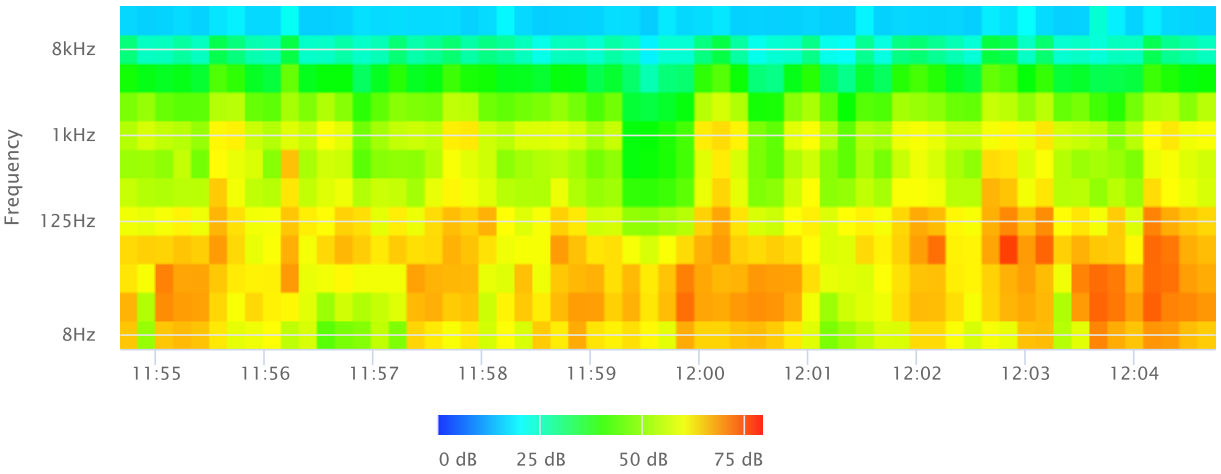
Statistics

LAS 2.0	65.7 dB
LAS 8.0	63.7 dB
LAS 25.0	60.7 dB
LAS 50.0	57.5 dB
LAS 66.6	55.1 dB
LAS 90.0	49.3 dB

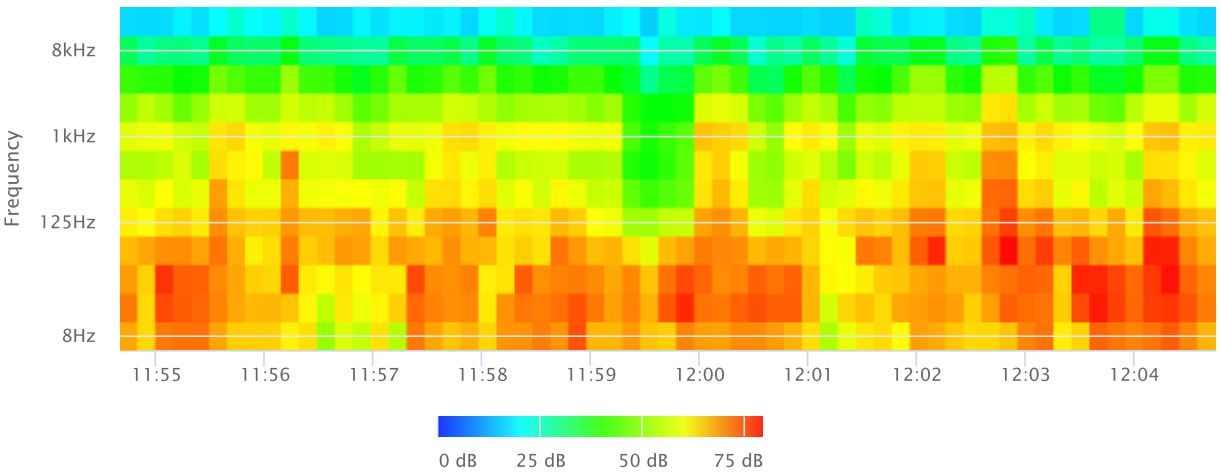
Time History



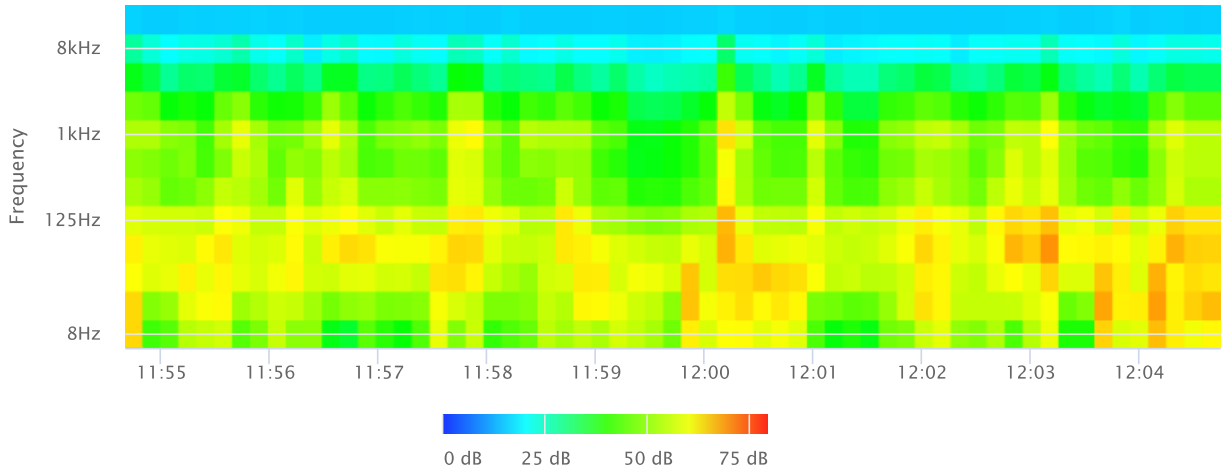
OBA 1/1 Leq



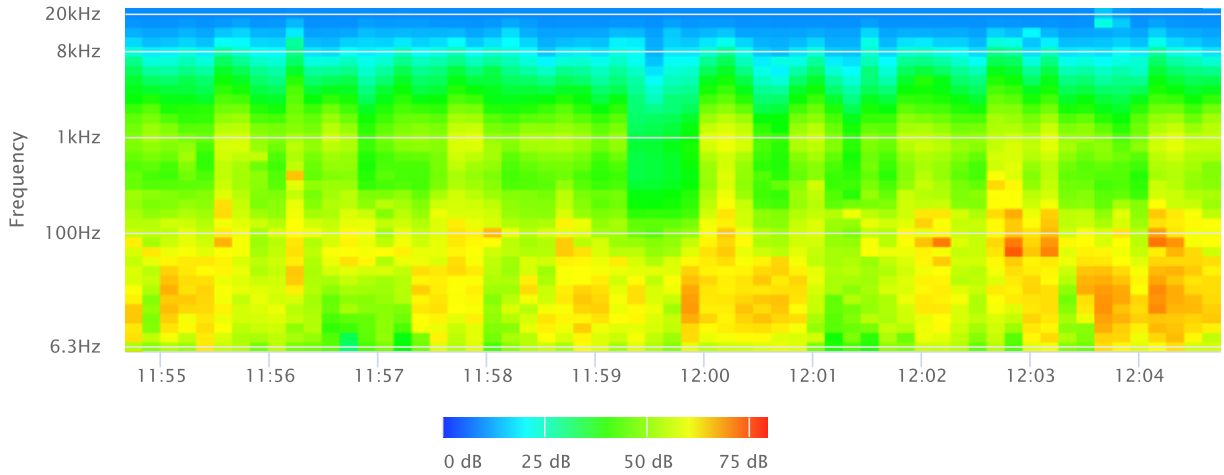
OBA 1/1 Lmax



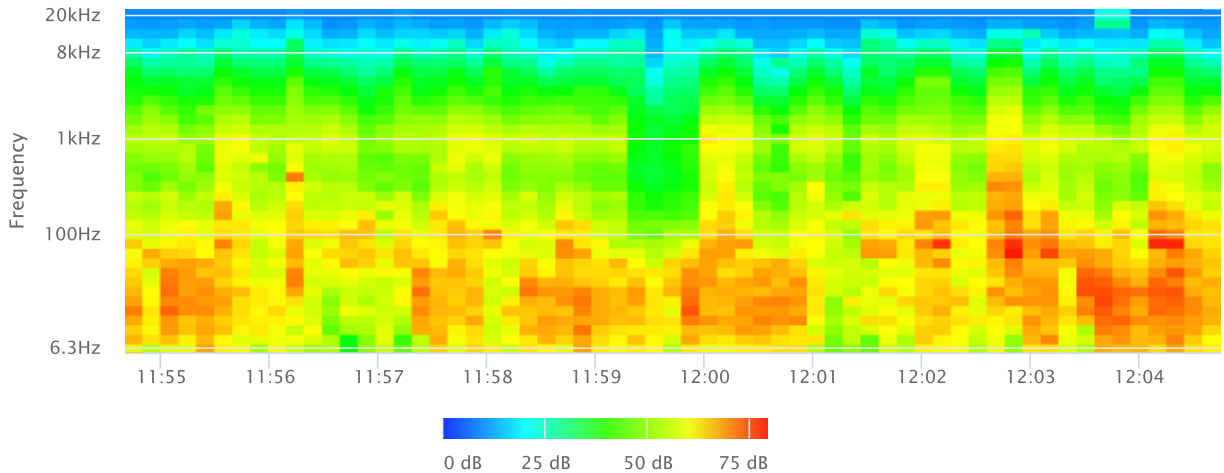
OBA 1/1 Lmin



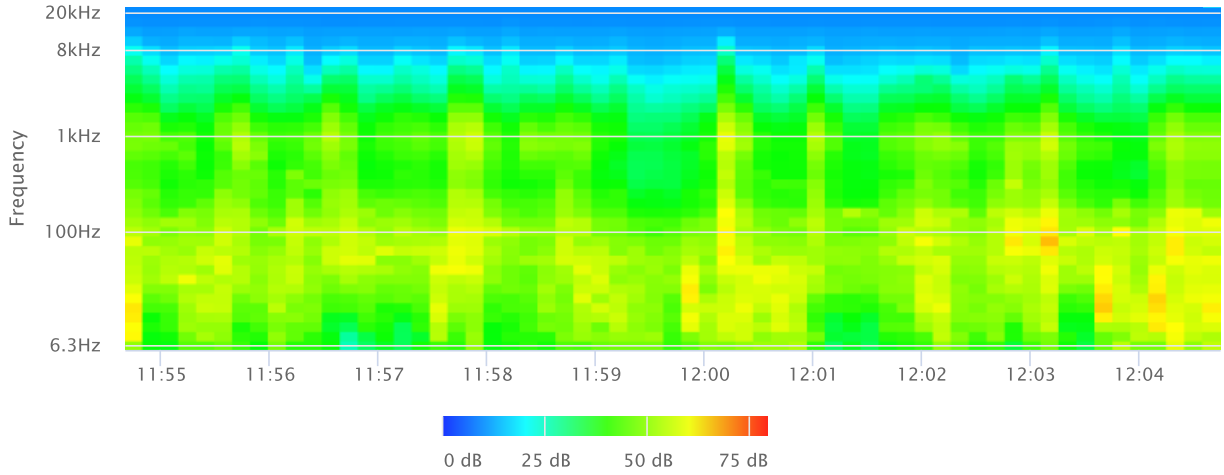
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
11:55
11:56
11:57
11:58
11:59
12:00
12:01
12:02
12:03
12:04
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24, 2022

Project #: 19524

Noise Measurement #: STNM2 Run Time: 10 minutes (1 x 10 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: Apartment X, 38121 25th Street East, Palmdale, CA 93550

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: Multi-family residneital parking area/roadways surrouding to north,east, & west with residences further north and vacant project site to south.

Weather: Sunny. Some white cloud. **Settings:** SLOW FAST

Temperature: 100 deg F **Wind:** 8mph **Humidity:** 20% **Terrain:** Flat

Start Time: 12:19 PM **End Time:** 12:29 PM **Run Time:**

Leq: 53.6 dB **Primary Noise Source:** Traffic noise from vehicles traveling along E Avenue R & 25th Street East .

Lmax 68.2 dB 3 vehicles passed microphone along access rosd during 10 minute measurement.

L2 61.8 dB **Secondary Noise Sources:** Leaf rustle from breeze. Occasional distant overhead air traffic. School yard

L8 55.4 dB ambiance. Residential ambiance.

L25 52.3 dB

L50 50.7 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:	8/24/2022		

Noise Measurement
Field Data

PHOTOS:



STNM2 looking N between multifamily residences (Canyon Creek Apartments, 38121 25th Street East, Palmdale).



STNM2 looking E along access road intersecting with 25th Street East, Palmdale.

Summary	
File Name on Meter	LxT_Data.047.s
File Name on PC	LxT_0003099-20220824 121921-LxT_Data.047.ld
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM2 34°34'26.44"N 118° 5'9.31"W
Job Description	10 minute noise measurement (1 x 10 minutes)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 12:19:21
Stop	2022-08-24 12:29:21
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 12:18:52
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	123.1 dB

Results			
LA_{eq}	53.6		
LAE	81.4		
EA	15.38929 µPa²h		
EA8	738.6859 µPa²h		
EA40	3.693429 mPa²h		
$LA_{peak\ (max)}$	2022-08-24 12:24:07	82.7 dB	
LAS_{max}	2022-08-24 12:23:18	68.2 dB	
LAS_{min}	2022-08-24 12:21:15	45.6 dB	

		Statistics	
LC_{eq}	70.4 dB	**LA2.00**	61.8 dB
LA_{eq}	53.6 dB	**LA8.00**	55.4 dB
LC_{eq} - LA_{eq}	16.8 dB	**LA25.00**	52.3 dB
LAI_{eq}	55.3 dB	**LA50.00**	50.7 dB
LA_{eq}	53.6 dB	**LA66.60**	49.9 dB
LAI_{eq} - LA_{eq}	1.7 dB	**LA90.00**	47.9 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.047.s	Computer's File Name	LxT_0003099-20220824 121921-LxT_Data.047.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM2 34°34'26.44"N 118° 5'9.31"W
Job Description	10 minute noise measurement (1 x 10 minutes)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 12:19:21	Duration	0:10:00.0
End Time	2022-08-24 12:29:21	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	53.6 dB		
LAE	81.4 dB	SEA	--- dB
EA	15.4 µPa²h	LAFTM5	57.6 dB
EA8	738.7 µPa²h		
EA40	3.7 mPa²h		
LA_{peak}	82.7 dB	2022-08-24 12:24:07	
LAS_{max}	68.2 dB	2022-08-24 12:23:18	
LAS_{min}	45.6 dB	2022-08-24 12:21:15	
LA_{eq}	53.6 dB		
LC_{eq}	70.4 dB	LC_{eq} - LA_{eq}	16.8 dB
LAI_{eq}	55.3 dB	LAI_{eq} - LA_{eq}	1.7 dB

Exceedances	Count	Duration
LAS > 65.0 dB	2	0:00:08.6
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

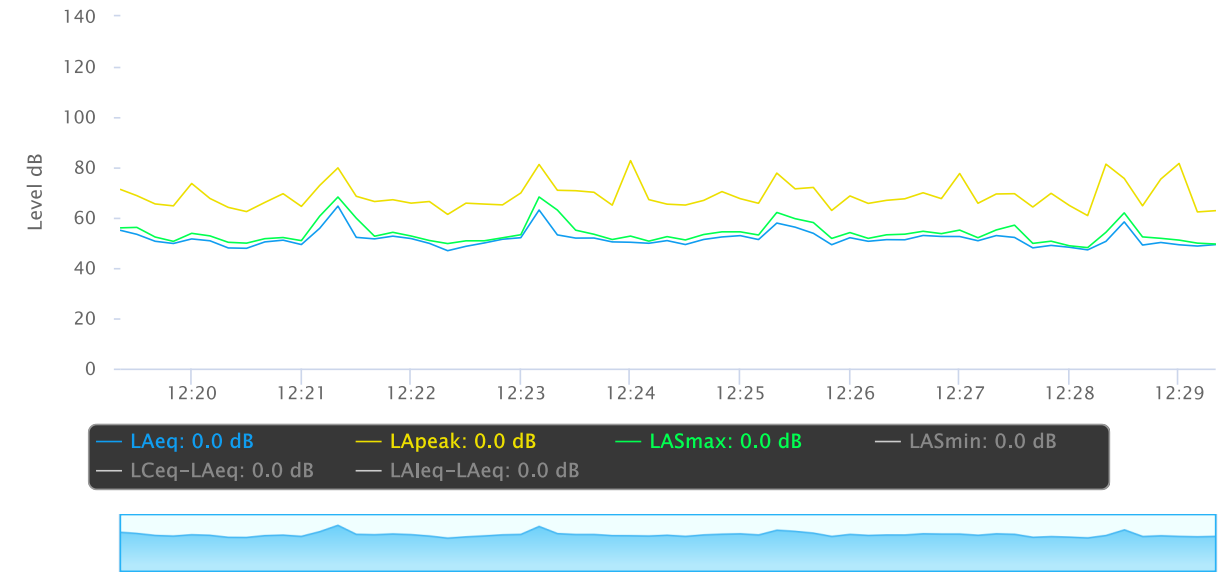
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	53.6 dB		70.4 dB		--- dB	
$L_{S(max)}$	68.2 dB	2022-08-24 12:23:18	--- dB		--- dB	
$L_{S(min)}$	45.6 dB	2022-08-24 12:21:15	--- dB		--- dB	
$L_{Peak(max)}$	82.7 dB	2022-08-24 12:24:07	--- dB		--- dB	

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

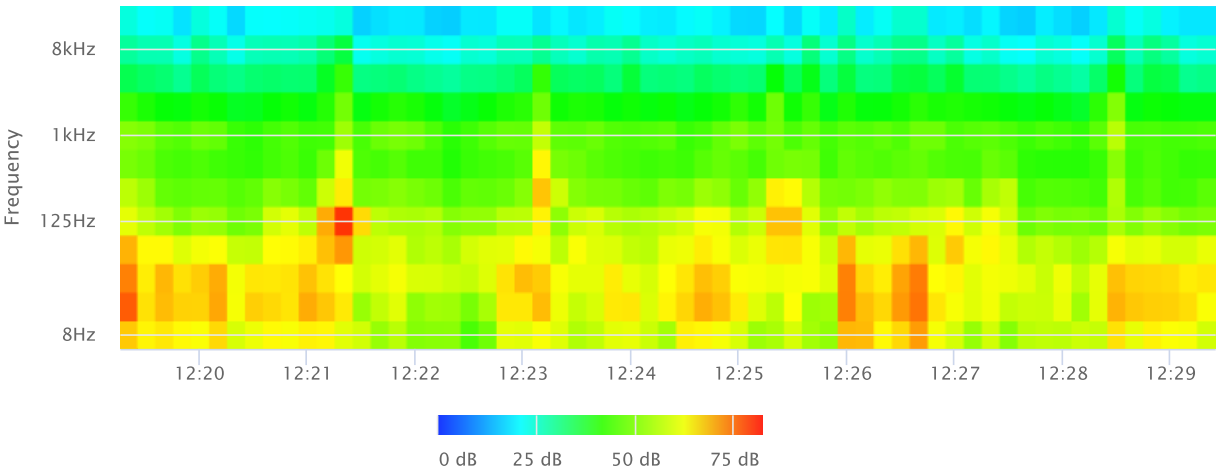
Statistics

LAS 2.0	61.8 dB
LAS 8.0	55.4 dB
LAS 25.0	52.3 dB
LAS 50.0	50.7 dB
LAS 66.6	49.9 dB
LAS 90.0	47.9 dB

