NOISE IMPACT ANALYSIS

14830 CARMENITA ROAD WAREHOUSE PROJECT

CITY OF NORWALK

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Norwalk
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
ONAC	Federal Office of Noise Abatement and Control
OSB	Oriented Strand Board
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
UMTA	Federal Urban Mass Transit Administration
VdB	Vibration velocity level in decibels

1.0 EXECUTIVE SUMMARY

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the noise impacts associated with the proposed 14830 Carmenita Road Warehouse Project (proposed project). The following is provided in this report:

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

1.2 Site Location and Study Area

The project site is located at 14830 Carmenita Road, which is located on the eastern edge of the City of Norwalk (City). The approximately 7.03-acre project site is currently developed with two multi-tenant warehouse buildings that total 89,870 square feet and are both occupied by RV Storage Depot, an RV storage company. In addition to the two buildings, the rest of the site is paved with asphalt concrete and no landscaping currently exists. Direct access to the project site is from a driveway on Excelsior Drive and there is a reciprocal access driveway through the adjacent property to the west via a driveway on Carmenita Road.

The project site is bounded by industrial uses to the north, east, south, and west. The property that is immediately adjacent to the west is controlled by the applicant and as such the proposed project is considered an expansion of the existing industrial property. The project study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptor to the project site is a home on the northwest corner of the intersection of Carmenita Road and Mapledale Street that is located as near as 980 feet northwest of the proposed expansion area. The nearest school is the Ramona Preschool that is located as near as 1,500 feet west of the project site.

1.3 Proposed Project Description

The proposed project consists of the demolition of the two existing warehouse buildings and pavement on the project site and construction of a 138,972 square foot warehouse building that would consist of 135,942 square feet or warehouse space, 3,715 square feet of ground floor office space and 3,030 square feet of mezzanine office space. Other than the mezzanine, the building would be single-story and would

have a maximum height of 45 feet at the parapet. It should be noted that the analysis provided in this Report is based on a worst-case conservative analysis of a 144,901 square foot warehouse building.

The proposed warehouse would have a loading dock area on the south side of the building with 22 loading dock doors and a backup diesel generator would be located in the eastern portion of the loading dock area. There would also be 141 auto parking stalls on the south and east sides of the project site. The proposed site plan is shown in Figure 2.

The operational hours of the proposed warehouse will be 24 hours per day and seven days a week.

1.4 Standard Noise Regulatory Conditions

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

City of Norwalk Noise and Vibration Regulations

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

- Section 9.04.120: Ambient Noise Levels
- Section 9.04.140: General Noise Regulations
- Section 9.04.150(E): Construction Noise Standards

State of California Noise Regulations

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

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

1.5 Summary of Analysis Results

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

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

Less than significant impact.

Generation of excessive groundborne vibration or groundborne noise levels?

Potentially significant impact. Mitigation Measure 1 is provided to reduce impacts to less than significant levels.