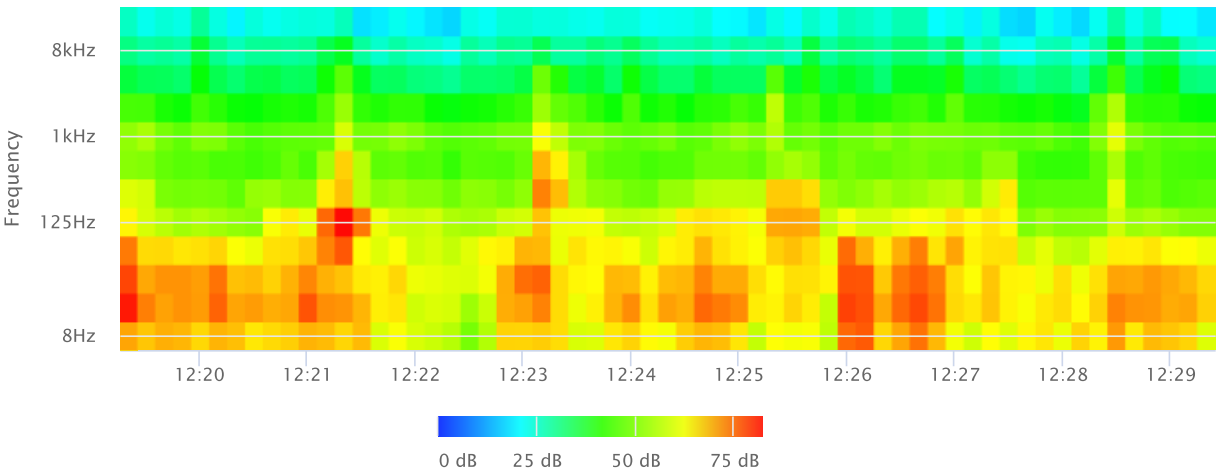
Time History



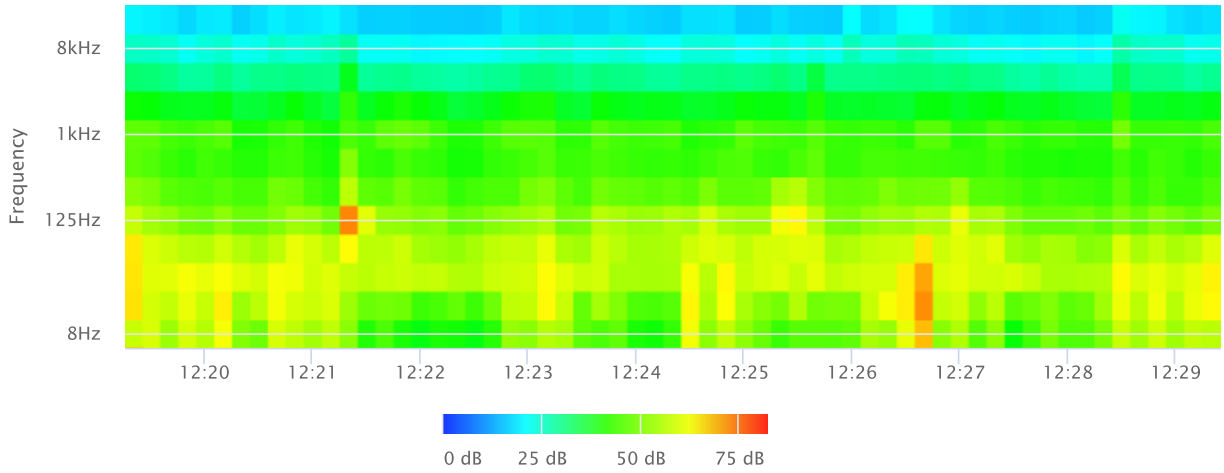
OBA 1/1 Leq



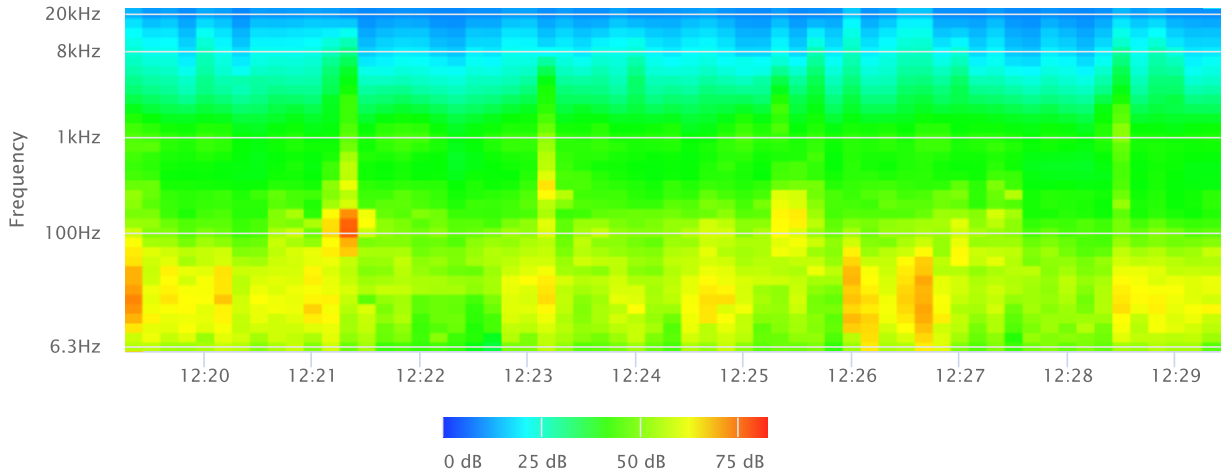
OBA 1/1 Lmax



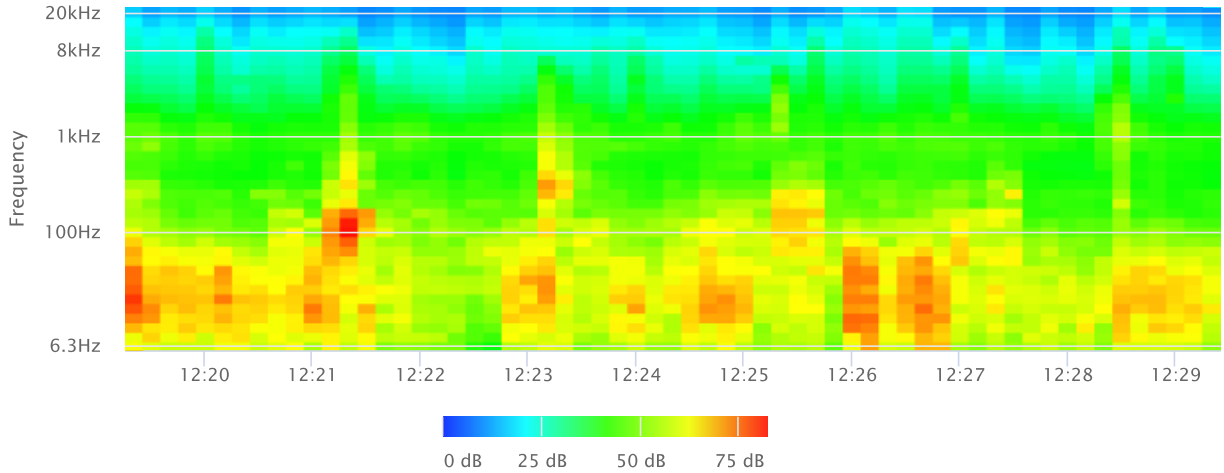
OBA 1/1 Lmin



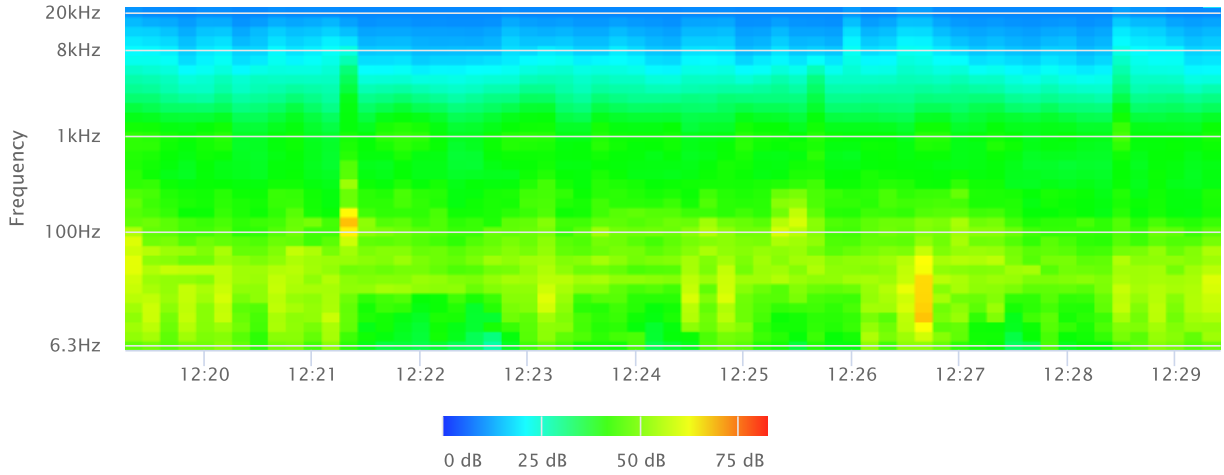
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
12:20
12:21
12:22
12:23
12:24
12:25
12:26
12:27
12:28
12:29
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24, 2022

Project #: 19524

Noise Measurement #: STNM3 Run Time: 10 minutes (1 x 10 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 2506 East Avenue Q-12, Palmdale, CA 93550

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: Residential uses to east, parking and drive areas to residential to north & northeast with residences further north, Avenue Q-12 to south with construction site further south, and Ave 25 to west.

Weather: Sunny. Some white cloud. **Settings:** SLOW FAST

Temperature: 100 deg F **Wind:** 8mph **Humidity:** 20% **Terrain:** Flat

Start Time: 12:49 PM **End Time:** 12:59 PM **Run Time:**

Leq: 58.7 dB **Primary Noise Source:** Traffic noise from vehicles traveling along 25th Street East & East Avenue Q-12.

Lmax 69.9 dB

L2 64.1 dB **Secondary Noise Sources:** Leaf rustle from breeze. Occasional distant overhead air traffic. Residential

L8 62.4 dB ambiance.

L25 60.0 dB

L50 56.9 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

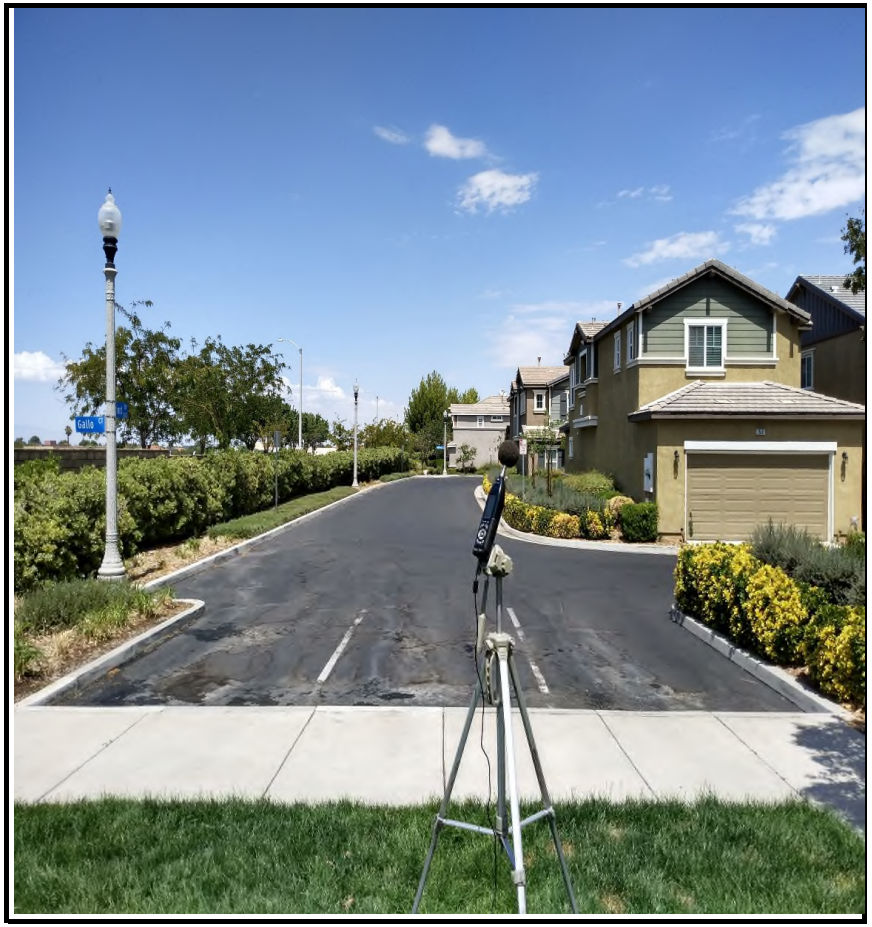
FIELD CALIBRATION DATE: 8/24/2022

Noise Measurement
Field Data

PHOTOS:



STNM3 looking S & SE across East Avenue Q-12 towards consruction site.
Residence 2506 East Avenue Q-12, Palmdale on the left side of the image.



STNM3 looking N across Gallo Ct and down Pinot Wy.

Summary	
File Name on Meter	LxT_Data.048.s
File Name on PC	LxT_0003099-20220824 124905-LxT_Data.048.ldl
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM3 34°34'33.05"N 118° 5'5.09"W
Job Description	10 minute noise measurement (1 x 10 minutes)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 12:49:05
Stop	2022-08-24 12:59:05
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 12:48:42
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	123.1 dB

Results		
L_{Aeq}	58.7	
LAE	86.5	
EA	49.32282	µPa²h
EA8	2.367496	mPa²h
EA40	11.83748	mPa²h
$L_{Apeak\ (max)}$	2022-08-24 12:57:29	90.8 dB
L_{ASmax}	2022-08-24 12:57:17	69.9 dB
L_{ASmin}	2022-08-24 12:56:08	49.0 dB

		Statistics	
L_{Ceq}	71.0 dB	**LA2.00**	64.1 dB
L_{Aeq}	58.7 dB	**LA8.00**	62.4 dB
L_{Ceq} - L_{Aeq}	12.4 dB	**LA25.00**	60.0 dB
L_{AIeq}	61.5 dB	**LA50.00**	56.9 dB
L_{Aeq}	58.7 dB	**LA66.60**	55.3 dB
L_{AIeq} - L_{Aeq}	2.9 dB	**LA90.00**	52.0 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.048.s	Computer's File Name	LxT_0003099-20220824 124905-LxT_Data.048.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM3 34°34'33.05"N 118° 5'5.09"W
Job Description	10 minute noise measurement (1 x 10 minutes)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 12:49:05	Duration	0:10:00.0
End Time	2022-08-24 12:59:05	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	58.7 dB		
LAE	86.5 dB	SEA	--- dB
EA	49.3 µPa²h	LAFTM5	63.0 dB
EA8	2.4 mPa²h		
EA40	11.8 mPa²h		
LA_{peak}	90.8 dB	2022-08-24 12:57:29	
LAS_{max}	69.9 dB	2022-08-24 12:57:17	
LAS_{min}	49.0 dB	2022-08-24 12:56:08	
LA_{eq}	58.7 dB		
LC_{eq}	71.0 dB	LC_{eq} - LA_{eq}	12.4 dB
LAI_{eq}	61.5 dB	LAI_{eq} - LA_{eq}	2.9 dB

Exceedances	Count	Duration
LAS > 65.0 dB	2	0:00:10.3
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

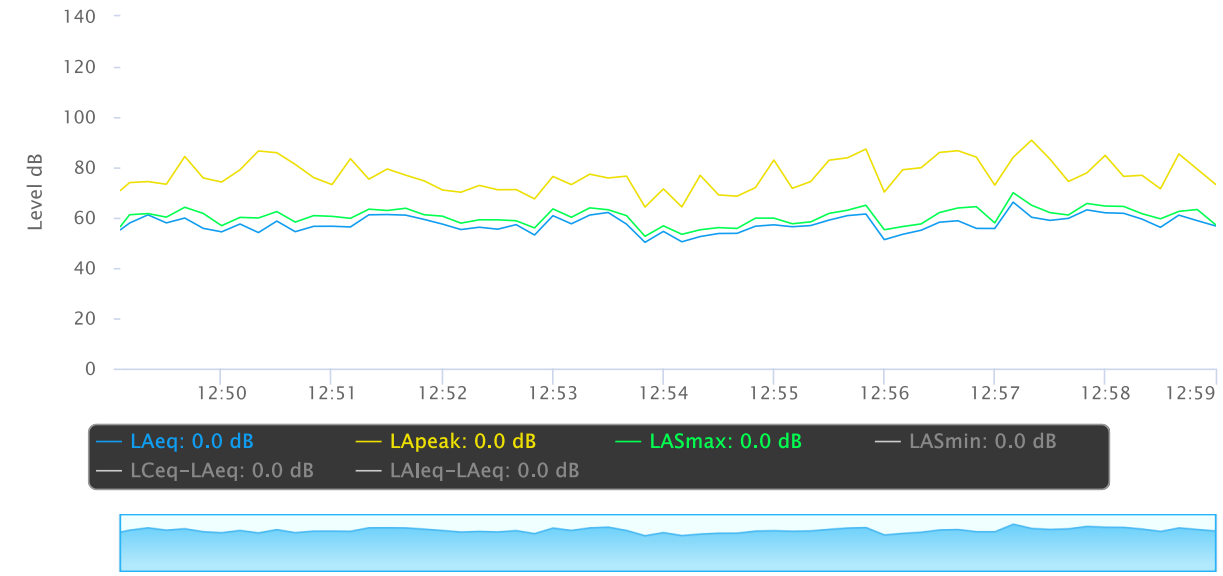
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	58.7 dB		71.0 dB		--- dB	
$L_{S(max)}$	69.9 dB	2022-08-24 12:57:17	--- dB		--- dB	
$L_{S(min)}$	49.0 dB	2022-08-24 12:56:08	--- dB		--- dB	
$L_{Peak(max)}$	90.8 dB	2022-08-24 12:57:29	--- dB		--- dB	

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

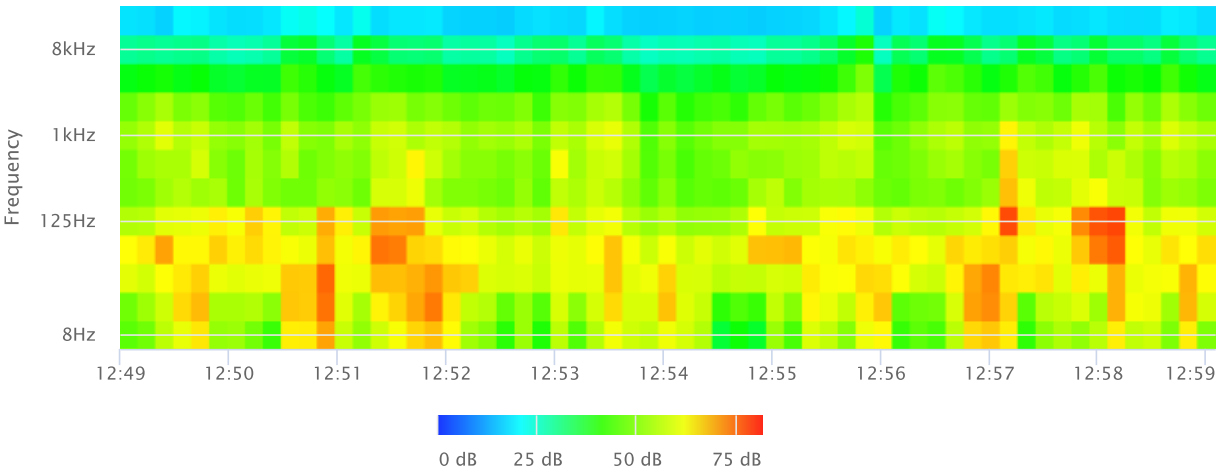
Statistics

LAS 2.0	64.1 dB
LAS 8.0	62.4 dB
LAS 25.0	60.0 dB
LAS 50.0	56.9 dB
LAS 66.6	55.3 dB
LAS 90.0	52.0 dB

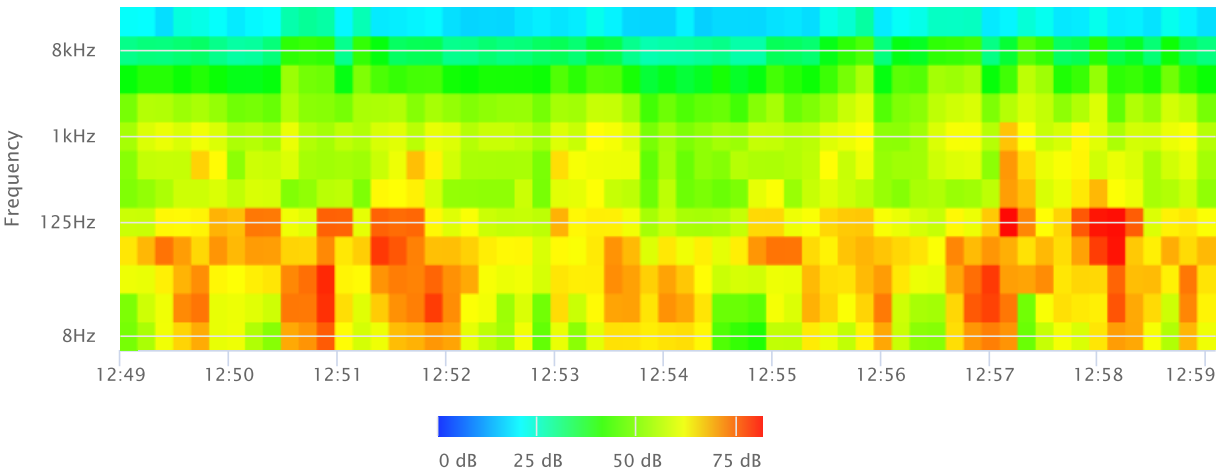
Time History



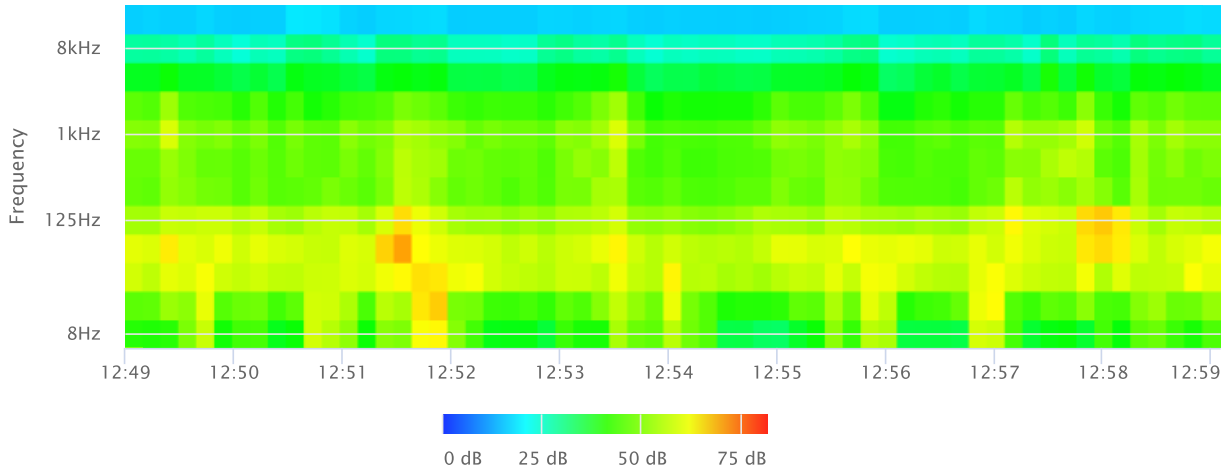
OBA 1/1 Leq



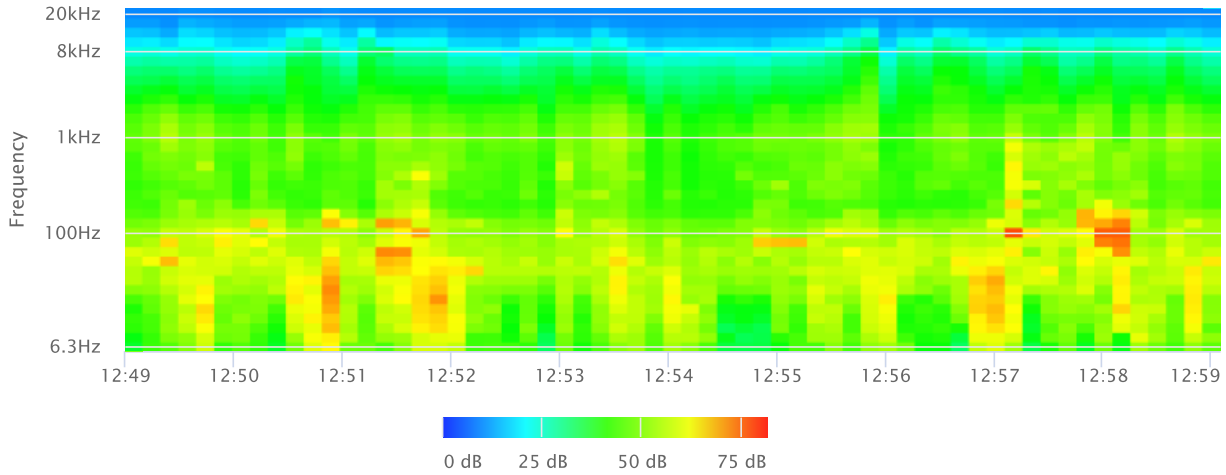
OBA 1/1 Lmax



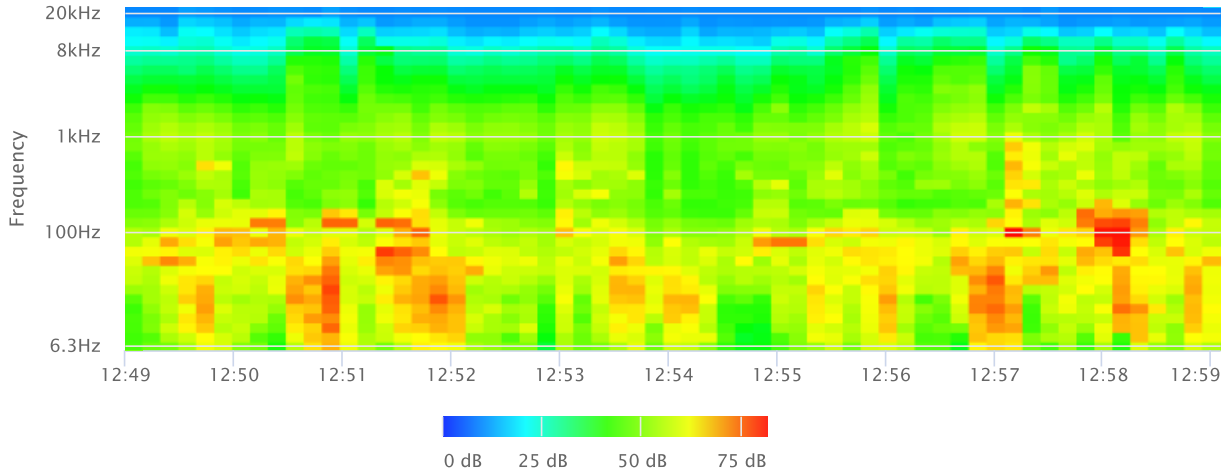
OBA 1/1 Lmin



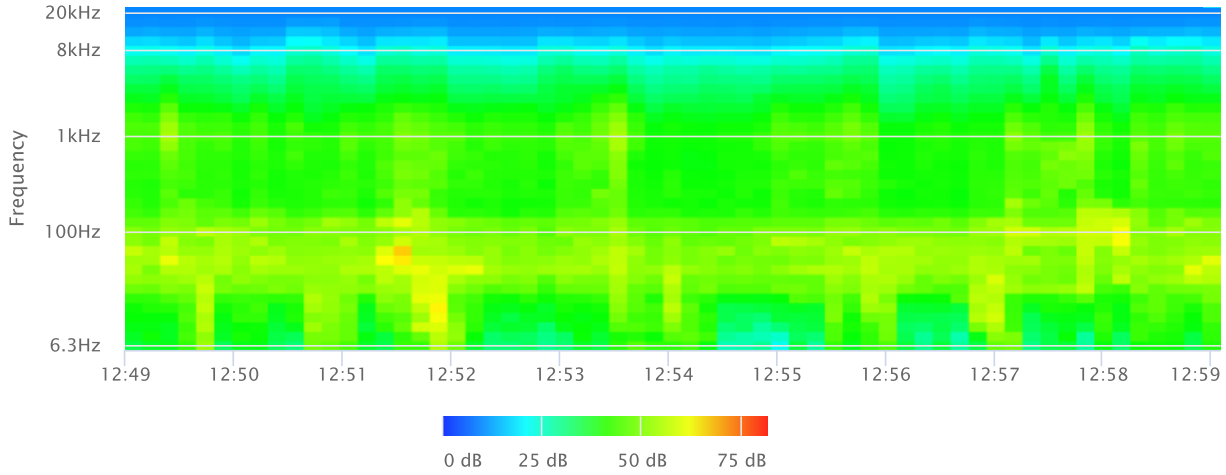
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
12:49
12:50
12:51
12:52
12:53
12:54
12:55
12:56
12:57
12:58
12:59
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24, 2022

Project #: 19524

Noise Measurement #: STNM4 Run Time: 10 minutes (1 x 10 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 38003 Jeri Lane, Palmdale, CA 93550

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: Ave 25 to west with project site further west, block wall to east w/ single-family residential further east, & Ave R to south.

Weather: Sunny. Some white cloud. **Settings:** SLOW FAST

Temperature: 100 deg F **Wind:** 8mph **Humidity:** 20% **Terrain:** Flat

Start Time: 1:37 PM **End Time:** 1:47 PM **Run Time:**

Leq: 71.4 dB **Primary Noise Source:** Traffic noise from the 164 vehicles traveling along 25th Street East.

Lmax 86.7 dB Traffic noise from East Avenue R.

L2 80.2 dB **Secondary Noise Sources:** Leaf rustle from breeze. Occasional distant overhead air traffic. Residential

L8 75.8 dB ambiance.

L25 70.0 dB

L50 65.4 dB

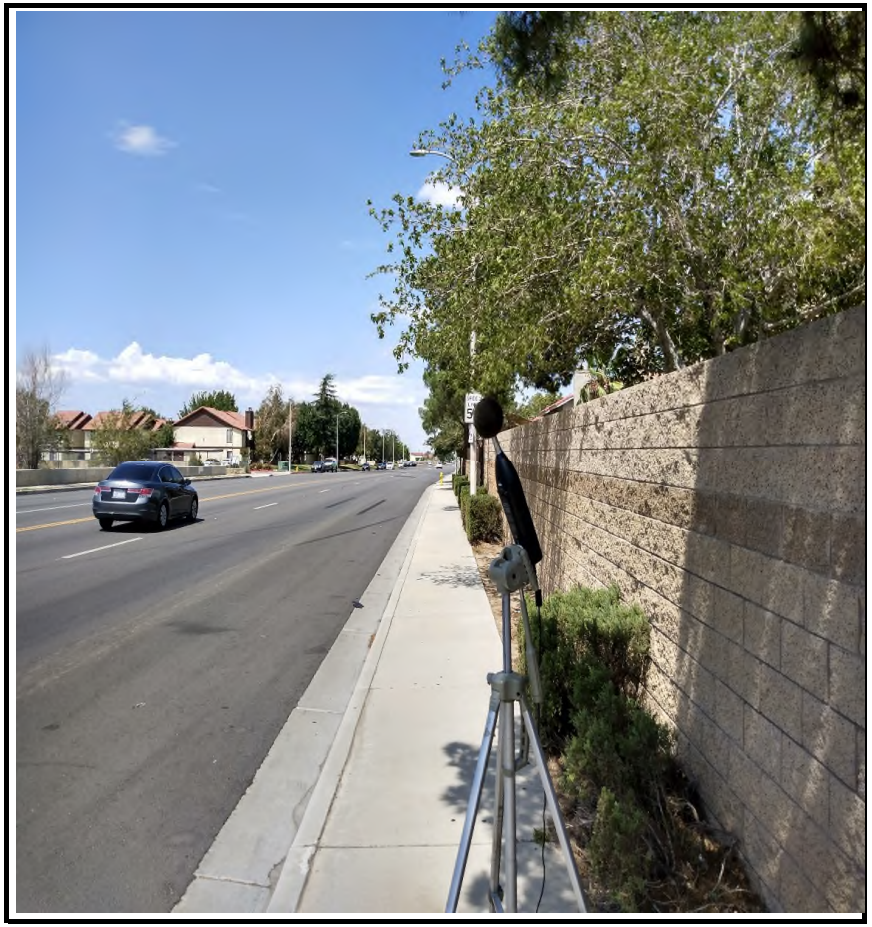
NOISE METER:	SoundTrack LXT Class 1	**CALIBRATOR:**	Larson Davis CA 250
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LXT1	**MODEL:**	CA 250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
FACTORY CALIBRATION DATE:	11/17/2021	**FACTORY CALIBRATION DATE:**	11/18/2021
FIELD CALIBRATION DATE:	8/24/2022		

Noise Measurement
Field Data

PHOTOS:



STNM4 looking S down 25th Street E towards intersection with E Ave R. Cinderblock wall on the left is ~6.5 feet tall.



STNM4 looking N along 25th Street East towards East Palmdale Boulevard intersection.

Summary	
File Name on Meter	LxT_Data.049.s
File Name on PC	LxT_0003099-20220824 133704-LxT_Data.049.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM4 34°34'23.34"N 118° 5'5.43"W
Job Description	10 minute noise measurement (1 x 10 minutes)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 13:37:04
Stop	2022-08-24 13:47:04
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 13:36:39
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	123.2 dB

Results			
LA_{eq}	71.4		
LAE	99.2		
EA	920.8481	µPa²h	
EA8	44.20071	mPa²h	
EA40	221.0036	mPa²h	
$LA_{peak\ (max)}$	2022-08-24 13:40:46	104.8	dB
LAS_{max}	2022-08-24 13:40:47	86.7	dB
LAS_{min}	2022-08-24 13:46:42	56.9	dB

			Statistics		
LC_{eq}	81.1	dB	**LA2.00**	80.2	dB
LA_{eq}	71.4	dB	**LA8.00**	75.8	dB
LC_{eq} - LA_{eq}	9.7	dB	**LA25.00**	70.0	dB
LAI_{eq}	73.0	dB	**LA50.00**	65.4	dB
LA_{eq}	71.4	dB	**LA66.60**	63.2	dB
LAI_{eq} - LA_{eq}	1.6	dB	**LA90.00**	59.8	dB
Overload Count	0				

Measurement Report

Report Summary

Meter's File Name	LxT_Data.049.s	Computer's File Name	LxT_0003099-20220824 133704-LxT_Data.049.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM4 34°34'23.34"N 118° 5'5.43"W
Job Description	10 minute noise measurement (1 x 10 minutes)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 13:37:04	Duration	0:10:00.0
End Time	2022-08-24 13:47:04	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	71.4 dB		
LAE	99.2 dB	SEA	--- dB
EA	920.8 µPa²h	LAFTM5	75.6 dB
EA8	44.2 mPa²h		
EA40	221.0 mPa²h		
LA_{peak}	104.8 dB	2022-08-24 13:40:46	
LAS_{max}	86.7 dB	2022-08-24 13:40:47	
LAS_{min}	56.9 dB	2022-08-24 13:46:42	
LA_{eq}	71.4 dB		
LC_{eq}	81.1 dB	LC_{eq} - LA_{eq}	9.7 dB
LAI_{eq}	73.0 dB	LAI_{eq} - LA_{eq}	1.6 dB

Exceedances	Count	Duration
LAS > 65.0 dB	16	0:06:02.3
LAS > 85.0 dB	2	0:00:05.6
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

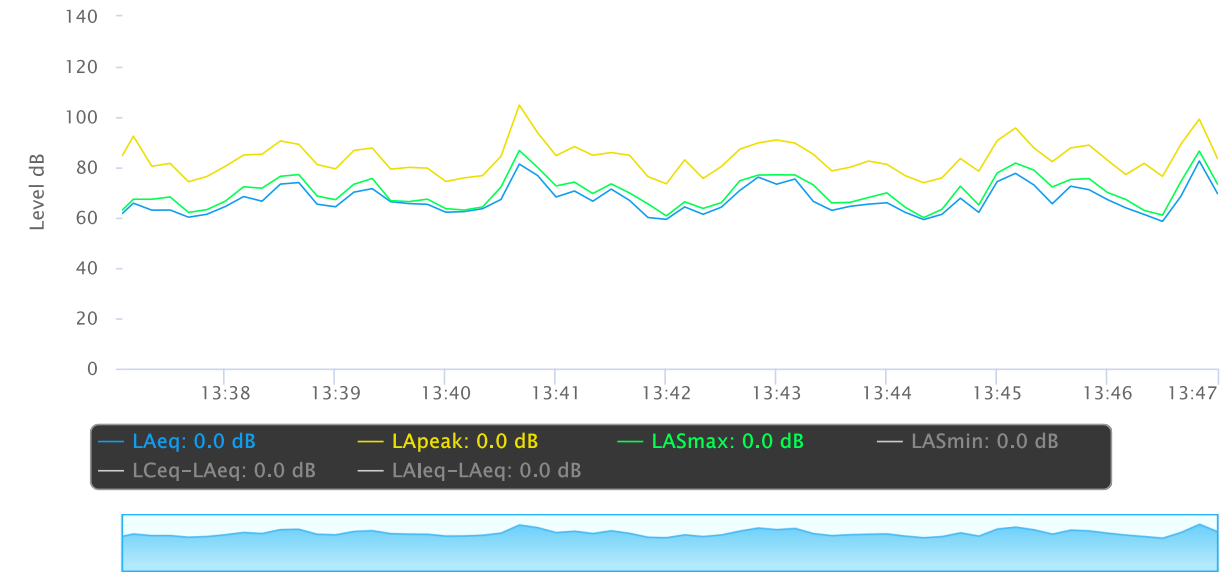
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	71.4 dB		81.1 dB		--- dB	
$L_{S(max)}$	86.7 dB	2022-08-24 13:40:47	--- dB		--- dB	
$L_{S(min)}$	56.9 dB	2022-08-24 13:46:42	--- dB		--- dB	
$L_{Peak(max)}$	104.8 dB	2022-08-24 13:40:46	--- dB		--- dB	

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

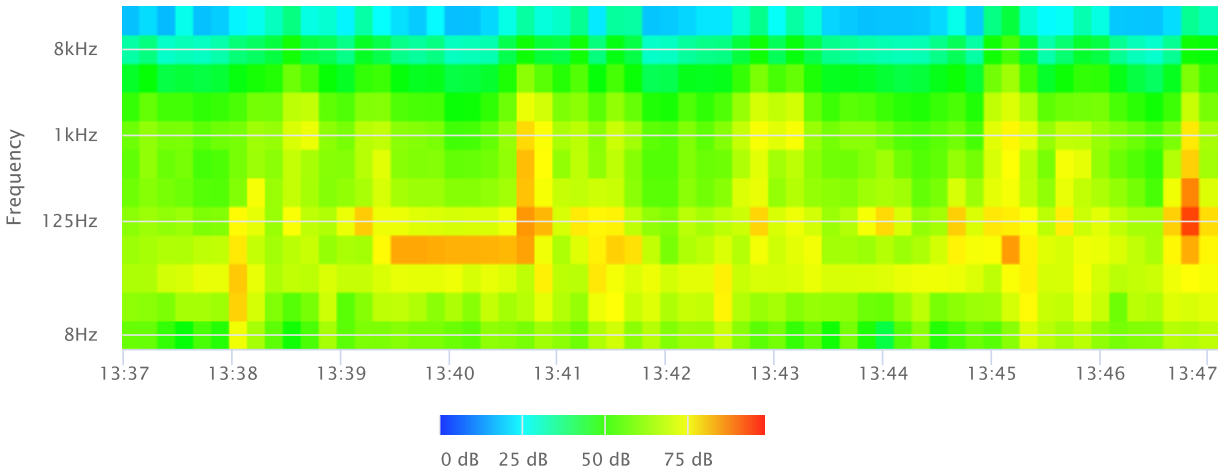
Statistics

LAS 2.0	80.2 dB
LAS 8.0	75.8 dB
LAS 25.0	70.0 dB
LAS 50.0	65.4 dB
LAS 66.6	63.2 dB
LAS 90.0	59.8 dB

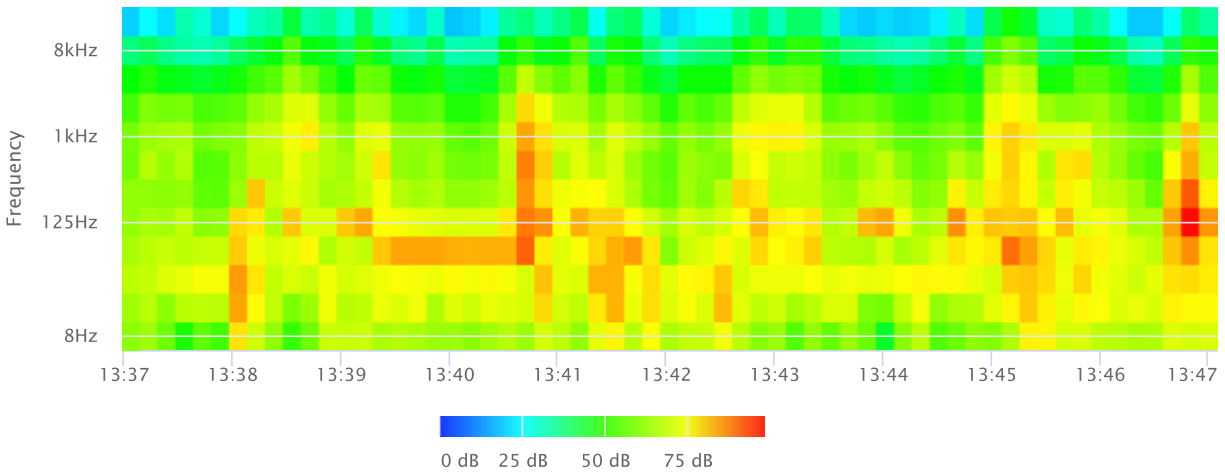
Time History



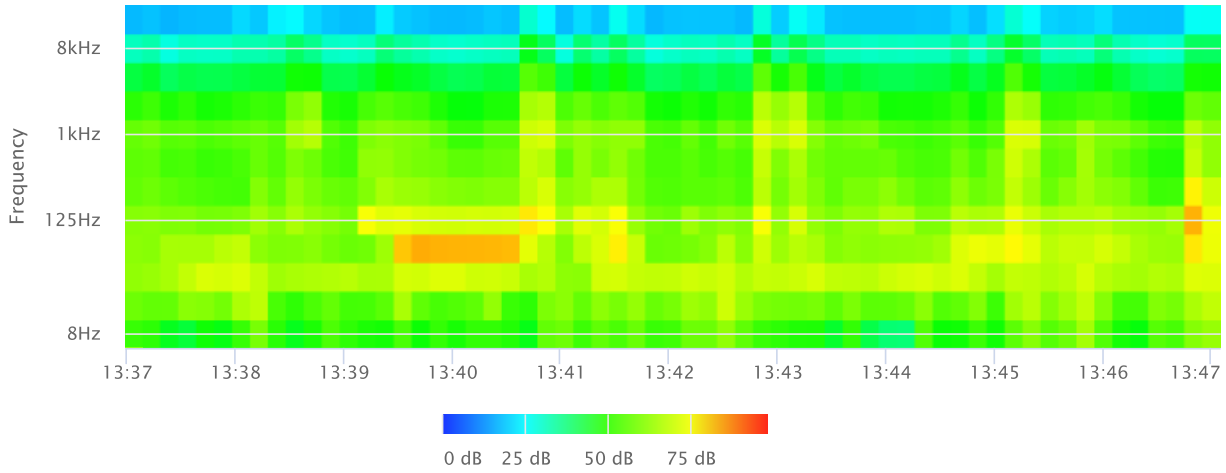
OBA 1/1 Leq



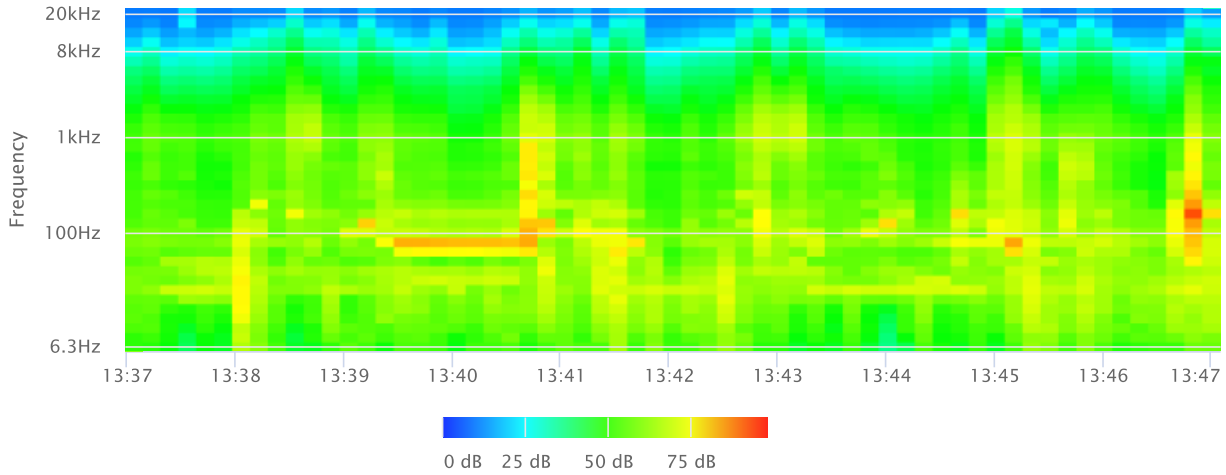
OBA 1/1 Lmax



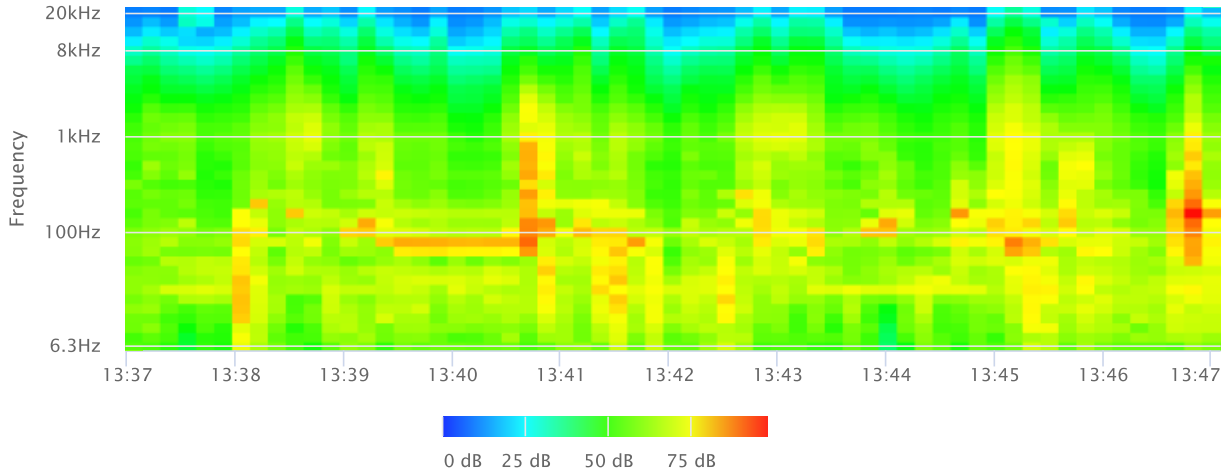
OBA 1/1 Lmin



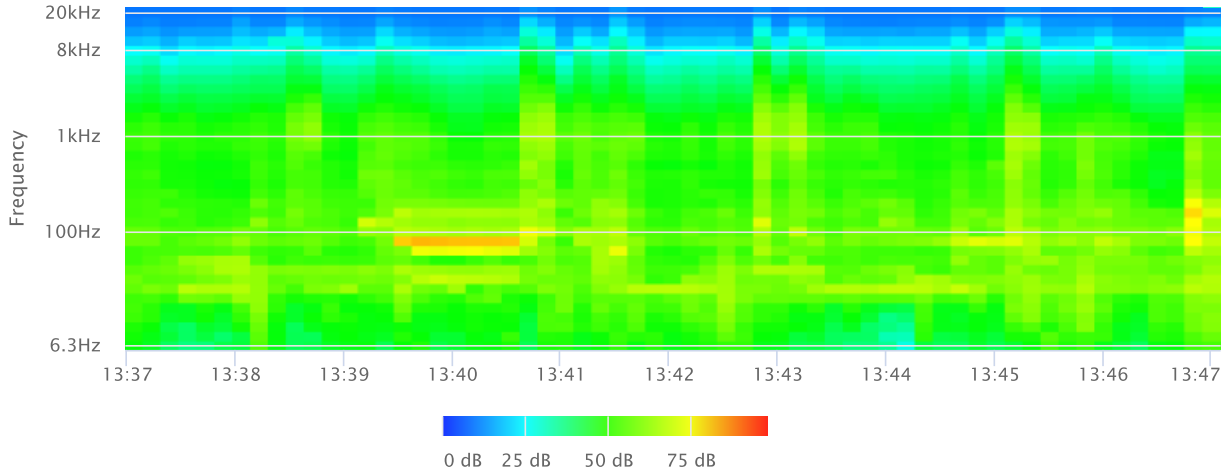
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
13:37
13:38
13:39
13:40
13:41
13:42
13:43
13:44
13:45
13:46
13:47
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24, 2022

Project #: 19524

Noise Measurement #: STNM5 Run Time: 10 minutes (1 x 10 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 2504 East Avenue R, Palmdale, CA 93550

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: 25th S to west w/ single-family residential further west, Ave R to N, & block wall to east w/ single-family residential further east.