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

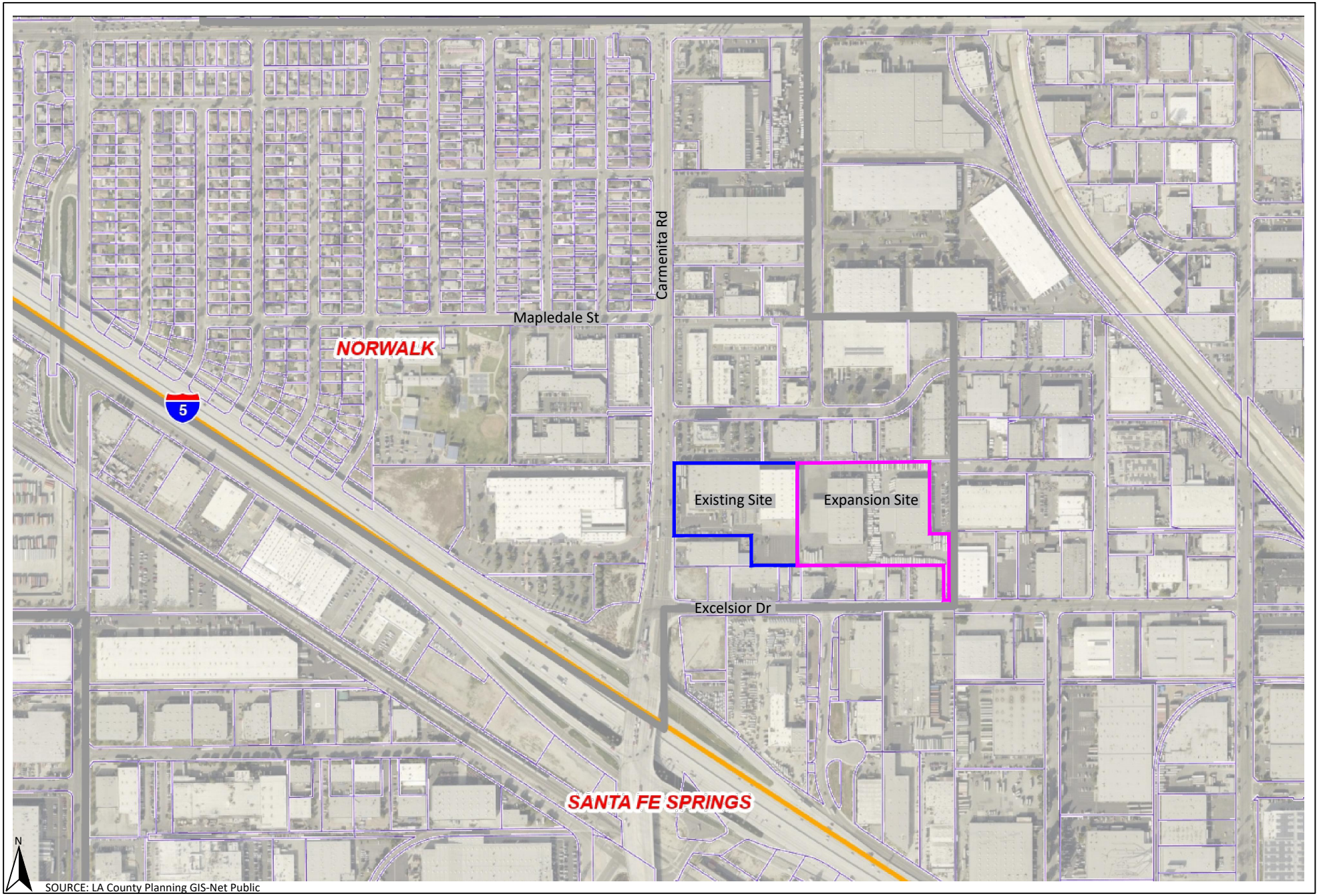
Less than significant impact.

1.6 Mitigation Measures for the Proposed Project

This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above and through implementation of the following mitigation all noise and vibration impacts would be reduced to less than significant levels.