Weather: Sunny. Some white cloud. **Settings:** SLOW FAST

Temperature: 100 deg F **Wind:** 8mph **Humidity:** 20% **Terrain:** Flat

Start Time: 1:58 PM **End Time:** 2:08 PM **Run Time:**

Leq: 71.1 dB **Primary Noise Source:** Traffic noise from the 194 vehicles traveling along 25th Street East.

Lmax 83.7 dB Traffic noise from East Avenue R.

L2 78.3 dB **Secondary Noise Sources:** Leaf rustle from breeze. Occasional distant overhead air traffic. Residential

L8 75.1 dB ambiance.

L25 72.2 dB

L50 67.8 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:	8/24/2022		

Noise Measurement
Field Data

PHOTOS:



STNM5 looking NNW up 25th Street East towards East Avenue R intersection.



STNM5 looking S down 25th Street East. Cinderblock wall on the left is ~7 feet tall.

Summary	
File Name on Meter	LxT_Data.050.s
File Name on PC	LxT_0003099-20220824 135827-LxT_Data.050.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM5 34°34'20.66"N 118° 5'5.31"W
Job Description	10 minute noise measurement (1 x 10 minutes)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 13:58:27
Stop	2022-08-24 14:08:27
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 13:57:49
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	123.1 dB

Results			
LAeq	71.1		
LAE	98.9		
EA	861.5297	µPa²h	
EA8	41.35342	mPa²h	
EA40	206.7671	mPa²h	
LApeak (max)	2022-08-24 14:01:15	102.8	dB
LASmax	2022-08-24 14:01:58	83.7	dB
LASmin	2022-08-24 13:59:42	58.2	dB

			Statistics		
LCeq	81.1	dB	**LA2.00**	78.3	dB
LAeq	71.1	dB	**LA8.00**	75.1	dB
LCeq - LAeq	10.0	dB	**LA25.00**	72.2	dB
LAleq	73.0	dB	**LA50.00**	67.8	dB
LAeq	71.1	dB	**LA66.60**	64.9	dB
LAleq - LAeq	1.9	dB	**LA90.00**	61.4	dB
Overload Count	0				

Measurement Report

Report Summary

Meter's File Name	LxT_Data.050.s	Computer's File Name	LxT_0003099-20220824 135827-LxT_Data.050.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM5 34°34'20.66"N 118° 5'5.31"W
Job Description	10 minute noise measurement (1 x 10 minutes)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 13:58:27	Duration	0:10:00.0
End Time	2022-08-24 14:08:27	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	71.1 dB		
LAE	98.9 dB	SEA	--- dB
EA	861.5 µPa²h	LAFTM5	75.1 dB
EA8	41.4 mPa²h		
EA40	206.8 mPa²h		
LA_{peak}	102.8 dB	2022-08-24 14:01:15	
LAS_{max}	83.7 dB	2022-08-24 14:01:58	
LAS_{min}	58.2 dB	2022-08-24 13:59:42	
LA_{eq}	71.1 dB		
LC_{eq}	81.1 dB	LC_{eq} - LA_{eq}	10.0 dB
LAI_{eq}	73.0 dB	LAI_{eq} - LA_{eq}	1.9 dB

Exceedances	Count	Duration
LAS > 65.0 dB	13	0:07:18.3
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

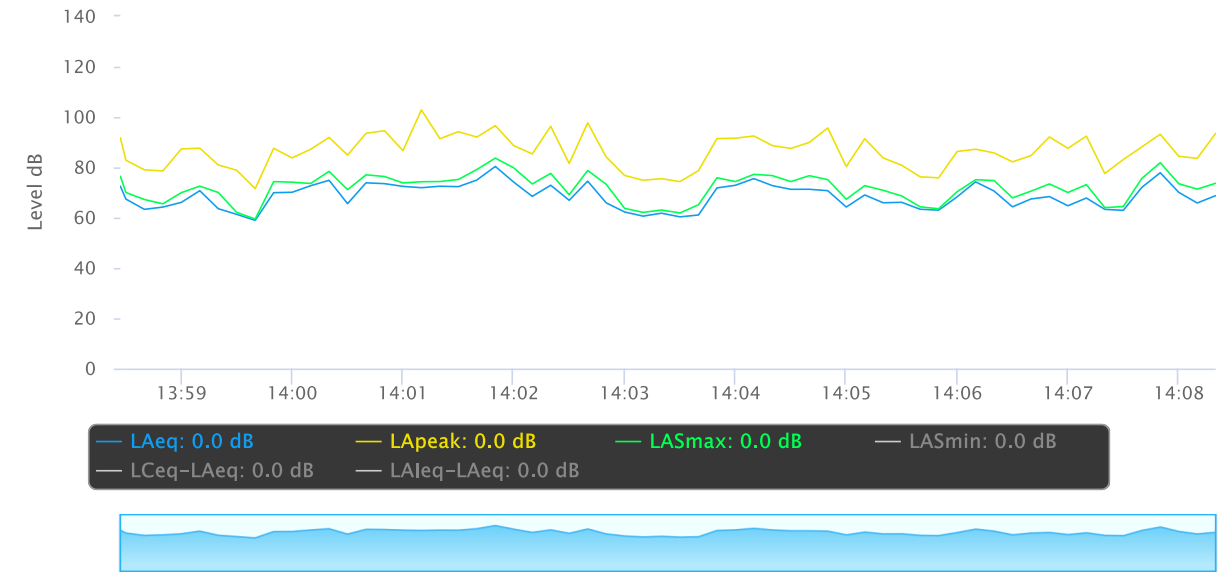
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	71.1 dB		81.1 dB		--- dB	
$L_{S(max)}$	83.7 dB	2022-08-24 14:01:58	--- dB		--- dB	
$L_{S(min)}$	58.2 dB	2022-08-24 13:59:42	--- dB		--- dB	
$L_{Peak(max)}$	102.8 dB	2022-08-24 14:01:15	--- dB		--- dB	

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

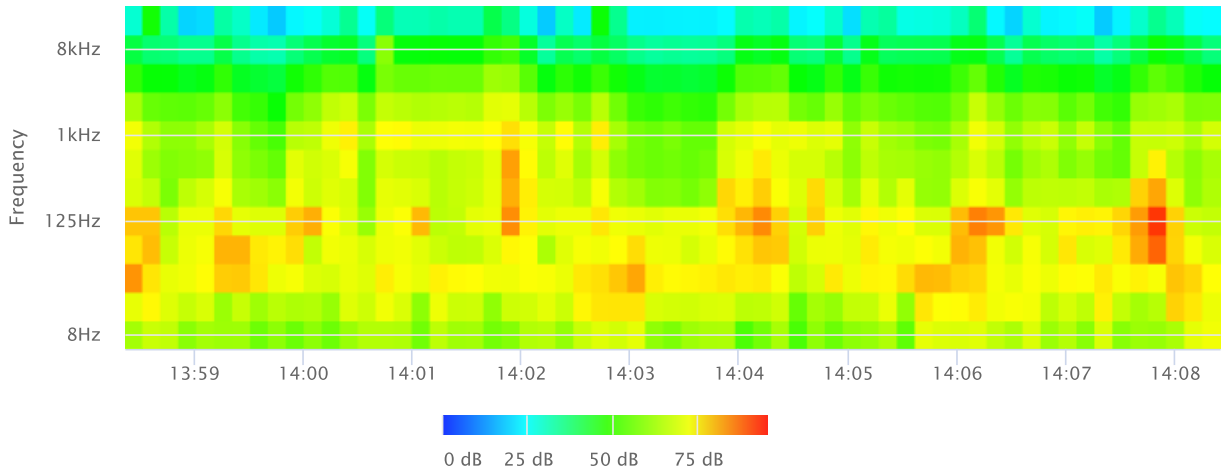
Statistics

LAS 2.0	78.3 dB
LAS 8.0	75.1 dB
LAS 25.0	72.2 dB
LAS 50.0	67.8 dB
LAS 66.6	64.9 dB
LAS 90.0	61.4 dB

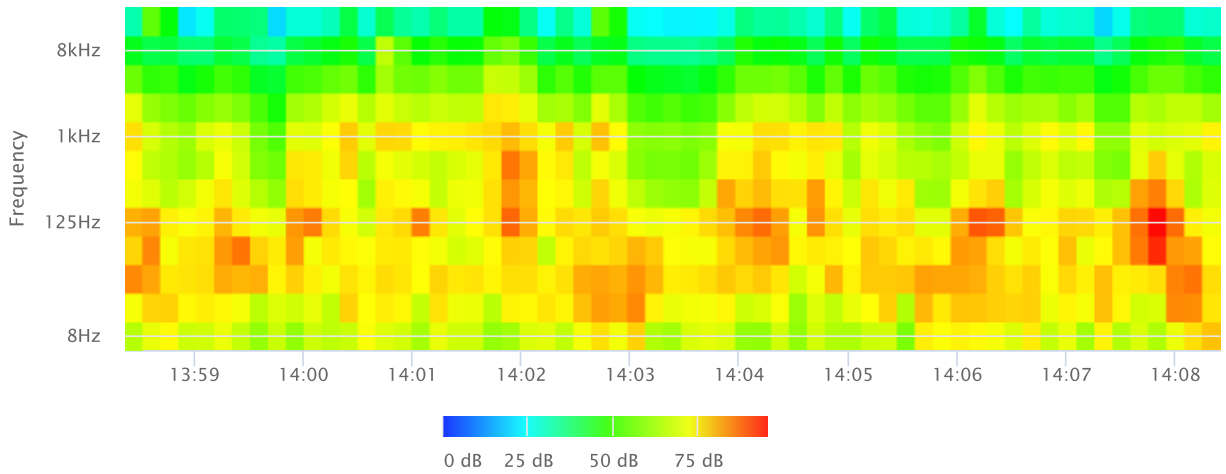
Time History



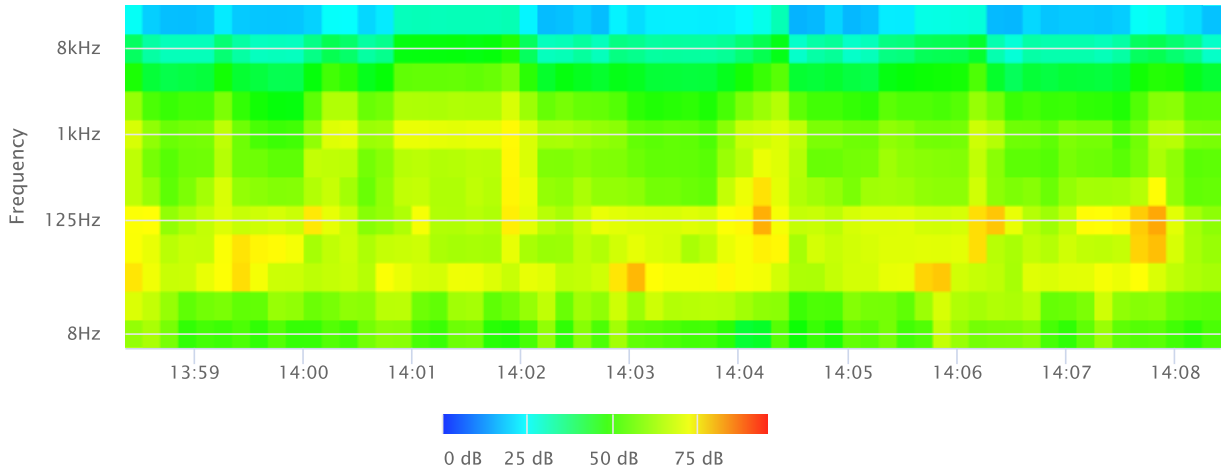
OBA 1/1 Leq



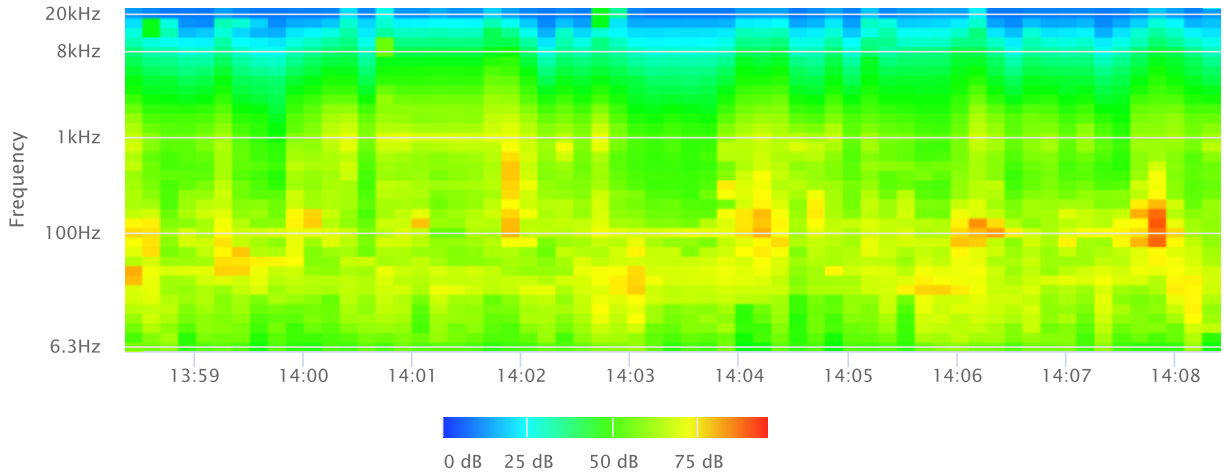
OBA 1/1 Lmax



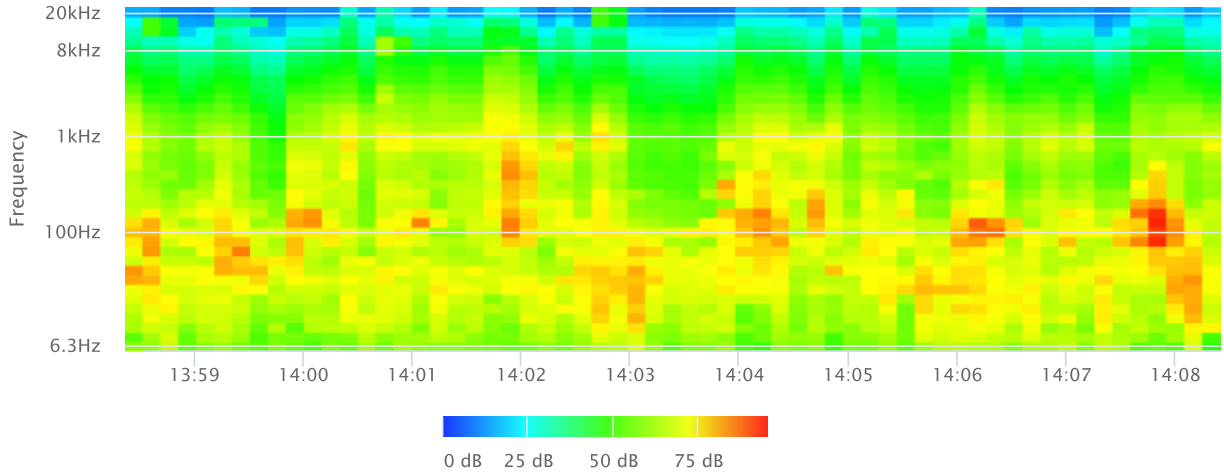
OBA 1/1 Lmin



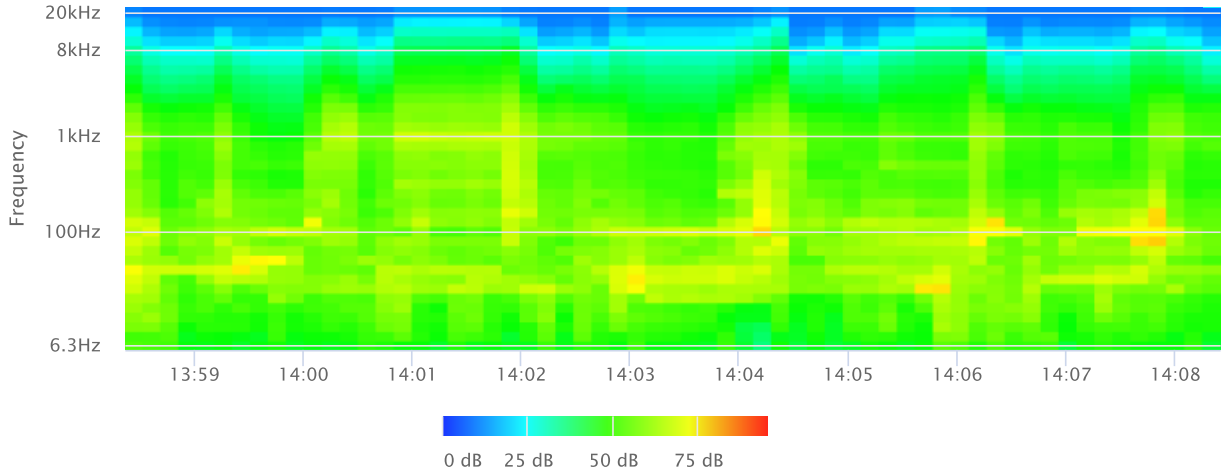
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
13:59
14:00
14:01
14:02
14:03
14:04
14:05
14:06
14:07
14:08
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24, 2022

Project #: 19524

Noise Measurement #: STNM6 Run Time: 10 minutes (1 x 10 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 37954 Vintage Ct, Palmdale, CA 93550

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: Ave R to north w/ vacant project site further north, single-family residnetial to south, & church to southwest.

Weather: Sunny. Some white cloud. **Settings:** SLOW FAST

Temperature: 100 deg F **Wind:** 8mph **Humidity:** 20% **Terrain:** Flat

Start Time: 2:18 PM **End Time:** 2:28 PM **Run Time:**

Leq: 67.5 dB **Primary Noise Source:** Traffic noise from the 186 vehicles traveling along East Avenue R.

Lmax 82.1 dB Traffic noise from 25th Street East.

L2 76.6 dB **Secondary Noise Sources:** Leaf rustle from breeze. Occasional distant overhead air traffic. Residential

L8 71.8 dB ambiance.

L25 66.7 dB

L50 63.1 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:	8/24/2022		

Noise Measurement
Field Data

PHOTOS:



STNM6 looking ENE along East Avenue R towards intersection with 25th Street East.



STNM6 ESE towards garage door of residence 37954 Vintage Ct, Palmdale.