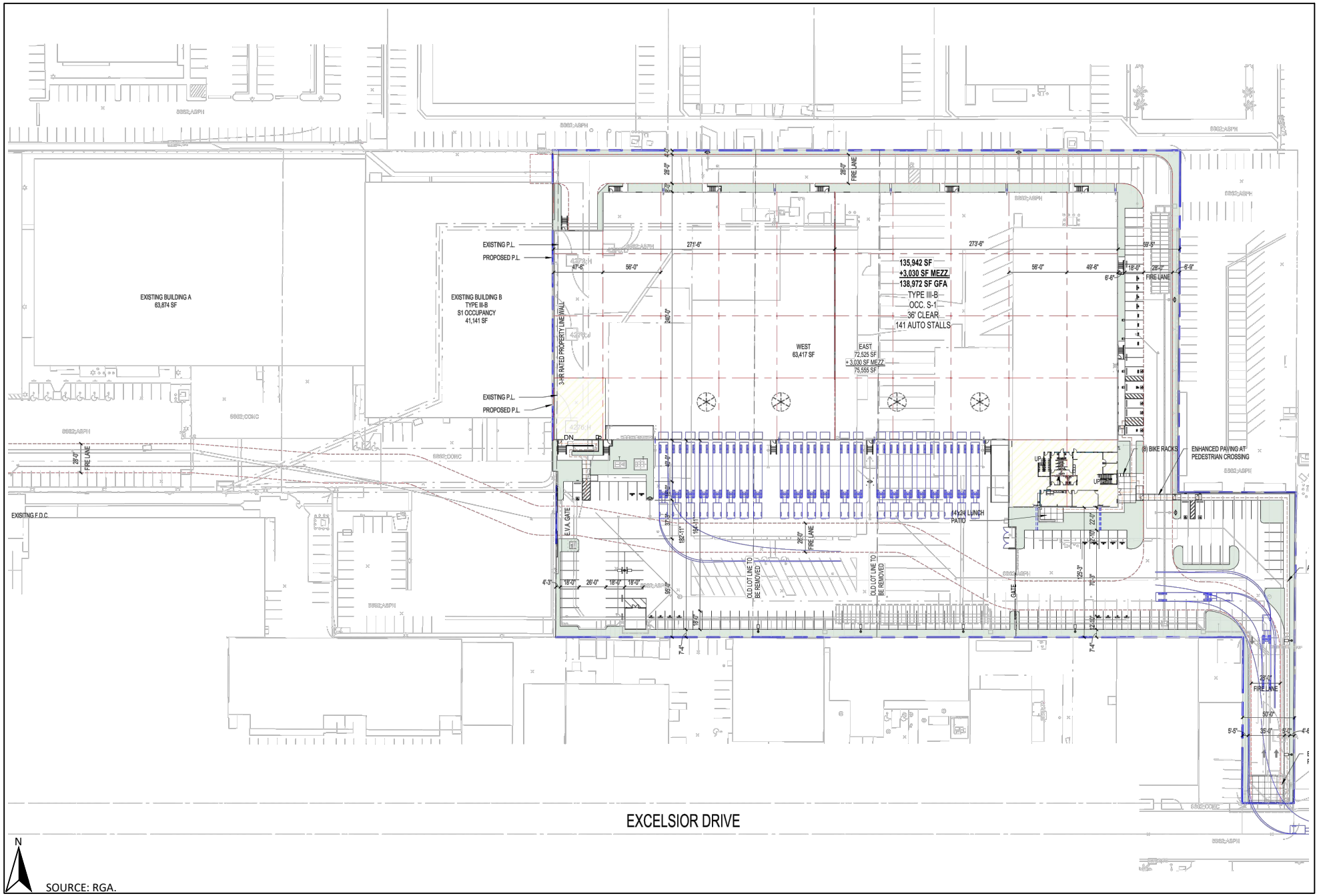
Mitigation Measure 1:

The project applicant shall require that all construction contractors restrict the operation of any large bulldozers that is powered by a greater than 150 horse power engine or any vibratory rollers from operating within 25 feet of any off-site structure. The project applicant shall require the use of a small bulldozer (i.e., D1, D2, or D3 dozers) or other type of equipment that is less than 150 horsepower to perform all demolition and grading activities that are located within 15 feet of any off-site structure.



VISTA ENVIRONMENTAL

Figure 1
Project Location Map



SOURCE: RGA.

VISTA ENVIRONMENTAL

Figure 2
Site Plan

2.0 NOISE FUNDAMENTALS

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

2.1 Noise Descriptors

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

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

2.2 Tone Noise

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

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

2.3 Noise Propagation

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

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

2.4 Ground Absorption

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

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

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

3.1 Vibration Descriptors

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

3.2 Vibration Perception

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

3.3 Vibration Propagation

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

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

4.0 REGULATORY SETTING

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

4.1 Federal Regulations

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

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

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

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

Table A – FTA Project Effects on Cumulative Noise Exposure

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

Source: Federal Transit Administration, 2018.

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

Table B – FTA Construction Noise Criteria

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

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

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

4.2 State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

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

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

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

Vibration Standards

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

Caltrans prepared the *Transportation and Construction Vibration Guidance Manual*, April 2020. The Manual provides practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects. However, this Manual is also used as a reference point by many lead agencies and CEQA practitioners throughout California, as it provides numeric thresholds for vibration impacts. Thresholds are established for continuous (construction-related) and transient (transportation-related) sources of vibration, which found that the human response becomes distinctly perceptible at 0.24 inch per second PPV for transient sources and 0.035 inch per second PPV for continuous sources. The Manual also found that vibration may potentially damage industrial buildings at 2.0 inch per second PPV and older residential structures at 0.5 inch per second PPV.

4.3 Local Regulations

The *City of Norwalk General Plan*, adopted February 29, 1996 and *The Norwalk Municipal Code,* December 5, 2023, establishes the following applicable policies related to noise and vibration.

City of Norwalk General Plan

The following lists the applicable objectives and policies for the proposed project from the City of Norwalk General Plan Noise Element.

Objectives

- To have noise levels in all areas of the City meet the minimum standards of land use compatibility established in the Noise Element, especially adjacent to noise sensitive uses.
- To promote the reduction of noise impacts from existing transportation to a level of compatibility with adjoining land uses.

Policies

- Encourage compliance with state and federal legislation designed to abate and control noise pollution.
- Existing noise sources that exceed the appropriate maximum standard shall be encouraged to reduce their noise level to at least the land use compatibility standards of the noise element.
- Discourage truck traffic from using local residential streets.

- Encourage the use of acoustical materials in a new residential and community development where noise levels exceed the compatibility standards of the Noise Element.
- Encourage railroads to institute noise reduction techniques to reduce impacts on adjoining land uses.
- Encourage the California Department of Transportation (Caltrans) to continue programs which lead to the reduction of noise levels on I-5, I-605, I-105 and the I-91.
- Ensure that proposed noise sources are reduced below a level of significance and properly muffled to prevent noise impacts on neighboring properties.

City of Norwalk Municipal Code

The City of Norwalk Municipal Code establishes the following applicable standards related to noise and vibration.

Section 9.04.100 – Noise Prohibited

No person shall make, continue or cause to made or continued, any loud, unnecessary or unusual noise, or any noise which either annoys, disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the limits of the City.

Section 9.04.120 – Ambient Noise Level

A. "Ambient noise" means the all-encompassing noise associated with a given environment being usually a composite of sounds with many sources near and far, without inclusion of intruding noises from isolated identifiable sources.

B. Unless sound-level meter readings determine the ambient noise level in a given environment to be higher, the ambient noise levels in Norwalk are presumed to be as follows:

Decibels	**Time**	**Zone**
45 dBA	Night	Residential
55 dBA	Day	Residential
60 dBA	Anytime	Commercial
65 dBA	Anytime	All other zones

Section 9.04.140 – General Noise Regulations

A. Use Restricted. Notwithstanding any other provision of this article and in addition to this article, it is unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary or unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

B. Prima Facie Violation. An average noise level reading measured pursuant to Section 9.04.130 which exceeds the ambient noise level at the property line of any residential land (or if a condominium or apartment house, within any adjoining apartment) **by more than five decibels** shall be deemed to be prima fade evidence of a violation of the provisions of this article.

Section 9.04.150 – Particular Acts

In addition to the provisions of Section 9.04.140, the following specific acts are declared to be unlawful:

D. Exhausts. The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, motor boat or motor vehicle, except through a muffler or other device which effectively prevents loud or explosive noises;

E. Construction or Repairing of Buildings. The erection (including excavation), demolition, alteration, construction or repair of any building other than between the hours of seven a.m. and six p.m. or sunset, whichever is later, except in the case of urgent necessity in the interest of public health and safety, and then only with a permit from the Director of Building and Safety, which permit may be granted for a period not to exceed three days while the emergency condition continues, and which permit may be renewed for periods of three days or less while the emergency continues; if the Director of Building and Safety should determine that public health, safety, comfort and convenience will not be impaired by the erection, demolition, alteration or repair of any building or the excavation of sites other than streets and highways within the hours of six p.m. or sunset, whichever is later, and seven a.m., or any part, and that substantial loss or inconvenience would result to any party in interest denied permission to do so, he or she may grant permission for such work, or any part, to be done, within the hours of six p.m. or sunset, whichever is later, and seven a.m., or any day, or at such times within such hours as he or she shall fix in accordance with such determination;

F. Pile Drivers, Hammers, Etc. The operation between the hours of six p.m. or sunset, whichever is later, and seven a.m. of any pile driver, steam shovel, pneumatic hammer, derrick hoist, or other appliances, the use of which is attended by loud or unusual noise, unless the Director of Building and Safety grants permission pursuant to the standards provided in subsection E of this section.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by industrial noises (i.e., compressors, forklifts and trucks) from the nearby warehouses as well as from vehicles operating on the nearby roads. The following describes the measurement procedures and noise measurement results.