Summary	
File Name on Meter	LxT_Data.051.s
File Name on PC	LxT_0003099-20220824 141811-LxT_Data.051.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM6 34°34'21.44"N 118° 5'7.70"W
Job Description	10 minute noise measurement (1 x 10 minutes)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 14:18:11
Stop	2022-08-24 14:28:11
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 14:17:55
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	123.1 dB

Results			
L_{Aeq}	67.5		
LAE	95.3		
EA	375.7018 µPa²h		
EA8	18.03369 mPa²h		
EA40	90.16845 mPa²h		
$L_{Apeak\ (max)}$	2022-08-24 14:27:10	97.3 dB	
L_{ASmax}	2022-08-24 14:27:11	82.1 dB	
L_{ASmin}	2022-08-24 14:20:21	50.6 dB	
			Statistics
L_{Ceq}	79.1 dB		**LA2.00** 76.6 dB
L_{Aeq}	67.5 dB		**LA8.00** 71.8 dB
L_{Ceq} - L_{Aeq}	11.6 dB		**LA25.00** 66.7 dB
L_{AIeq}	69.1 dB		**LA50.00** 63.1 dB
L_{Aeq}	67.5 dB		**LA66.60** 61.1 dB
L_{AIeq} - L_{Aeq}	1.6 dB		**LA90.00** 55.7 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.051.s	Computer's File Name	LxT_0003099-20220824 141811-LxT_Data.051.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM6 34°34'21.44"N 118° 5'7.70"W
Job Description	10 minute noise measurement (1 x 10 minutes)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 14:18:11	Duration	0:10:00.0
End Time	2022-08-24 14:28:11	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	67.5 dB		
LAE	95.3 dB	SEA	--- dB
EA	375.7 µPa²h	LAFTM5	71.8 dB
EA8	18.0 mPa²h		
EA40	90.2 mPa²h		
LA_{peak}	97.3 dB	2022-08-24 14:27:10	
LAS_{max}	82.1 dB	2022-08-24 14:27:11	
LAS_{min}	50.6 dB	2022-08-24 14:20:21	
LA_{eq}	67.5 dB		
LC_{eq}	79.1 dB	LC_{eq} - LA_{eq}	11.6 dB
LAI_{eq}	69.1 dB	LAI_{eq} - LA_{eq}	1.6 dB

Exceedances	Count	Duration
LAS > 65.0 dB	24	0:04:24.7
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

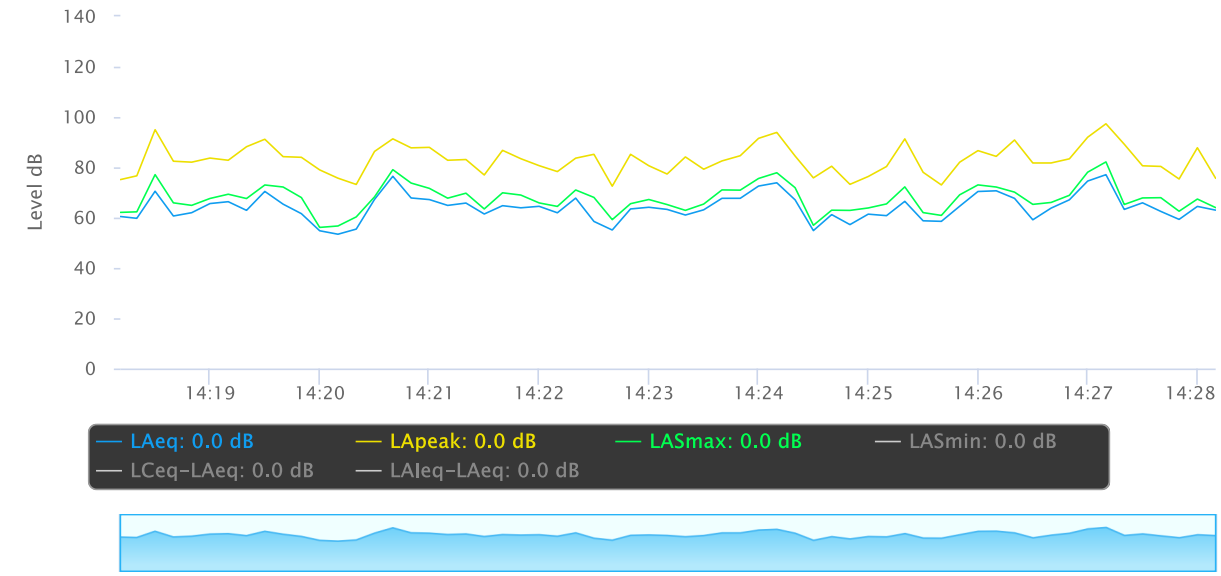
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	67.5 dB		79.1 dB		--- dB	
$L_{S(max)}$	82.1 dB	2022-08-24 14:27:11	--- dB		--- dB	
$L_{S(min)}$	50.6 dB	2022-08-24 14:20:21	--- dB		--- dB	
$L_{Peak(max)}$	97.3 dB	2022-08-24 14:27:10	--- dB		--- dB	

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

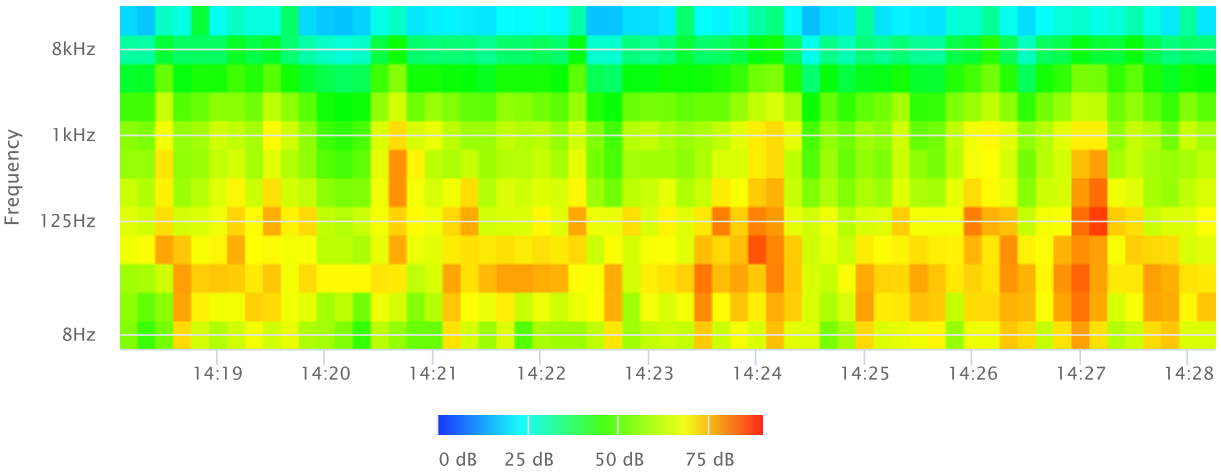
Statistics

LAS 2.0	76.6 dB
LAS 8.0	71.8 dB
LAS 25.0	66.7 dB
LAS 50.0	63.1 dB
LAS 66.6	61.1 dB
LAS 90.0	55.7 dB

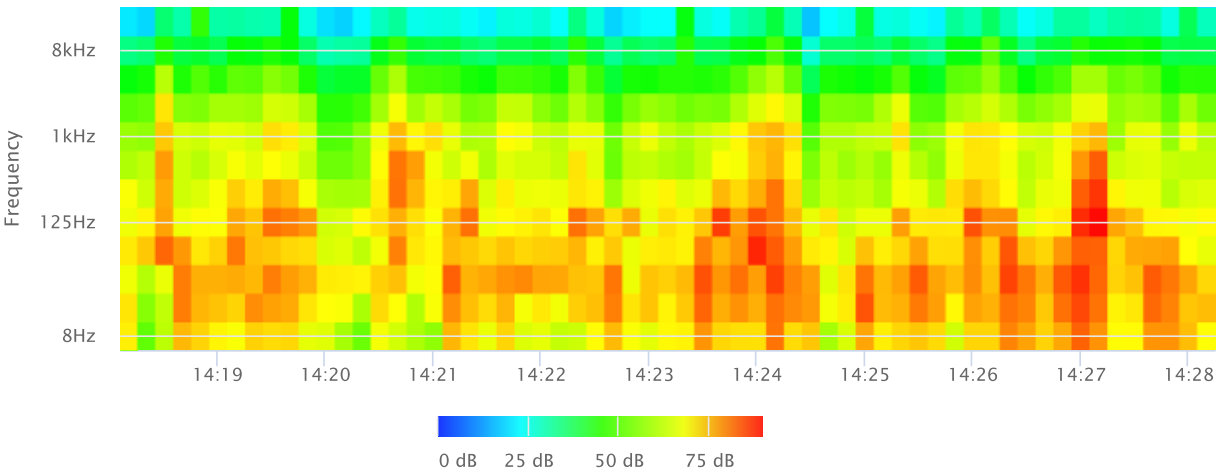
Time History



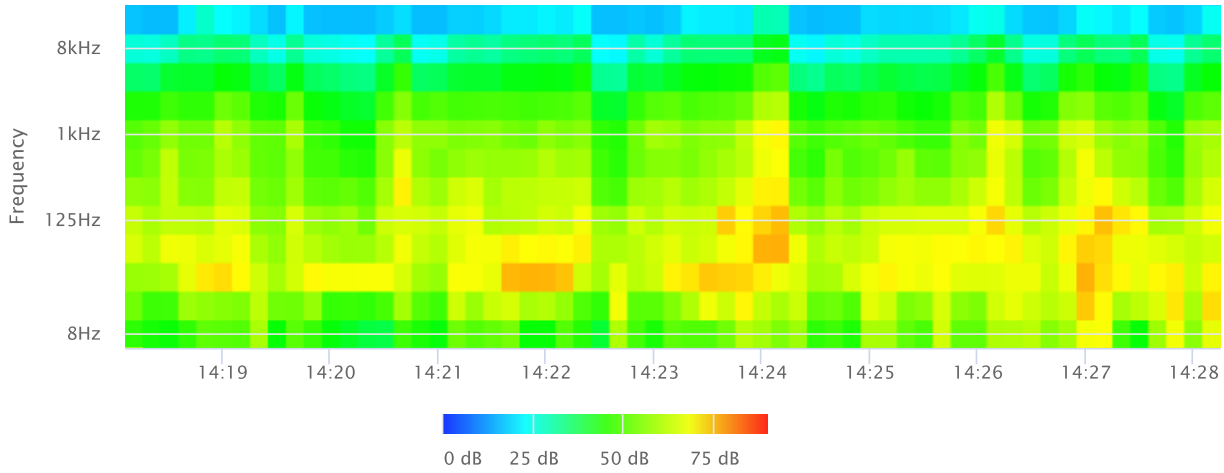
OBA 1/1 Leq



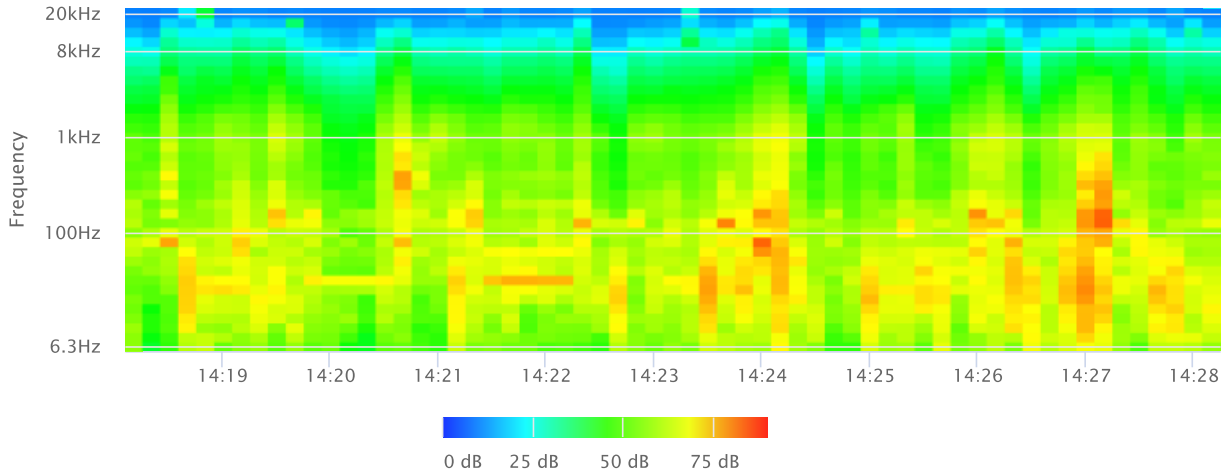
OBA 1/1 Lmax



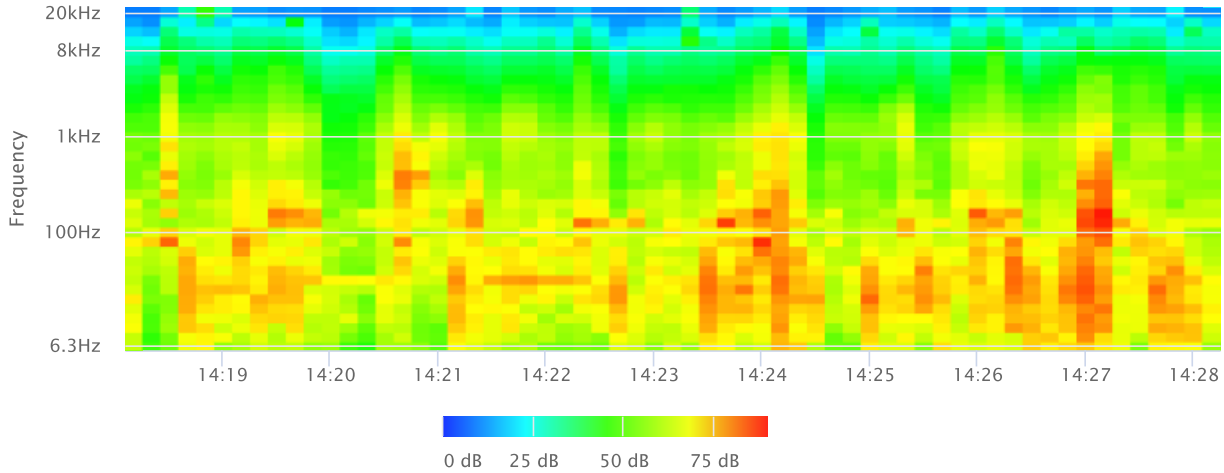
OBA 1/1 Lmin



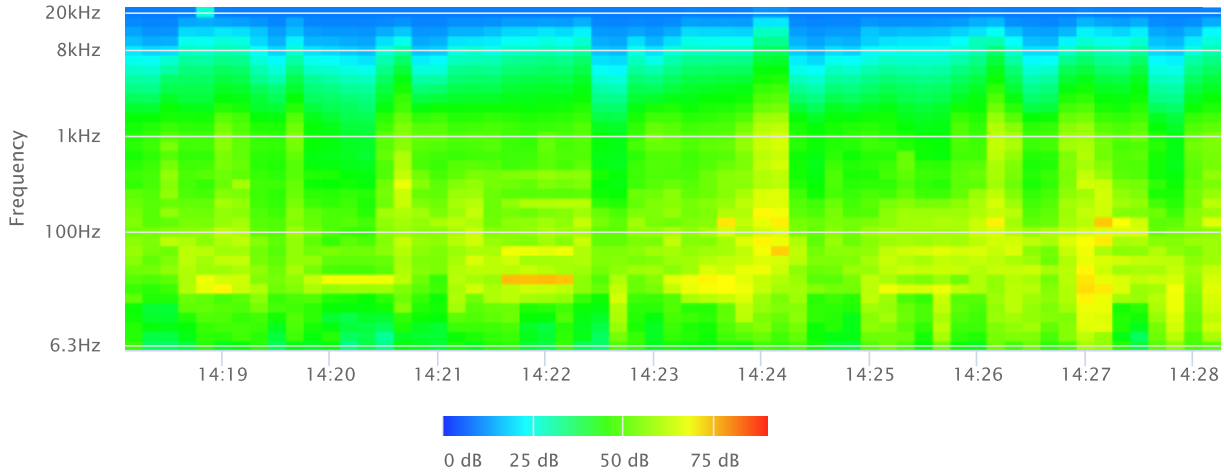
OBA 1/3 Leq



OBA 1/3 Lmax



OBA 1/3 Lmin


20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
14:19
14:20
14:21
14:22
14:23
14:24
14:25
14:26
14:27
14:28
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24, 2022

Project #: 19524

Noise Measurement #: STNM7 Run Time: 10 minutes (1 x 10 minutes) **Technician:** Ian Edward Gallagher

Nearest Address or Cross Street: 37855 Ashlee Ct, Palmdale, CA 93550

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: Ashlee Court and single-famiy residential to south and vacant land to north.

Weather: Sunny. Some white cloud. **Settings:** SLOW FAST

Temperature: 100 deg F **Wind:** 8mph **Humidity:** 20% **Terrain:** Flat

Start Time: 3:12 PM **End Time:** 3:22 PM **Run Time:**

Leq: 51.6 dB

Lmax 62.3 dB

L2 58.0 dB

L8 54.5 dB

L25 51.9 dB

L50 50.2 dB

Primary Noise Source: Traffic ambiance from vehicles traveling along East Avenue R, 25th Street East & other roads.

Secondary Noise Sources: Leaf rustle from breeze. Occasional distant overhead air traffic. 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:	8/24/2022		

Noise Measurement
Field Data

PHOTOS:



STNM7 looking N across vacant land towards east avenue R and Palmdale high School.



STNM7 looking ESE towards residence 37856 Ashlee Ct, Palmdale.

Summary	
File Name on Meter	LxT_Data.052.s
File Name on PC	LxT_0003099-20220824 151244-LxT_Data.052.ldbin
Serial Number	3099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	STNM7 34°34'15.85"N 118° 5'18.84"W
Job Description	10 minute noise measurement (1 x 10 minutes)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 15:12:44
Stop	2022-08-24 15:22:44
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 15:11:55
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	123.2 dB

Results			
L_{Aeq}	51.6		
LAE	79.3		
EA	9.56658 µPa²h		
EA8	459.1958 µPa²h		
EA40	2.295979 mPa²h		
$L_{Apeak\ (max)}$	2022-08-24 15:12:45	82.2 dB	
L_{ASmax}	2022-08-24 15:12:45	62.3 dB	
L_{ASmin}	2022-08-24 15:17:11	45.4 dB	

		Statistics	
L_{Ceq}	67.1 dB	**LA2.00**	58.0 dB
L_{Aeq}	51.6 dB	**LA8.00**	54.5 dB
L_{Ceq} - L_{Aeq}	15.6 dB	**LA25.00**	51.9 dB
L_{AIeq}	54.7 dB	**LA50.00**	50.2 dB
L_{Aeq}	51.6 dB	**LA66.60**	49.2 dB
L_{AIeq} - L_{Aeq}	3.1 dB	**LA90.00**	47.6 dB
Overload Count	0		

Measurement Report

Report Summary

Meter's File Name	LxT_Data.052.s	Computer's File Name	LxT_0003099-20220824 151244-LxT_Data.052.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	STNM7 34°34'15.85"N 118° 5'18.84"W
Job Description	10 minute noise measurement (1 x 10 minutes)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 15:12:44	Duration	0:10:00.0
End Time	2022-08-24 15:22:44	Run Time	0:10:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	51.6 dB		
LAE	79.3 dB	SEA	--- dB
EA	9.6 µPa²h	LAFTM5	56.0 dB
EA8	459.2 µPa²h		
EA40	2.3 mPa²h		
LA_{peak}	82.2 dB	2022-08-24 15:12:45	
LAS_{max}	62.3 dB	2022-08-24 15:12:45	
LAS_{min}	45.4 dB	2022-08-24 15:17:11	
LA_{eq}	51.6 dB		
LC_{eq}	67.1 dB	LC_{eq} - LA_{eq}	15.6 dB
LAI_{eq}	54.7 dB	LAI_{eq} - LA_{eq}	3.1 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	0	0:00:00.0
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}	51.6 dB		67.1 dB		--- dB	
$L_{S(max)}$	62.3 dB	2022-08-24 15:12:45	--- dB		--- dB	
$L_{S(min)}$	45.4 dB	2022-08-24 15:17:11	--- dB		--- dB	
$L_{Peak(max)}$	82.2 dB	2022-08-24 15:12:45	--- dB		--- dB	

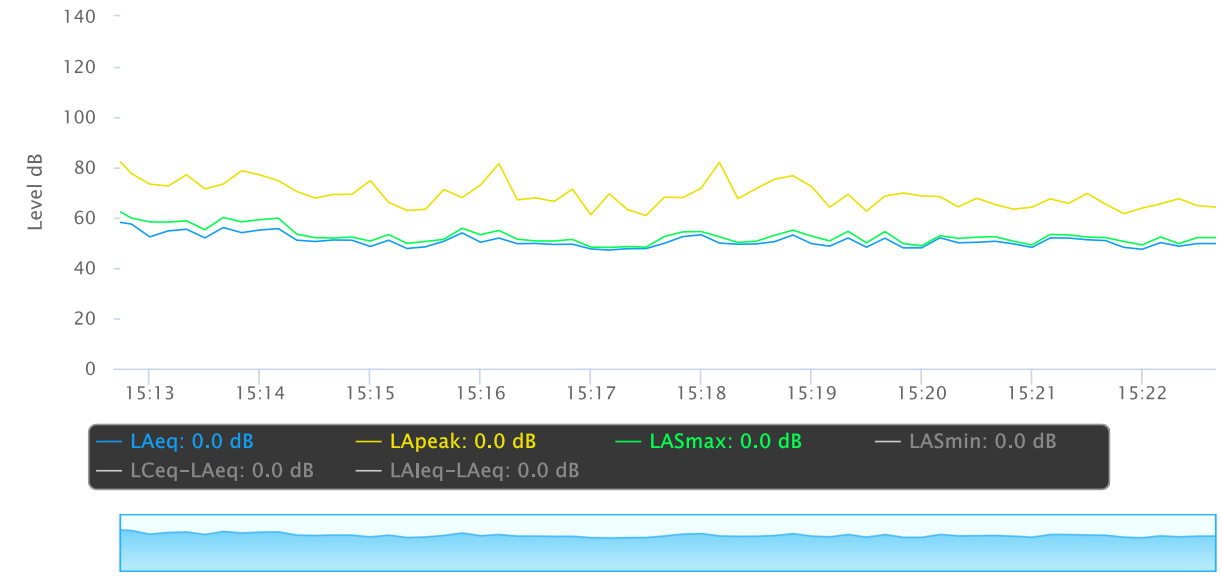
Overloads

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

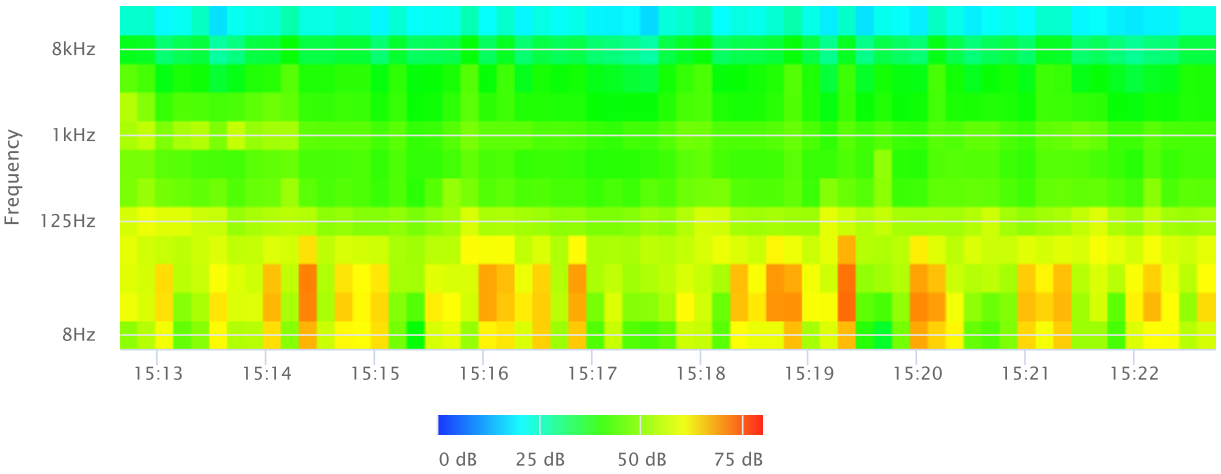
Statistics

LAS 2.0	58.0 dB
LAS 8.0	54.5 dB
LAS 25.0	51.9 dB
LAS 50.0	50.2 dB
LAS 66.6	49.2 dB
LAS 90.0	47.6 dB