5.1 Noise Measurement Methodology

Noise Measurement Equipment

The noise measurements were taken using a Larson-Davis Model 831 Type 1 precision sound level meter programmed in "slow" mode to record noise levels in "A" weighted form as well as the frequency spectrum of the noise broken down into 1/3 octaves. The sound level meter and microphone were mounted on a tripod five feet above the ground and were equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. The noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (ANSI S1.4-2014 standard).

Noise Measurement Locations

The noise monitoring locations were selected in order to obtain the existing noise levels on the project site and at the nearby sensitive receptors. Descriptions of the noise monitoring sites are provided below in Table C and are shown in Figure 3. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 11:01 a.m. and 11:58 a.m. on Tuesday, February 13, 2024. During the noise measurements, the sky was partly cloudy, the temperature was 64 degrees Fahrenheit, the humidity was 49 percent, barometric pressure was 29.90 inches of mercury, and the wind was blowing at an average rate of two miles per hour.

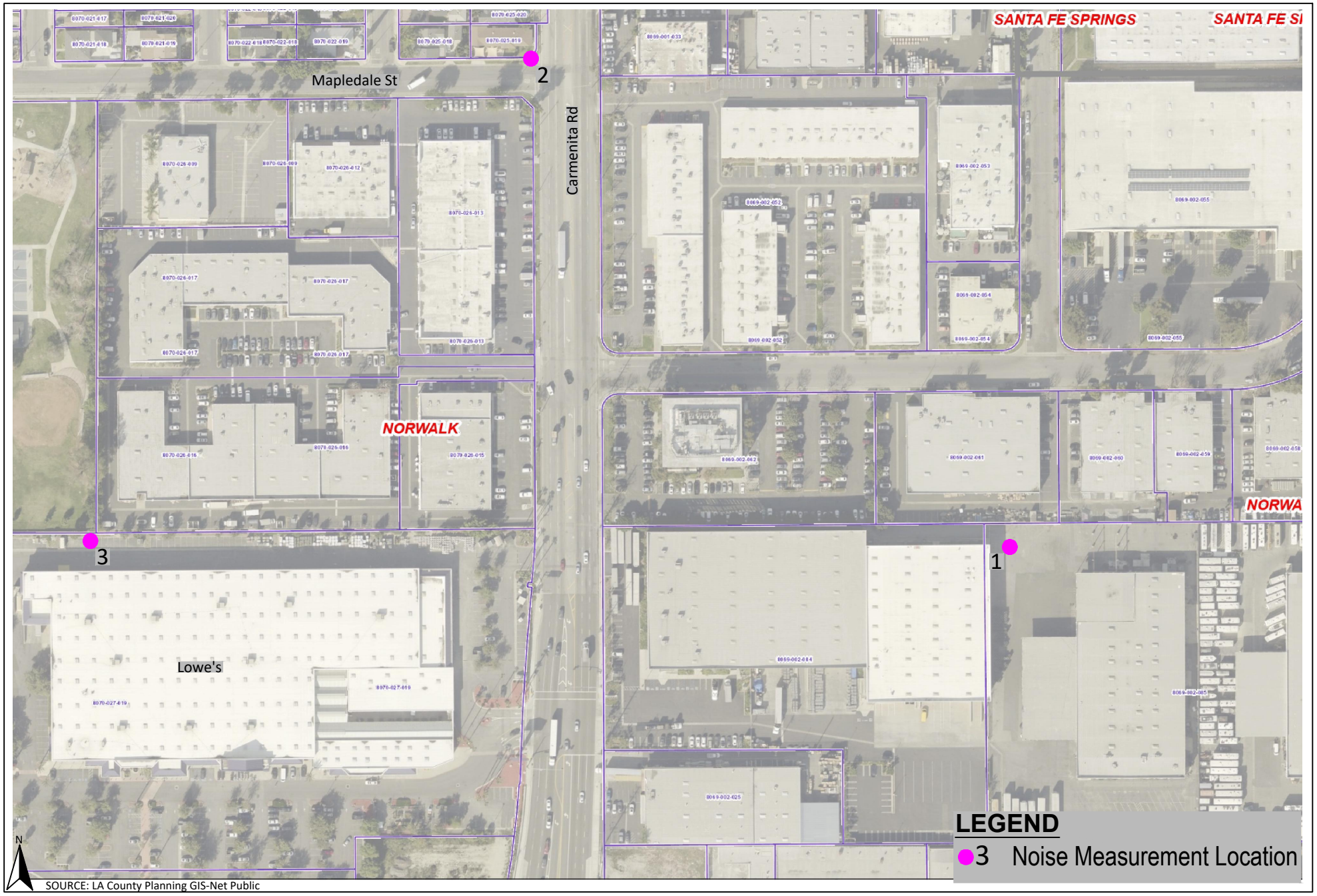
5.2 Noise Measurement Results

The results of the noise level measurements are presented in Table C and the noise monitoring data printouts are included in Appendix B.

Table C – Existing (Ambient) Noise Measurement Results

Site No.	Description	Primary Noise Source	Start Time of Measurement	Measured Noise Level	
				dBA Leq	dBA Lmax
1	Located near the northwest corner of the project site.	Air compressor	11:01 a.m.	55.1	65.8
2	Located northwest of project site, in front of nearest home at 14527 Carmenita Road.	Vehicles on Carmenita Road	11:21 a.m.	73.2	83.8
3	Located west of the project site, near southeast corner of Ramona Park.	Vehicles on alley behind Lowe's	11:43 a.m.	58.2	75.0

Notes: Noise measurements taken with a Larson-Davis Model 831 Type 1 precision sound level meter on Tuesday, February 13, 2024.



VISTA ENVIRONMENTAL

Figure 3
Field Noise Monitoring Locations