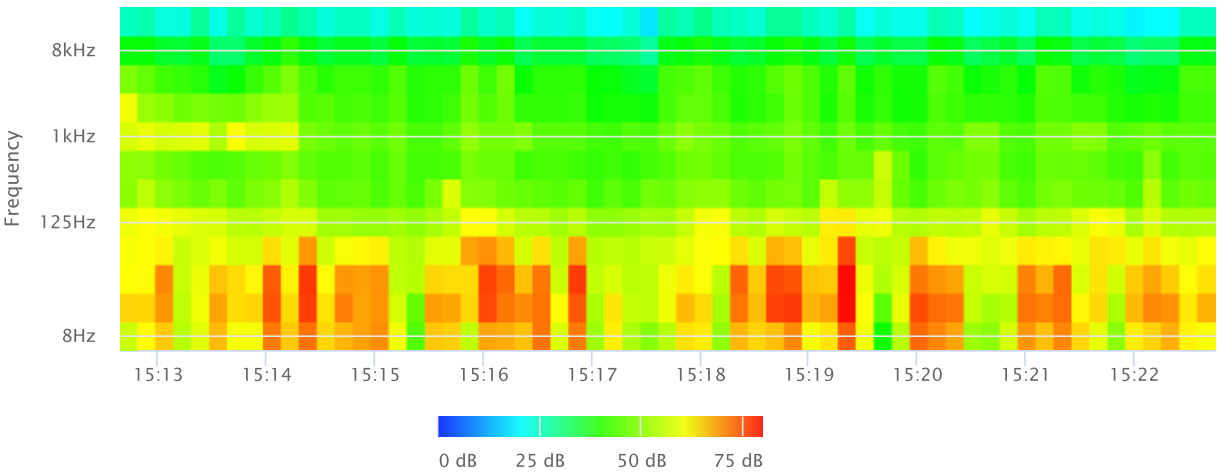
Time History



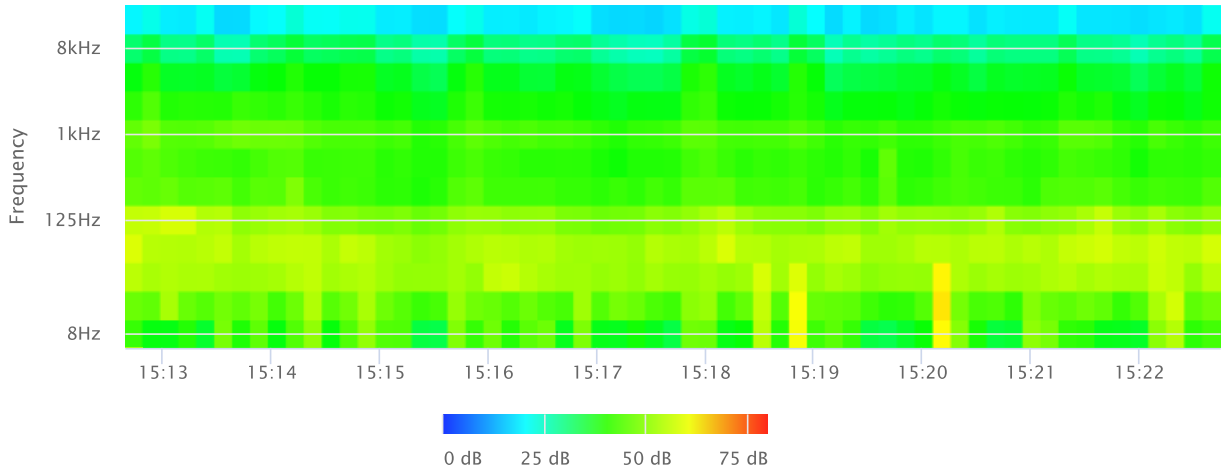
OBA 1/1 Leq



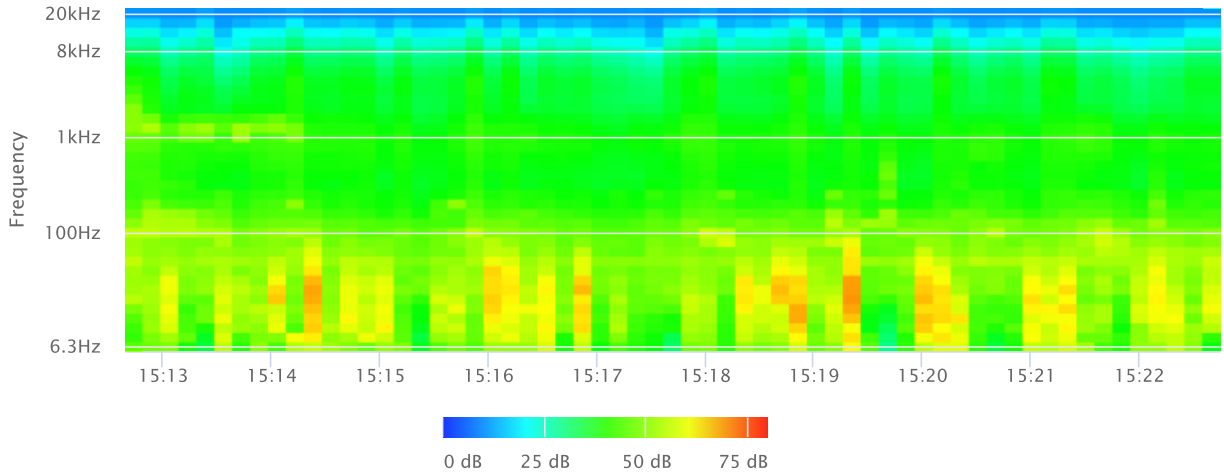
OBA 1/1 Lmax



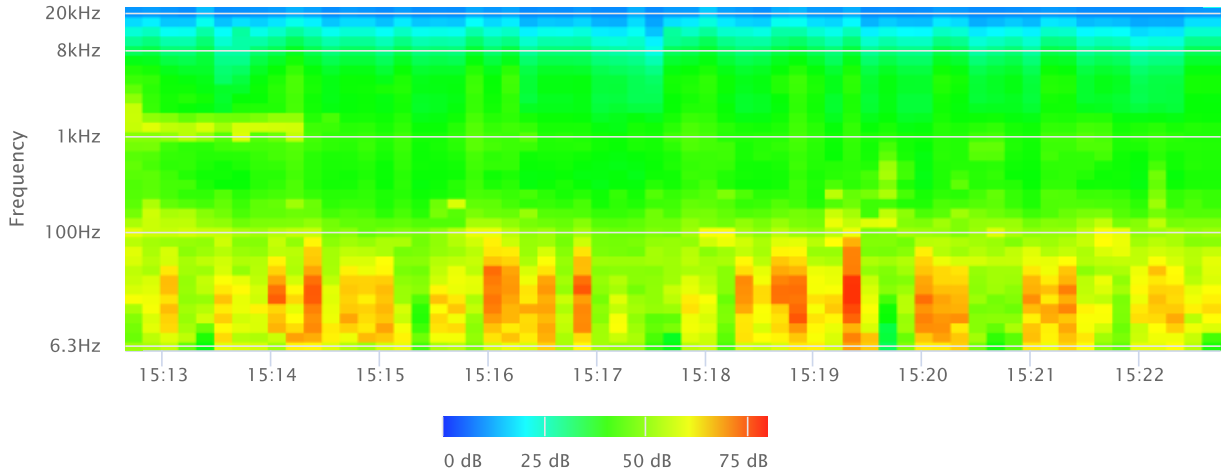
OBA 1/1 Lmin



OBA 1/3 Leq



OBA 1/3 Lmax



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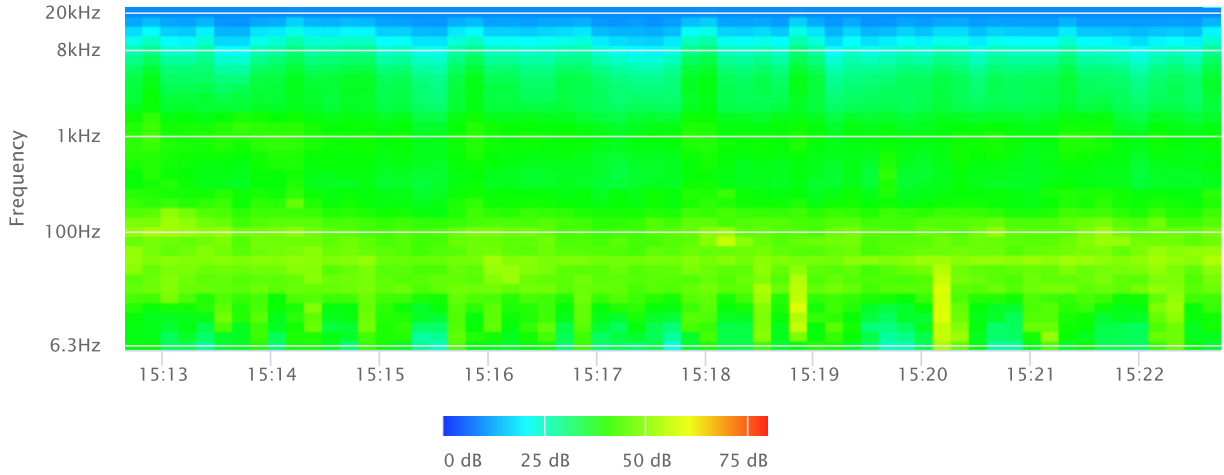

20kHz
8kHz
1kHz
100Hz
6.3Hz
Frequency
15:13
15:14
15:15
15:16
15:17
15:18
15:19
15:20
15:21
15:22
0 dB
25 dB
50 dB
75 dB

Noise Measurement
Field Data

Project Name: Beyond Food Mart Palmdale (25th/Ave R), City of Palmdale **Date:** August 24-25, 2022

Project #: 19524

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

Nearest Address or Cross Street: 25th Street East & East Avenue R

Site Description (Type of Existing Land Use and any other notable features): Project Site: Vacant land w/ some vegetation bordered by a high school to the west, 25 Street to the east, Avenue R to the south, & multi-family residential to north. Noise Measurement Site: Taken near center of project area w/ Ave R to south, vacant portion of project site to west w/ school further west, multi-family residential to north, & 25th St to east.

Weather: Sunnyby day. Some white cloud. **Settings:** SLOW FAST

Temperature: 75-104 deg F **Wind:** 4-15mph **Humidity:** 20-40% **Terrain:** Flat

Start Time: 7:00 PM **End Time:** 7:00 PM **Run Time:**

Leq: 58.7 dB

Lmax 85.5 dB

L2 65.8 dB

L8 62.0 dB

L25 58.4 dB

L50 54.9 dB

Primary Noise Source: Traffic noise from vehicles traveling along East Avenue R, 25th Street East & other roads.

Secondary Noise Sources: Leaf rustle from breeze. Occasional distant overhead air traffic. Residential ambiance. School yard 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:	8/24/2022		

Noise Measurement
Field Data

PHOTOS:



LTNM1 looking N towards microphone. Microphone ~6 feet above ground in tree.



Aerial view showing location of LTNM1 in relation to surrounding area.

Summary	
File Name on Meter	LxT_Data.053.s
File Name on PC	LxT_0003099-20220824 190000-LxT_Data.053.ldbin
Serial Number	0003099
Model	SoundTrack LxT®
Firmware Version	2.404
User	Ian Edward Gallagher
Location	LTNM1 34°34'23.88"N 118° 5'9.12"W
Job Description	24 hour noise measurement (24 x 1 hours)
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale

Measurement	
Start	2022-08-24 19:00:00
Stop	2022-08-25 19:00:00
Duration	24:00:00.0
Run Time	24:00:00.0
Pause	00:00:00.0
Pre-Calibration	2022-08-24 18:03:31
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	123.1 dB

Results			
L_{Aeq}	58.7		
LAE	108.1		
EA	7.144	mPa²h	
EA8	2.381	mPa²h	
EA40	11.907	mPa²h	
$L_{Apeak\ (max)}$	2022-08-25 17:32:25	100.2	dB
L_{ASmax}	2022-08-25 10:22:33	85.5	dB
L_{ASmin}	2022-08-25 02:27:58	34.7	dB

		Statistics	
L_{Ceq}	72.0 dB	**LA2.00**	65.8 dB
L_{Aeq}	58.7 dB	**LA8.00**	62.0 dB
L_{Ceq} - L_{Aeq}	13.3 dB	**LA25.00**	58.4 dB
L_{AIeq}	60.4 dB	**LA50.00**	54.9 dB
L_{Aeq}	58.7 dB	**LA90.00**	45.8 dB
L_{AIeq} - L_{Aeq}	1.7 dB	**LA99.00**	38.6 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	2022-08-24	19:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.5	46.6	19:03:57	83.0	19:13:24	69.1	63.4	59.8	57.0	52.5	49.8
2	2022-08-24	20:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.5	47.1	20:55:41	80.0	20:14:13	68.8	63.5	59.5	56.5	52.1	49.0
3	2022-08-24	21:00:00	01:00:00.0	01:00:00.0	00:00:00.0	57.5	43.1	21:54:32	78.8	21:34:36	65.6	60.6	56.2	53.0	48.1	45.1
4	2022-08-24	22:00:00	01:00:00.0	01:00:00.0	00:00:00.0	54.9	41.3	22:59:51	73.5	22:46:27	62.8	58.4	54.2	51.4	47.0	44.2
5	2022-08-24	23:00:00	01:00:00.0	01:00:00.0	00:00:00.0	53.4	39.8	23:21:26	70.3	23:39:10	61.6	56.5	52.5	49.5	44.1	41.0
6	2022-08-25	00:00:00	01:00:00.0	01:00:00.0	00:00:00.0	51.4	38.4	00:34:14	72.1	00:52:39	59.8	54.6	50.9	47.4	42.1	39.5
7	2022-08-25	01:00:00	01:00:00.0	01:00:00.0	00:00:00.0	49.9	35.5	01:54:16	70.7	01:48:16	58.2	53.5	49.4	45.8	40.7	37.2
8	2022-08-25	02:00:00	01:00:00.0	01:00:00.0	00:00:00.0	48.9	34.7	02:27:58	69.6	02:50:43	56.7	52.8	47.5	43.3	37.5	35.4
9	2022-08-25	03:00:00	01:00:00.0	01:00:00.0	00:00:00.0	50.1	36.4	03:04:04	66.9	03:47:12	58.0	54.2	50.0	46.4	40.7	37.6
10	2022-08-25	04:00:00	01:00:00.0	01:00:00.0	00:00:00.0	54.3	40.1	04:06:21	69.5	04:54:24	61.9	58.3	54.6	51.0	45.1	41.4
11	2022-08-25	05:00:00	01:00:00.0	01:00:00.0	00:00:00.0	57.4	43.0	05:12:05	76.3	05:42:24	64.9	60.4	56.8	53.7	48.8	45.0
12	2022-08-25	06:00:00	01:00:00.0	01:00:00.0	00:00:00.0	58.7	45.1	06:14:06	75.0	06:21:01	66.7	62.1	58.7	55.9	50.9	47.3
13	2022-08-25	07:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.7	49.8	07:59:40	82.6	07:52:25	67.2	62.5	59.9	57.4	53.5	51.2
14	2022-08-25	08:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.0	47.3	08:58:44	78.7	08:24:24	65.2	61.6	59.0	56.7	53.1	51.0
15	2022-08-25	09:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.4	43.7	09:48:28	78.8	09:28:55	66.3	61.9	58.7	55.8	50.7	46.6
16	2022-08-25	10:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.3	45.4	10:34:06	85.5	10:22:33	67.1	61.7	57.9	54.9	50.2	46.9
17	2022-08-25	11:00:00	01:00:00.0	01:00:00.0	00:00:00.0	57.2	44.4	11:05:17	70.6	11:53:34	64.5	60.8	57.6	54.6	49.6	46.1
18	2022-08-25	12:00:00	01:00:00.0	01:00:00.0	00:00:00.0	58.7	45.0	12:00:41	81.2	12:16:36	65.4	61.5	58.4	55.6	51.1	47.5
19	2022-08-25	13:00:00	01:00:00.0	01:00:00.0	00:00:00.0	58.4	46.0	13:18:16	75.3	13:58:52	65.6	61.7	58.6	55.9	51.8	48.9
20	2022-08-25	14:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.5	48.8	14:16:19	80.6	14:52:54	65.3	62.4	59.8	57.2	53.1	50.1
21	2022-08-25	15:00:00	01:00:00.0	01:00:00.0	00:00:00.0	59.8	50.3	15:17:12	72.9	15:19:32	65.8	63.1	60.5	58.4	54.3	52.1
22	2022-08-25	16:00:00	01:00:00.0	01:00:00.0	00:00:00.0	61.3	52.0	16:17:00	74.9	16:55:46	67.0	64.6	62.1	59.8	55.8	53.5
23	2022-08-25	17:00:00	01:00:00.0	01:00:00.0	00:00:00.0	63.0	50.6	17:17:02	84.0	17:32:25	69.1	64.6	61.8	59.2	54.9	52.5
24	2022-08-25	18:00:00	01:00:00.0	01:00:00.0	00:00:00.0	60.7	49.9	18:35:58	79.5	18:37:28	67.5	63.8	60.9	57.9	53.6	51.4

Measurement Report

Report Summary

Meter's File Name	LxT_Data.053.s	Computer's File Name	LxT_0003099-20220824 190000-LxT_Data.053.ldbin
Meter	LxT1 0003099		
Firmware	2.404		
User	Ian Edward Gallagher	Location	LTNM1 34°34'23.88"N 118° 5'9.12"W
Job Description	24 hour noise measurement (24 x 1 hours)		
Note	Ganddini 19524 Beyond Food Mart, City of Palmdale		
Start Time	2022-08-24 19:00:00	Duration	24:00:00.0
End Time	2022-08-25 19:00:00	Run Time	24:00:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	58.7 dB		
LAE	108.1 dB	SEA	--- dB
EA	7.1 mPa²h	LAFTM5	62.7 dB
EA8	2.4 mPa²h		
EA40	11.9 mPa²h		
LA_{peak}	100.2 dB	2022-08-25 17:32:25	
LAS_{max}	85.5 dB	2022-08-25 10:22:33	
LAS_{min}	34.7 dB	2022-08-25 02:27:58	
LA_{eq}	58.7 dB		
LC_{eq}	72.0 dB	LC_{eq} - LA_{eq}	13.3 dB
LAI_{eq}	60.4 dB	LAI_{eq} - LA_{eq}	1.7 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	457	0:53:59.7
LAS > 85.0 dB	1	0:00:02.4
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}	58.7 dB		72.0 dB		--- dB	
$L_{S(max)}$	85.5 dB	2022-08-25 10:22:33	--- dB		--- dB	
$L_{S(min)}$	34.7 dB	2022-08-25 02:27:58	--- dB		--- dB	
$L_{Peak(max)}$	100.2 dB	2022-08-25 17:32:25	--- dB		--- dB	

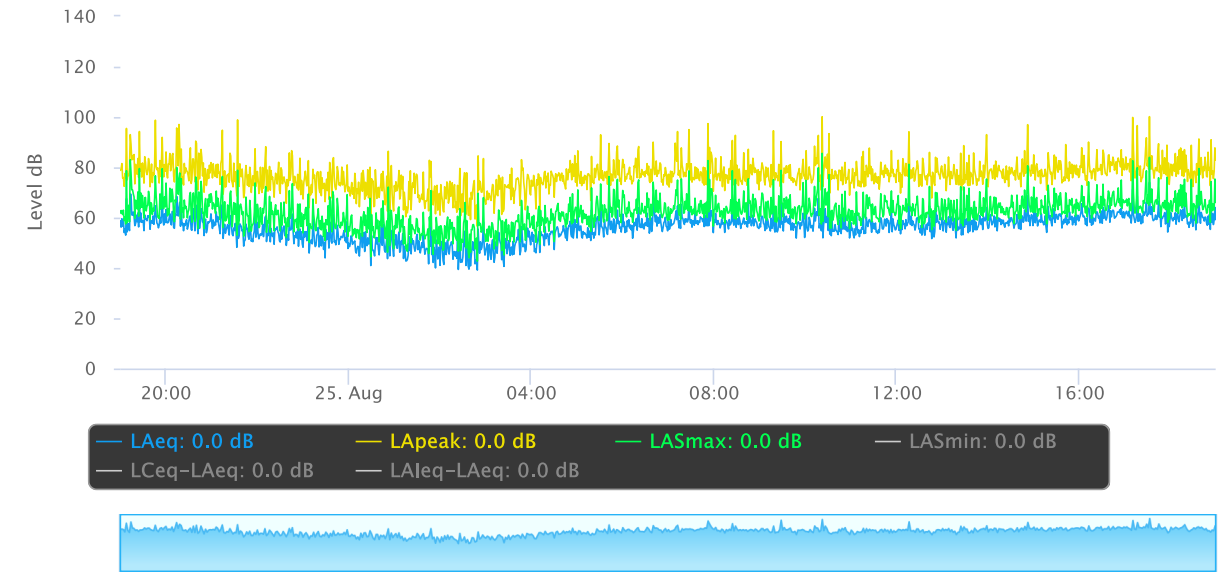
Overloads

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

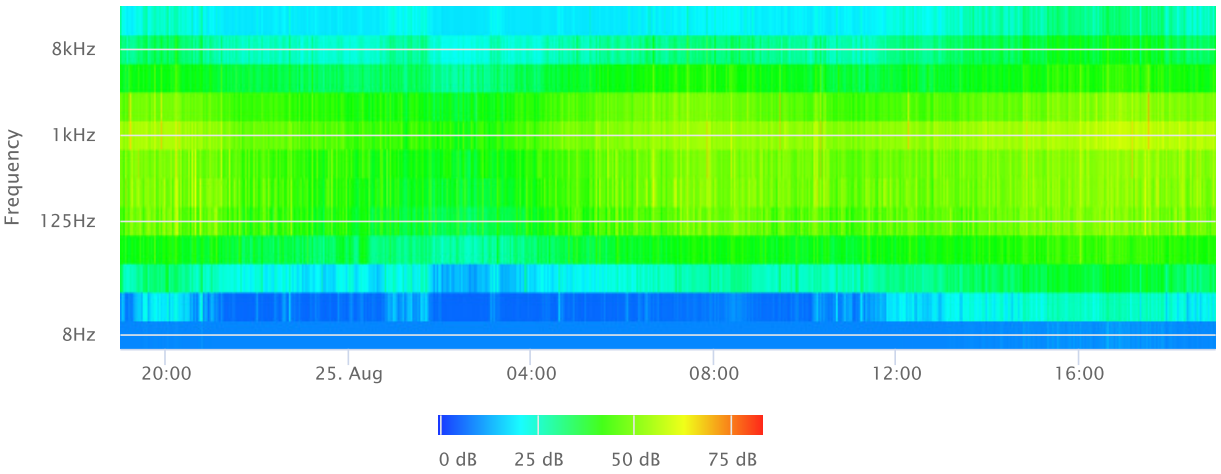
Statistics

LAS 2.0	65.8 dB
LAS 8.0	62.0 dB
LAS 25.0	58.4 dB
LAS 50.0	54.9 dB
LAS 90.0	45.8 dB
LAS 99.0	38.6 dB

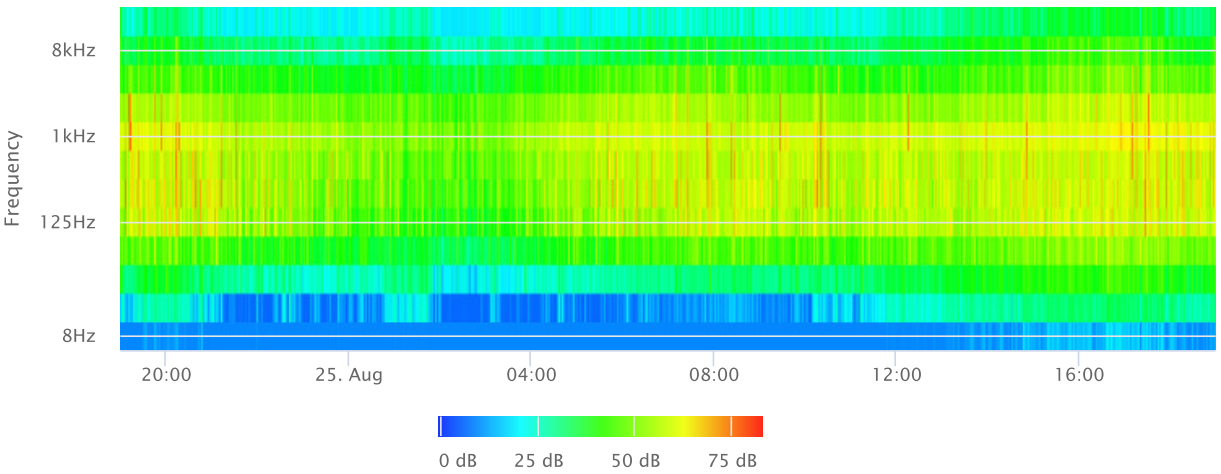
Time History



OBA 1/1 Leq



OBA 1/1 Lmax



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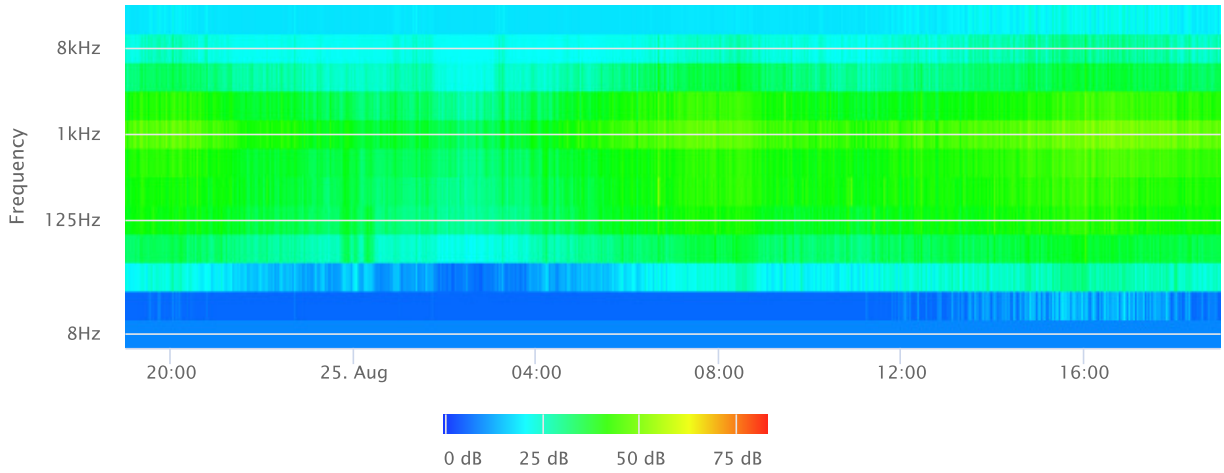

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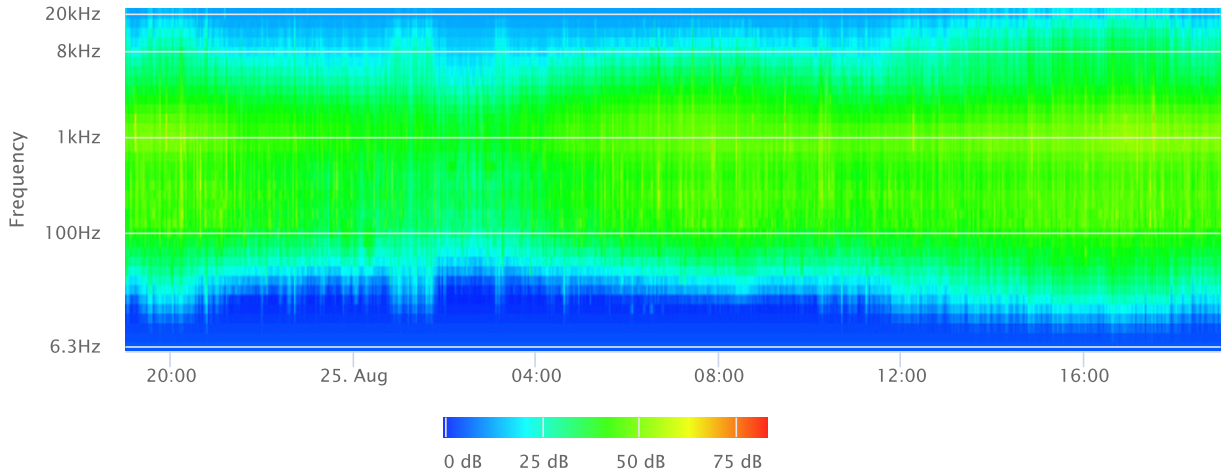
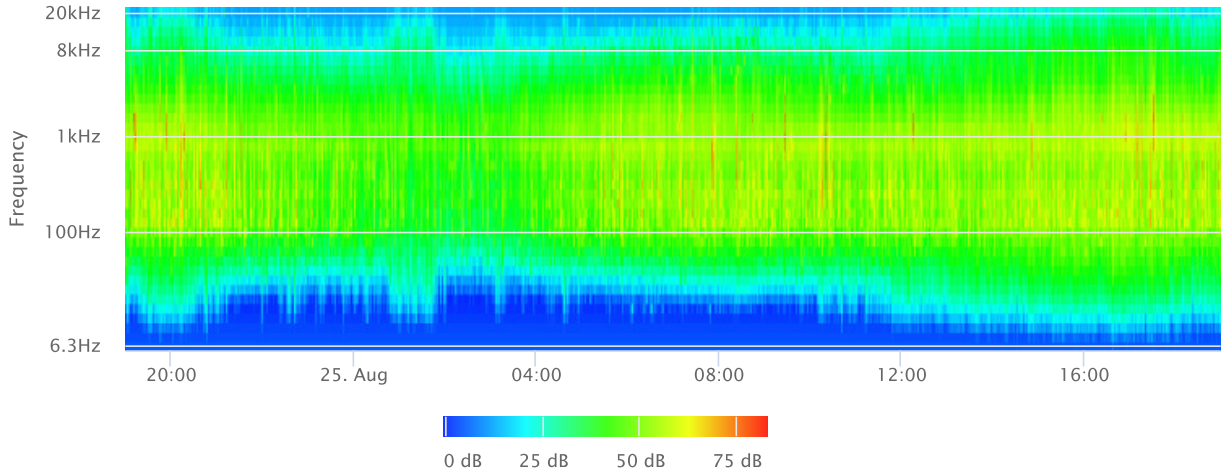
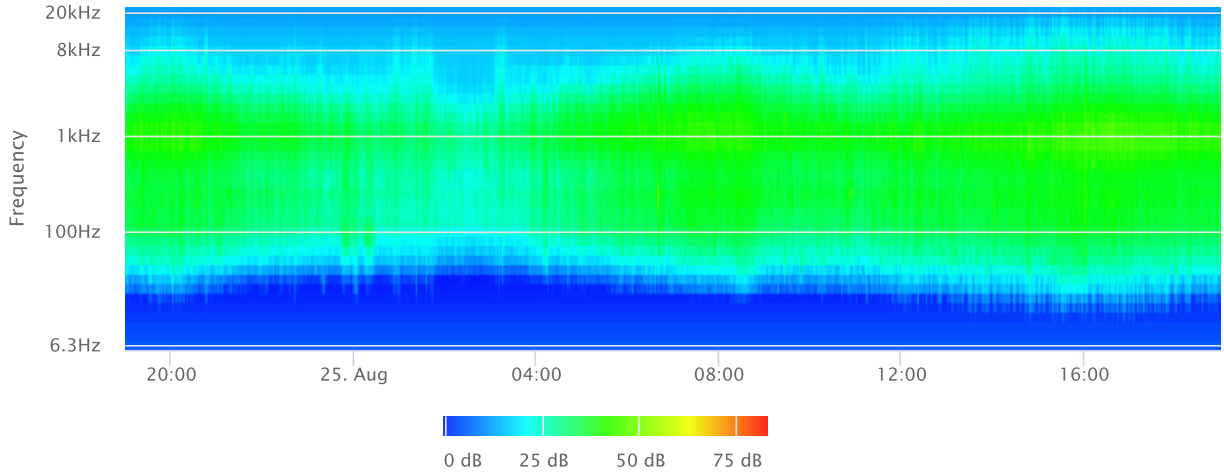


OBA 1/3 Lmax



OBA 1/3 Lmin


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

APPENDIX D

CONSTRUCTION NOISE MODELING

Receptor - Multi-family Residential Uses to the North (Canyon Creek Apartments, 38121 25th St E, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	200	40	1.20	-12.0	0.8	70.0	70.8
Tractors/Loaders/Backhoes	4	84	200	40	1.60	-12.0	2.0	72.0	74.0
								Log Sum	75.7
Grading									
Rubber Tired Dozers	1	82	200	40	0.40	-12.0	-4.0	70.0	66.0
Tractors/Loaders/Backhoes	3	84	200	40	1.20	-12.0	0.8	72.0	72.8
Excavators	1	81	200	40	0.40	-12.0	-4.0	69.0	65.0
Graders	1	85	200	40	0.40	-12.0	-4.0	73.0	69.0
								Log Sum	75.3
Building Construction									
Cranes	1	81	200	16	0.16	-12.0	-8.0	69.0	61.0
Forklifts[2]	3	48	200	40	1.20	-12.0	0.8	36.0	36.8
Generator Sets	1	81	200	50	0.50	-12.0	-3.0	69.0	65.9
Welders	1	74	200	40	0.40	-12.0	-4.0	62.0	58.0
Tractors/Loaders/Backhoes	3	84	200	40	1.20	-12.0	0.8	72.0	72.8
								Log Sum	73.9
Paving									
Pavers	2	77	200	50	1.00	-12.0	0.0	65.0	65.0
Paving Equipment	2	77	200	50	1.00	-12.0	0.0	65.0	65.0
Rollers	2	80	200	20	0.40	-12.0	-4.0	68.0	64.0
								Log Sum	69.4
Architectural Coating									
Air Compressors	1	78	200	40	0.40	-12.0	-4.0	66.0	62.0
								Log Sum	62.0

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 - Single-Family Residential Uses to the Northeast (2506 E Ave Q-12, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	882	40	1.20	-24.9	0.8	57.1	57.9
Tractors/Loaders/Backhoes	4	84	882	40	1.60	-24.9	2.0	59.1	61.1
								Log Sum	62.8
Grading									
Rubber Tired Dozers	1	82	882	40	0.40	-24.9	-4.0	57.1	53.1
Tractors/Loaders/Backhoes	3	84	882	40	1.20	-24.9	0.8	59.1	59.9
Excavators	1	81	882	40	0.40	-24.9	-4.0	56.1	52.1
Graders	1	85	882	40	0.40	-24.9	-4.0	60.1	56.1
								Log Sum	62.4
Building Construction									
Cranes	1	81	882	16	0.16	-24.9	-8.0	56.1	48.1
Forklifts[2]	3	48	882	40	1.20	-24.9	0.8	23.1	23.9
Generator Sets	1	81	882	50	0.50	-24.9	-3.0	56.1	53.1
Welders	1	74	882	40	0.40	-24.9	-4.0	49.1	45.1
Tractors/Loaders/Backhoes	3	84	882	40	1.20	-24.9	0.8	59.1	59.9
								Log Sum	61.0
Paving									
Pavers	2	77	882	50	1.00	-24.9	0.0	52.1	52.1
Paving Equipment	2	77	882	50	1.00	-24.9	0.0	52.1	52.1
Rollers	2	80	882	20	0.40	-24.9	-4.0	55.1	51.1
								Log Sum	56.5
Architectural Coating									
Air Compressors	1	78	882	40	0.40	-24.9	-4.0	53.1	49.1
								Log Sum	49.1

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 Uses to the Northeast (SEC 25th Street and Ave Q-12, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	500	40	1.20	-20.0	0.8	62.0	62.8
Tractors/Loaders/Backhoes	4	84	500	40	1.60	-20.0	2.0	64.0	66.0
								Log Sum	67.7
Grading									
Rubber Tired Dozers	1	82	500	40	0.40	-20.0	-4.0	62.0	58.0
Tractors/Loaders/Backhoes	3	84	500	40	1.20	-20.0	0.8	64.0	64.8
Excavators	1	81	500	40	0.40	-20.0	-4.0	61.0	57.0
Graders	1	85	500	40	0.40	-20.0	-4.0	65.0	61.0
								Log Sum	67.3
Building Construction									
Cranes	1	81	500	16	0.16	-20.0	-8.0	61.0	53.0
Forklifts[2]	3	48	500	40	1.20	-20.0	0.8	28.0	28.8
Generator Sets	1	81	500	50	0.50	-20.0	-3.0	61.0	58.0
Welders	1	74	500	40	0.40	-20.0	-4.0	54.0	50.0
Tractors/Loaders/Backhoes	3	84	500	40	1.20	-20.0	0.8	64.0	64.8
								Log Sum	66.0
Paving									
Pavers	2	77	500	50	1.00	-20.0	0.0	57.0	57.0
Paving Equipment	2	77	500	50	1.00	-20.0	0.0	57.0	57.0
Rollers	2	80	500	20	0.40	-20.0	-4.0	60.0	56.0
								Log Sum	61.5
Architectural Coating									
Air Compressors	1	78	500	40	0.40	-20.0	-4.0	58.0	54.0
								Log Sum	54.0

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 - Single-Family Residential Uses to the East (38021 Jeri Lane, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	257	40	1.20	-14.2	0.8	67.8	68.6
Tractors/Loaders/Backhoes	4	84	257	40	1.60	-14.2	2.0	69.8	71.8
								Log Sum	73.5
Grading									
Rubber Tired Dozers	1	82	257	40	0.40	-14.2	-4.0	67.8	63.8
Tractors/Loaders/Backhoes	3	84	257	40	1.20	-14.2	0.8	69.8	70.6
Excavators	1	81	257	40	0.40	-14.2	-4.0	66.8	62.8
Graders	1	85	257	40	0.40	-14.2	-4.0	70.8	66.8
								Log Sum	73.1
Building Construction									
Cranes	1	81	257	16	0.16	-14.2	-8.0	66.8	58.8
Forklifts[2]	3	48	257	40	1.20	-14.2	0.8	33.8	34.6
Generator Sets	1	81	257	50	0.50	-14.2	-3.0	66.8	63.8
Welders	1	74	257	40	0.40	-14.2	-4.0	59.8	55.8
Tractors/Loaders/Backhoes	3	84	257	40	1.20	-14.2	0.8	69.8	70.6
								Log Sum	71.7
Paving									
Pavers	2	77	257	50	1.00	-14.2	0.0	62.8	62.8
Paving Equipment	2	77	257	50	1.00	-14.2	0.0	62.8	62.8
Rollers	2	80	257	20	0.40	-14.2	-4.0	65.8	61.8
								Log Sum	67.2
Architectural Coating									
Air Compressors	1	78	257	40	0.40	-14.2	-4.0	63.8	59.8
								Log Sum	59.8

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 - Single-Family Residential Uses to the Southeast (2504 East Avenue R, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	415	40	1.20	-18.4	0.8	63.6	64.4
Tractors/Loaders/Backhoes	4	84	415	40	1.60	-18.4	2.0	65.6	67.7
								Log Sum	69.3
Grading									
Rubber Tired Dozers	1	82	415	40	0.40	-18.4	-4.0	63.6	59.6
Tractors/Loaders/Backhoes	3	84	415	40	1.20	-18.4	0.8	65.6	66.4
Excavators	1	81	415	40	0.40	-18.4	-4.0	62.6	58.6
Graders	1	85	415	40	0.40	-18.4	-4.0	66.6	62.6
								Log Sum	69.0
Building Construction									
Cranes	1	81	415	16	0.16	-18.4	-8.0	62.6	54.7
Forklifts[2]	3	48	415	40	1.20	-18.4	0.8	29.6	30.4
Generator Sets	1	81	415	50	0.50	-18.4	-3.0	62.6	59.6
Welders	1	74	415	40	0.40	-18.4	-4.0	55.6	51.6
Tractors/Loaders/Backhoes	3	84	415	40	1.20	-18.4	0.8	65.6	66.4
								Log Sum	67.6
Paving									
Pavers	2	77	415	50	1.00	-18.4	0.0	58.6	58.6
Paving Equipment	2	77	415	50	1.00	-18.4	0.0	58.6	58.6
Rollers	2	80	415	20	0.40	-18.4	-4.0	61.6	57.6
								Log Sum	63.1
Architectural Coating									
Air Compressors	1	78	415	40	0.40	-18.4	-4.0	59.6	55.6
								Log Sum	55.6

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 - Single-Family Residential Uses to the South (37954 Vintage Ct, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	297	40	1.20	-15.5	0.8	66.5	67.3
Tractors/Loaders/Backhoes	4	84	297	40	1.60	-15.5	2.0	68.5	70.6
								Log Sum	72.2
Grading									
Rubber Tired Dozers	1	82	297	40	0.40	-15.5	-4.0	66.5	62.5
Tractors/Loaders/Backhoes	3	84	297	40	1.20	-15.5	0.8	68.5	69.3
Excavators	1	81	297	40	0.40	-15.5	-4.0	65.5	61.5
Graders	1	85	297	40	0.40	-15.5	-4.0	69.5	65.5
								Log Sum	71.9
Building Construction									
Cranes	1	81	297	16	0.16	-15.5	-8.0	65.5	57.6
Forklifts[2]	3	48	297	40	1.20	-15.5	0.8	32.5	33.3
Generator Sets	1	81	297	50	0.50	-15.5	-3.0	65.5	62.5
Welders	1	74	297	40	0.40	-15.5	-4.0	58.5	54.5
Tractors/Loaders/Backhoes	3	84	297	40	1.20	-15.5	0.8	68.5	69.3
								Log Sum	70.5
Paving									
Pavers	2	77	297	50	1.00	-15.5	0.0	61.5	61.5
Paving Equipment	2	77	297	50	1.00	-15.5	0.0	61.5	61.5
Rollers	2	80	297	20	0.40	-15.5	-4.0	64.5	60.5
								Log Sum	66.0
Architectural Coating									
Air Compressors	1	78	297	40	0.40	-15.5	-4.0	62.5	58.5
								Log Sum	58.5

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 - Church Use to the South (Living Praise Christian Center, 2320 E Ave R, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	315	40	1.20	-16.0	0.8	66.0	66.8
Tractors/Loaders/Backhoes	4	84	315	40	1.60	-16.0	2.0	68.0	70.1
								Log Sum	71.7
Grading									
Rubber Tired Dozers	1	82	315	40	0.40	-16.0	-4.0	66.0	62.0
Tractors/Loaders/Backhoes	3	84	315	40	1.20	-16.0	0.8	68.0	68.8
Excavators	1	81	315	40	0.40	-16.0	-4.0	65.0	61.0
Graders	1	85	315	40	0.40	-16.0	-4.0	69.0	65.0
								Log Sum	71.4
Building Construction									
Cranes	1	81	315	16	0.16	-16.0	-8.0	65.0	57.1
Forklifts[2]	3	48	315	40	1.20	-16.0	0.8	32.0	32.8
Generator Sets	1	81	315	50	0.50	-16.0	-3.0	65.0	62.0
Welders	1	74	315	40	0.40	-16.0	-4.0	58.0	54.0
Tractors/Loaders/Backhoes	3	84	315	40	1.20	-16.0	0.8	68.0	68.8
								Log Sum	70.0
Paving									
Pavers	2	77	315	50	1.00	-16.0	0.0	61.0	61.0
Paving Equipment	2	77	315	50	1.00	-16.0	0.0	61.0	61.0
Rollers	2	80	315	20	0.40	-16.0	-4.0	64.0	60.0
								Log Sum	65.5
Architectural Coating									
Air Compressors	1	78	315	40	0.40	-16.0	-4.0	62.0	58.0
								Log Sum	58.0

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 - Single-Family Residential Uses to the Southwest (37856 Ashlee Ct, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	1110	40	1.20	-26.9	0.8	55.1	55.9
Tractors/Loaders/Backhoes	4	84	1110	40	1.60	-26.9	2.0	57.1	59.1
								Log Sum	60.8
Grading									
Rubber Tired Dozers	1	82	1110	40	0.40	-26.9	-4.0	55.1	51.1
Tractors/Loaders/Backhoes	3	84	1110	40	1.20	-26.9	0.8	57.1	57.9
Excavators	1	81	1110	40	0.40	-26.9	-4.0	54.1	50.1
Graders	1	85	1110	40	0.40	-26.9	-4.0	58.1	54.1
								Log Sum	60.4
Building Construction									
Cranes	1	81	1110	16	0.16	-26.9	-8.0	54.1	46.1
Forklifts[2]	3	48	1110	40	1.20	-26.9	0.8	21.1	21.9
Generator Sets	1	81	1110	50	0.50	-26.9	-3.0	54.1	51.1
Welders	1	74	1110	40	0.40	-26.9	-4.0	47.1	43.1
Tractors/Loaders/Backhoes	3	84	1110	40	1.20	-26.9	0.8	57.1	57.9
								Log Sum	59.0
Paving									
Pavers	2	77	1110	50	1.00	-26.9	0.0	50.1	50.1
Paving Equipment	2	77	1110	50	1.00	-26.9	0.0	50.1	50.1
Rollers	2	80	1110	20	0.40	-26.9	-4.0	53.1	49.1
								Log Sum	54.5
Architectural Coating									
Air Compressors	1	78	1110	40	0.40	-26.9	-4.0	51.1	47.1
								Log Sum	47.1

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 - School Use to the West (Palmdale High School, 2137 E Ave R, Palmdale)

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
Site Preparation									
Rubber Tired Dozers	3	82	463	40	1.20	-19.3	0.8	62.7	63.5
Tractors/Loaders/Backhoes	4	84	463	40	1.60	-19.3	2.0	64.7	66.7
								Log Sum	68.4
Grading									
Rubber Tired Dozers	1	82	463	40	0.40	-19.3	-4.0	62.7	58.7
Tractors/Loaders/Backhoes	3	84	463	40	1.20	-19.3	0.8	64.7	65.5
Excavators	1	81	463	40	0.40	-19.3	-4.0	61.7	57.7
Graders	1	85	463	40	0.40	-19.3	-4.0	65.7	61.7
								Log Sum	68.0
Building Construction									
Cranes	1	81	463	16	0.16	-19.3	-8.0	61.7	53.7
Forklifts[2]	3	48	463	40	1.20	-19.3	0.8	28.7	29.5
Generator Sets	1	81	463	50	0.50	-19.3	-3.0	61.7	58.7
Welders	1	74	463	40	0.40	-19.3	-4.0	54.7	50.7
Tractors/Loaders/Backhoes	3	84	463	40	1.20	-19.3	0.8	64.7	65.5
								Log Sum	66.6
Paving									
Pavers	2	77	463	50	1.00	-19.3	0.0	57.7	57.7
Paving Equipment	2	77	463	50	1.00	-19.3	0.0	57.7	57.7
Rollers	2	80	463	20	0.40	-19.3	-4.0	60.7	56.7
								Log Sum	62.1
Architectural Coating									
Air Compressors	1	78	463	40	0.40	-19.3	-4.0	58.7	54.7
								Log Sum	54.7

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

FHWA WORKSHEETS

Existing Traffic Noise

1	:Id	
Palmdale Boulevard	:Road	
West of 25th 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	21700
Speed	45
Distance	52
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	1256.73	26.04	43.40	932.98	4.34	7.23	231.36	36.17	60.28
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	24.15	7.32	9.54	22.86	-0.46	1.76	16.80	8.75	10.96
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	68.26	59.70	66.44	66.97	51.92	58.66	60.91	61.13	67.86
	DAY LEQ	70.80		EVENING LEQ	67.68		NIGHT LEQ	69.37	

F	CNEL	76.10	
	DAY LEQ	70.80	

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 heavy truck mix.