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table D below provides a list of the construction equipment anticipated to be used for each phase of construction as detailed in the *Air Quality, Energy and Greenhouse Gas Emissions Impact Analysis for the Carmenita Norwalk Project* (Air Quality Analysis), prepared by EPD Solutions, May, 2024.

Table D – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Demolition				
Concrete/Industrial Saw	1	20	90	90
Excavator	3	40	85	81
Rubber Tired Dozer	2	40	85	83
Site Preparation				
Rubber Tired Dozers	3	40	85	82
Crawler Tractors	4	40	84	N/A
Grading				
Excavator	1	40	85	81
Grader	1	40	85	N/A
Rubber Tired Dozer	1	40	85	82
Crawler Tractors	3	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	3	40	85	83
Generator	1	20	90	90
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Backhoe	1	40	80	78
Welder	1	40	73	74
Paving				
Pavers	2	50	85	77
Paving Equipment	2	50	85	77
Rollers	2	20	85	80
Architectural Coating				
Air Compressor	1	40	80	78

Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.
Source: Federal Highway Administration, 2006 and CalEEMod default equipment mix.

Table D also shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearest homes have been calculated according to the equipment noise levels and usage factors listed in Table D and through use of the RCNM. For each phase of construction, all construction equipment was analyzed based on being placed in the middle of the project site, which is based on the analysis methodology detailed in the *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual), prepared by FTA, September 2018, for a General Assessment. The RCNM model printouts are provided in Appendix C.

6.2 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the project site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage to the structures at the highest levels. Table E gives approximate vibration levels for particular construction equipment that is provided by the FTA, however it should be noted that not all of these equipment types would be used during construction of the proposed project. The data in Table E provides a reasonable estimate for a wide range of soil conditions.

Table E – Vibration Source Levels for Construction Equipment

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

Source: Federal Transit Administration, 2018.