Existing Plus Project Traffic Noise

1	:Id	
Palmdale Boulevard	:Road	
West of 25th 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	22166
Speed	45
Distance	52
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	1283.70	26.60	44.33	953.00	4.43	7.39	236.32	36.94	61.57
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	24.25	7.41	9.63	22.95	-0.37	1.85	16.90	8.84	11.06
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	68.35	59.79	66.53	67.06	52.01	58.75	61.00	61.22	67.96
	DAY LEQ	70.90		EVENING LEQ	67.77		NIGHT LEQ	69.46	

CNEL	76.19
DAY LEQ	70.90

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 heavy truck mix.

Existing Traffic Noise

2	:Id	
Palmdale Boulevard	:Road	
East of 25th 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	19600
Speed	45
Distance	52
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	1135.11	23.52	39.20	842.70	3.92	6.53	208.97	32.67	54.44
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	23.71	6.88	9.09	22.42	-0.91	1.31	16.36	8.30	10.52
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.82	59.26	66.00	66.52	51.48	58.21	60.47	60.68	67.42
	DAY LEQ	70.36		EVENING LEQ	67.24		NIGHT LEQ	68.93	

CNEL	**75.66**
DAY LEQ	70.36

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	
Palmdale Boulevard	:Road	
East of 25th 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	20066
Speed	45
Distance	52
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	1162.08	24.08	40.13	862.71	4.01	6.69	213.93	33.44	55.74
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	23.81	6.98	9.20	22.52	-0.80	1.42	16.46	8.41	10.62
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.92	59.36	66.10	66.62	51.58	58.32	60.57	60.79	67.52
	DAY LEQ	70.46		EVENING LEQ	67.34		NIGHT LEQ	69.03	

CNEL	75.76
DAY LEQ	70.46

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	
Avenue R	:Road	
West of 20th 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	12200
Speed	50
Distance	52
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	706.55	14.64	24.40	524.53	2.44	4.07	130.07	20.33	33.89
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	21.20	4.36	6.58	19.90	-3.42	-1.20	13.85	5.79	8.01
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	57.91	64.36	65.78	50.13	56.58	59.73	59.34	65.78
	DAY LEQ	69.27		EVENING LEQ	66.38		NIGHT LEQ	67.47	

CNEL	74.30
DAY LEQ	69.27

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	
Avenue R	:Road	
West of 20th 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	12898
Speed	50
Distance	52
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	747.00	15.48	25.80	554.56	2.58	4.30	137.52	21.50	35.83
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	21.44	4.60	6.82	20.14	-3.18	-0.96	14.09	6.03	8.25
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.32	58.15	64.60	66.02	50.37	56.82	59.97	59.58	66.03
	DAY LEQ	69.51		EVENING LEQ	66.62		NIGHT LEQ	67.71	

CNEL	74.54
DAY LEQ	69.51

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	
Avenue R	:Road	
20th Street to Project Site	: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	12100
Speed	50
Distance	52
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	700.76	14.52	24.20	520.24	2.42	4.03	129.01	20.17	33.61
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	21.16	4.32	6.54	19.87	-3.46	-1.24	13.81	5.75	7.97
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.04	57.88	64.32	65.75	50.10	56.54	59.69	59.30	65.75
	DAY LEQ	69.23		EVENING LEQ	66.34		NIGHT LEQ	67.44	

CNEL	74.26
DAY LEQ	69.23

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	
Avenue R	:Road	
20th Street to Project Site	: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	13264
Speed	50
Distance	52
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	768.17	15.92	26.53	570.28	2.65	4.42	141.42	22.11	36.84
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	21.56	4.72	6.94	20.27	-3.06	-0.84	14.21	6.15	8.37
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.44	58.28	64.72	66.15	50.49	56.94	60.09	59.70	66.15
	DAY LEQ	69.63		EVENING LEQ	66.74		NIGHT LEQ	67.83	

CNEL	74.66
DAY LEQ	69.63

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	
Avenue R	:Road	
Project Site to 25th 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	12100
Speed	50
Distance	52
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	700.76	14.52	24.20	520.24	2.42	4.03	129.01	20.17	33.61
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	21.16	4.32	6.54	19.87	-3.46	-1.24	13.81	5.75	7.97
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.04	57.88	64.32	65.75	50.10	56.54	59.69	59.30	65.75
	DAY LEQ	69.23		EVENING LEQ	66.34		NIGHT LEQ	67.44	

CNEL	**74.26**
DAY LEQ	69.23

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	Vehicle Distribution (Heavy Truck Mix)				ADT	14847
Avenue R	: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
Project Site to 25th Street	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	52
		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	859.85	17.82	29.69	638.34	2.97	4.95	158.30	24.75	41.24
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	22.05	5.21	7.43	20.76	-2.57	-0.35	14.70	6.64	8.86
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.93	58.77	65.21	66.63	50.98	57.43	60.58	60.19	66.64
	DAY LEQ	70.12		EVENING LEQ	67.23		NIGHT LEQ	68.32	

CNEL	75.15	Day hour	93.00
DAY LEQ	70.12	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
Avenue R	:Road
25th Street to 30th 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	14300
Speed	50
Distance	52
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	828.17	17.16	28.60	614.82	2.86	4.77	152.46	23.83	39.72
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	21.89	5.05	7.27	20.59	-2.73	-0.51	14.54	6.48	8.69
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.77	58.60	65.05	66.47	50.82	57.27	60.42	60.03	66.47
	DAY LEQ	69.96		EVENING LEQ	67.07		NIGHT LEQ	68.16	

CNEL	74.99
DAY LEQ	69.96

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	
Avenue R	:Road	
25th Street to 30th 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	16162
Speed	50
Distance	52
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	936.03	19.39	32.32	694.90	3.23	5.39	172.32	26.94	44.90
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	22.42	5.58	7.80	21.12	-2.20	0.02	15.07	7.01	9.23
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	68.30	59.13	65.58	67.00	51.35	57.80	60.95	60.56	67.01
	DAY LEQ	70.49		EVENING LEQ	67.60		NIGHT LEQ	68.69	

CNEL	75.52
DAY LEQ	70.49

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	
Avenue R	:Road	
East of 30th 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	13700
Speed	50
Distance	52
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	793.42	16.44	27.40	589.03	2.74	4.57	146.07	22.83	38.06
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	21.70	4.86	7.08	20.41	-2.92	-0.70	14.35	6.29	8.51
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.58	58.42	64.86	66.29	50.64	57.08	60.23	59.84	66.29
	DAY LEQ	69.77		EVENING LEQ	66.88		NIGHT LEQ	67.98	

CNEL	74.80
DAY LEQ	69.77

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	
Avenue R	:Road	
East of 30th 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	14398
Speed	50
Distance	52
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	833.87	17.28	28.80	619.05	2.88	4.80	153.51	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	8.72
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.80	58.63	65.08	66.50	50.85	57.30	60.45	60.06	66.50
	DAY LEQ	69.99		EVENING LEQ	67.10		NIGHT LEQ	68.19	

CNEL	75.02
DAY LEQ	69.99

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	
Avenue R-8	:Road	
West of 25th 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	2200
Speed	50
Distance	42
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	127.41	2.64	4.40	94.59	0.44	0.73	23.46	3.67	6.11
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	13.76	-3.08	-0.86	12.46	-10.86	-8.64	6.41	-1.65	0.57
Distance	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
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	60.56	51.40	57.85	59.27	43.62	50.06	53.21	52.83	59.27
	DAY LEQ	62.75		EVENING LEQ	59.87		NIGHT LEQ	60.96	

CNEL	67.78	
DAY LEQ	62.75	

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 heavy truck mix.

Existing Plus Project Traffic Noise

8	:Id	
Avenue R-8	:Road	
West of 25th 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	2433
Speed	50
Distance	42
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	140.89	2.92	4.87	104.60	0.49	0.81	25.94	4.05	6.76
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	14.19	-2.64	-0.42	12.90	-10.42	-8.21	6.84	-1.22	1.00
Distance	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
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	61.00	51.84	58.28	59.71	44.06	50.50	53.65	53.26	59.71
	DAY LEQ	63.19		EVENING LEQ	60.30		NIGHT LEQ	61.40	

CNEL	68.22
DAY LEQ	63.19

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 heavy truck mix.

Existing Traffic Noise

9	:Id	
20th Street	:Road	
North of R 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	8300
Speed	50
Distance	42
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	480.69	9.96	16.60	356.86	1.66	2.77	88.49	13.83	23.06
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	19.52	2.69	4.91	18.23	-5.09	-2.88	12.17	4.11	6.33
Distance	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
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	66.33	57.17	63.61	65.04	49.39	55.83	58.98	58.59	65.04
	DAY LEQ	68.52		EVENING LEQ	65.63		NIGHT LEQ	66.73	

CNEL	73.55
DAY LEQ	68.52

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	Vehicle Distribution (Heavy Truck Mix)				ADT	8998
20th Street	: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
North of R Avenue	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	42
		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	521.13	10.80	18.00	386.88	1.80	3.00	95.94	15.00	25.00
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	19.87	3.04	5.26	18.58	-4.74	-2.53	12.52	4.46	6.68
Distance	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
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	66.68	57.52	63.96	65.39	49.74	56.18	59.33	58.95	65.39
	DAY LEQ	68.87		EVENING LEQ	65.98		NIGHT LEQ	67.08	

F	CNEL	73.90	Day hour	97.00
	DAY LEQ	68.87	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
20th Street	:Road
South of R 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	8500
Speed	50
Distance	42
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	492.27	10.20	17.00	365.45	1.70	2.83	90.63	14.17	23.61
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	19.63	2.79	5.01	18.33	-4.99	-2.77	12.28	4.22	6.44
Distance	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
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	66.43	57.27	63.72	65.14	49.49	55.93	59.08	58.70	65.14
	DAY LEQ	68.62		EVENING LEQ	65.74		NIGHT LEQ	66.83	

CNEL	73.65
DAY LEQ	68.62

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	
20th Street	:Road	
South of R 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	8733
Speed	50
Distance	42
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	505.75	10.48	17.47	375.46	1.75	2.91	93.11	14.55	24.26
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	19.74	2.91	5.13	18.45	-4.87	-2.66	12.39	4.33	6.55
Distance	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
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	66.55	57.39	63.83	65.26	49.61	56.05	59.20	58.82	65.26
	DAY LEQ	68.74		EVENING LEQ	65.85		NIGHT LEQ	66.95	

CNEL	73.77
DAY LEQ	68.74

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	
25th Street	:Road	
North of Palmdale Boulevard	: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	5700
Speed	50
Distance	52
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	330.11	6.84	11.40	245.07	1.14	1.90	60.77	9.50	15.83
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	17.89	1.06	3.27	16.60	-6.73	-4.51	10.54	2.48	4.70
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	63.77	54.61	61.05	62.48	46.83	53.27	56.42	56.03	62.48
	DAY LEQ	65.96		EVENING LEQ	63.07		NIGHT LEQ	64.17	

CNEL	70.99
DAY LEQ	65.96

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	
25th Street	:Road	
North of Palmdale Boulevard	: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	5933
Speed	50
Distance	52
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	343.59	7.12	11.87	255.08	1.19	1.98	63.25	9.89	16.48
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	18.06	1.23	3.45	16.77	-6.55	-4.33	10.72	2.66	4.87
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	63.94	54.78	61.23	62.65	47.00	53.45	56.60	56.21	62.65
	DAY LEQ	66.14		EVENING LEQ	63.25		NIGHT LEQ	64.34	

CNEL	71.16	Day hour	99.00
DAY LEQ	66.14	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
25th Street	:Road
Palmdale Boulevard to Project Site	: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	10200
Speed	50
Distance	52
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	590.72	12.24	20.40	438.55	2.04	3.40	108.75	17.00	28.33
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	20.42	3.58	5.80	19.12	-4.20	-1.98	13.07	5.01	7.23
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	66.30	57.14	63.58	65.00	49.35	55.80	58.95	58.56	65.01
	DAY LEQ	68.49		EVENING LEQ	65.60		NIGHT LEQ	66.69	

CNEL	73.52
DAY LEQ	68.49

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	
25th Street	:Road	
Palmdale Boulevard to Project Site	: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	11364
Speed	50
Distance	52
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	658.13	13.64	22.73	488.59	2.27	3.79	121.16	18.94	31.57
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	20.89	4.05	6.27	19.59	-3.73	-1.51	13.54	5.48	7.70
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	66.77	57.60	64.05	65.47	49.82	56.27	59.42	59.03	65.48
	DAY LEQ	68.96		EVENING LEQ	66.07		NIGHT LEQ	67.16	

CNEL	73.99
DAY LEQ	68.96

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

25th Street :Road

Project Site to Avenue R :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	9900
Speed	50
Distance	52
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	573.35	11.88	19.80	425.65	1.98	3.30	105.55	16.50	27.50
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	20.29	3.45	5.67	18.99	-4.33	-2.11	12.94	4.88	7.10
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	66.17	57.01	63.45	64.87	49.22	55.67	58.82	58.43	64.88
	DAY LEQ	68.36		EVENING LEQ	65.47		NIGHT LEQ	66.56	

CNEL	73.39
DAY LEQ	68.36

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	
25th Street	:Road	
Project Site to Avenue R	: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	12926
Speed	50
Distance	52
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	748.62	15.51	25.85	555.77	2.59	4.31	137.82	21.54	35.91
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	21.45	4.61	6.83	20.15	-3.17	-0.95	14.10	6.04	8.26
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	67.33	58.16	64.61	66.03	50.38	56.83	59.98	59.59	66.04
	DAY LEQ	69.52		EVENING LEQ	66.63		NIGHT LEQ	67.72	

CNEL	74.55	
DAY LEQ	69.52	

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	
25th Street	:Road	
Avenue R to Avenue R-8	: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	11500
Speed	55
Distance	52
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	666.01	13.80	23.00	494.44	2.30	3.83	122.61	19.17	31.94
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
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	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81
ADJUSTMENTS									
Flow	20.53	3.69	5.91	19.23	-4.09	-1.87	13.18	5.12	7.33
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	58.30	64.48	66.72	50.52	56.70	60.66	59.73	65.91
	DAY LEQ	69.92		EVENING LEQ	67.22		NIGHT LEQ	67.78	

CNEL	74.70
DAY LEQ	69.92

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	
25th Street	:Road	
Avenue R to Avenue R-8	: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	12664
Speed	55
Distance	52
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	733.42	15.20	25.33	544.48	2.53	4.22	135.02	21.11	35.18
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
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	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81
ADJUSTMENTS									
Flow	20.94	4.11	6.33	19.65	-3.67	-1.45	13.59	5.53	7.75
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	68.43	58.72	64.90	67.14	50.94	57.12	61.08	60.15	66.33
	DAY LEQ	70.33		EVENING LEQ	67.64		NIGHT LEQ	68.20	

CNEL	75.12
DAY LEQ	70.33

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

15 :Id

25th Street :Road

South of Avenue R-8 :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	12600
Speed	55
Distance	52
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	729.72	15.12	25.20	541.73	2.52	4.20	134.34	21.00	35.00
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
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	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81
ADJUSTMENTS									
Flow	20.92	4.09	6.30	19.63	-3.70	-1.48	13.57	5.51	7.73
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	68.41	58.70	64.88	67.11	50.92	57.10	61.06	60.13	66.31
	DAY LEQ	70.31		EVENING LEQ	67.62		NIGHT LEQ	68.18	

CNEL	75.09
DAY LEQ	70.31

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	Vehicle Distribution (Heavy Truck Mix)				ADT	13531
25th Street	:Road	Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow	Speed	55
South of Avenue R-8	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	52
		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	783.65	16.24	27.06	581.77	2.71	4.51	144.27	22.55	37.59
Speed in MPH	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
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	72.73	79.85	83.81	72.73	79.85	83.81	72.73	79.85	83.81
ADJUSTMENTS									
Flow	21.23	4.40	6.61	19.94	-3.39	-1.17	13.88	5.82	8.04
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	68.72	59.01	65.19	67.42	51.23	57.41	61.37	60.44	66.62
	DAY LEQ	70.62		EVENING LEQ	67.93		NIGHT LEQ	68.49	

CNEL	75.40	Day hour	0.00
DAY LEQ	70.62	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	
30th Street	:Road	
North of Avenue R	: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	7500
Speed	50
Distance	52
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	434.36	9.00	15.00	322.46	1.50	2.50	79.96	12.50	20.83
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	19.08	2.25	4.47	17.79	-5.53	-3.32	11.73	3.67	5.89
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	64.96	55.80	62.25	63.67	48.02	54.46	57.61	57.23	63.67
	DAY LEQ	67.15		EVENING LEQ	64.27		NIGHT LEQ	65.36	

CNEL	72.18
DAY LEQ	67.15

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	
30th Street	:Road	
North of Avenue R	: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	8431
Speed	50
Distance	52
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	488.28	10.12	16.86	362.50	1.69	2.81	89.89	14.05	23.42
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	19.59	2.76	4.97	18.30	-5.03	-2.81	12.24	4.18	6.40
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	65.47	56.31	62.75	64.18	48.53	54.97	58.12	57.74	64.18
	DAY LEQ	67.66		EVENING LEQ	64.77		NIGHT LEQ	65.87	

CNEL	72.69
DAY LEQ	67.66

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

17	:Id	
30th Street	:Road	
South of Avenur R	: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	6800
Speed	50
Distance	52
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	393.82	8.16	13.60	292.36	1.36	2.27	72.50	11.33	18.89
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	18.66	1.82	4.04	17.36	-5.96	-3.74	11.31	3.25	5.47
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	64.54	55.37	61.82	63.24	47.59	54.04	57.19	56.80	63.25
	DAY LEQ	66.73		EVENING LEQ	63.84		NIGHT LEQ	64.93	

CNEL	71.76
DAY LEQ	66.73

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

17	:Id	Vehicle Distribution (Heavy Truck Mix)				ADT	7033
30th Street	: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
South of Avenur R	:Segment	Automobiles	75.54	14.02	10.43	92.00	Distance	52
		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	407.30	8.44	14.07	302.37	1.41	2.34	74.98	11.72	19.54
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	18.80	1.97	4.19	17.51	-5.81	-3.60	11.45	3.39	5.61
Distance	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24	-0.24
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	64.68	55.52	61.97	63.39	47.74	54.18	57.33	56.95	63.39
	DAY LEQ	66.87		EVENING LEQ	63.99		NIGHT LEQ	65.08	

CNEL	71.90	Day hour	0.00
DAY LEQ	66.87	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 F

SOUNDPLAN INPUTS AND OUTPUTS

									Frequency spectrum [dB(A)]				
Source name	Reference	Level		Level		Level			31	63	125	250	500
			dB(A)		dB(A)		dB(A)		Hz	Hz	Hz	Hz	Hz
Que	Lw/m	Day	50	Eve	50	Night	55.7						
Que	Lw/m	Day	50	Eve	50	Night	55.7						
Car Wash Blower	Lw/	Day	106.8	Eve	106.8	Night	55.7						
Vacuum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
Vacuum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
Vaccum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
Vaccum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
Vacuum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
Vacuum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
Vacuum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
Vacuum	Lw/unit	Day	95	Eve	95	Night	55.7	-		38.5	38.4	38.9	40.1
HVAC	Lw/unit	Day	78.7	Eve	78.7	Night	55.7		19.5	23.5	36.5	41.5	35.5
HVAC	Lw/unit	Day	78.7	Eve	78.7	Night	55.7		19.5	23.5	36.5	41.5	35.5
HVAC	Lw/unit	Day	78.7	Eve	78.7	Night	55.7		19.5	23.5	36.5	41.5	35.5

1 kHz	2 kHz	4 kHz	8 kHz	16 kHz
47.6	53.1	45.6	46.3	-
47.6	53.1	45.6	46.3	-
47.6	53.1	45.6	46.3	-
47.6	53.1	45.6	46.3	-
47.6	53.1	45.6	46.3	-
47.6	53.1	45.6	46.3	-
47.6	53.1	45.6	46.3	-
47.6	53.1	45.6	46.3	-
46.5	48.5	47.5	49.5	49.5
46.5	48.5	47.5	49.5	49.5
46.5	48.5	47.5	49.5	49.5

Noise emissions of parking lot traffic

Name	Parking bays	Movements			Corrections		Level	
		Day	Evening	Night	Parking lot type	dB(A)	Day dB(A)	Evening dB(A)
1	11.0	7.100	0.000	0.000		0.0	55.9	0.0
2	4.0	16.300	8.000	0.000		0.0	55.1	52.1
3	11.0	16.300	8.000	0.000		0.0	59.5	56.4
4	16.0	16.300	8.000	0.000		0.0	61.2	58.1

Receiver list

No.	Receiver name	Building side	Floor	Limit Lden dB(A)	Level w/o NP Lden dB(A)	Level w NP Lden dB(A)	Difference Lden dB	Conflict Day dB
1	1	-	EG	-	51.9	51.9	0.1	-
2	2	-	EG	-	64.8	58.6	-6.2	-
3	3	-	EG	-	55.8	51.8	-4.0	-
4	4	-	EG	-	58.4	58.4	0.0	-
5	5	-	EG	-	53.2	53.2	0.0	-
6	6	-	EG	-	58.6	58.6	0.0	-
7	7	-	EG	-	63.0	63.0	0.1	-
8	8	-	EG	-	67.8	60.9	-6.9	-
9	9	-	EG	-	53.5	53.5	0.0	-

APPENDIX G

VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS

Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Multi-family Residential to the North		
Address:			

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 =	38.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.112	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)		Date: 8/19/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Multi-family Residential to the North		
Address:			
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 =	38.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.047	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Single-family Residential to the East		
Address:			
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 Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.021	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)		Date: 8/19/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Single-family Residential to the East		
Address:			
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 Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.009	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Single-family Residential to the South		
Address:			

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 =	106.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.024	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)		Date: 8/19/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Single-family Residential to the South		
Address:			
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 Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.009	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)		Date: 8/19/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	School to the West (Solar Carports)		
Address:			
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 =	355.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.004	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	School to the West (Solar Carports)		
Address:			

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 =	355.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.002	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	School to the Northwest (Buildings)		
Address:			

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 =	389.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.003	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	School to the Northwest (Buildings)		
Address:			

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 =	389.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.001	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Annoyance Threshold		
Address:			

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 =	41.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.100	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19524 Beyond Food Mart Palmdale (25th/R Avenue)	Date:	8/19/22
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Annoyance Threshold		
Address:			

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 =	23.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.101	IN/SEC	OUTPUT IN BLUE



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