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

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

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

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

7.2 Generation of Noise Levels in Excess of Standards

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

Construction-Related Noise

The construction activities for the proposed project are anticipated to include demolition of the existing of the two existing warehouse buildings and pavement on the project site, site preparation and grading of the project site, building construction of the proposed warehouse, paving of truck loading area, driveways, and parking lots, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptor to the project site is a home on the northwest corner of the intersection of Carmenita Road and Mapledale Street that is located as near as 980 feet northwest of the proposed expansion area. The nearest school is the Ramona Preschool that is located as near as 1,500 feet west of the project site and although not considered a sensitive receptor, there are existing industrial buildings that are adjacent to the south property line of the project site.

Section 9.04.150(E) of the City's Municipal Code defines the acceptable hours of construction activities as between 7:00 a.m. and 6:00 p.m., or sunset, whichever is later. In order to determine if the proposed construction activities would create a significant substantial temporary noise increase, the FTA construction noise criteria thresholds detailed above in Section 4.1 have been utilized, which details, local noise ordinances usually relate to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the noise impacts of a construction project. As such, the FTA construction noise criteria shown above in Table B, has been utilized to assess the proposed project's construction noise impacts and shows that a significant construction noise impact would occur if construction noise exceeds 80 dBA during the daytime at the nearest home and school or 90 dBA at the nearest industrial building.

Construction noise impacts to the nearest home, school and industrial building have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table D – Construction Equipment Noise Emissions and Usage Factors. The results are shown below in Table F and the RCNM printouts are provided in Appendix C.

Table F – Construction Noise Levels at the Nearby Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at:		
	Nearest Home to Northwest[1]	Nearest School to West[2]	Nearest Industrial Building to South[3]
Demolition	58	55	73
Site Preparation	59	57	74
Grading	59	56	74
Building Construction	58	56	74
Paving	53	56	74
Architectural Coatings	45	43	60
FTA Construction Noise Threshold[3]	**80**	**80**	**90**
Exceed Thresholds?	**No**	**No**	**No**

Notes:
[1] The nearest home to the northwest is located as near as 1,380 feet from the center of the project site.
[2] The nearest school to the west is located as near as 1,800 feet from the center of the project site.
[2] The nearest industrial building to the south is located as near as 235 feet from the center of the project site.
[3] The FTA Construction noise thresholds are detailed above in Table B.
Source: RCNM, Federal Highway Administration, 2006

Table F shows that greatest construction noise impacts would occur during the site preparation phase, with a noise level as high as 59 dBA Leq at the nearest home to the northwest, as high as 57 dBA Leq at the nearest school to the west, and as high as 74 dBA Leq at the nearest industrial building to the south. The calculated construction noise levels shown in Table F are within the FTA construction noise standards of 80 dBA for the nearby homes and classrooms and 90 dBA for the nearby industrial uses. Therefore, through adherence to the limitation of allowable construction times provided in Section 9.04.150(E) of the Municipal Code and adherence to the FTA construction noise criteria, construction-related noise levels would not create a substantial temporary increase in ambient noise levels from construction of the proposed project. Impacts would be less than significant.

Operational-Related Noise

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

Roadway Vehicular Noise

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed warehouse would be located in an industrial area that is surrounded by other warehouses. The proposed project would not alter the speed limit on any existing roadway. According to the *Carmenita Norwalk Warehouse Project Trip Generation and Vehicle Miles Traveled (VMT) Screening Analysis* (Traffic Analysis), prepared by EPD Solutions, Inc., May 2024, the proposed warehouse would generate 338 ADT, which would result in a net increase of 184 ADT. The net

increase would consist of 99 passenger vehicles, 30 2-axle trucks, 9 3-axle trucks, and 46 4+-axle trucks, which results in a vehicle mix of 54 percent automobiles and 46 percent trucks. It should be noted that project site is located in an industrial area and is surrounded by similar warehouse uses that generate similar vehicle mixes as the proposed project. As such, the proposed project's potential offsite noise impacts have been focused on the noise impacts associated with the change of volume of traffic that would occur with development of the proposed project.

Neither the General Plan nor the Municipal Code defines what constitutes a "substantial permanent increase to ambient noise levels". As such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table A that shows that the project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing roadway noise levels. Based on the noise measurement at the nearest home at 14527 Carmenita Road of 73.2 dBA Leq (see Table C, above), the project-related vehicle noise increase threshold would be plus 1 dB.

According to the Traffic Analysis, operation of the proposed project would result in a net increase of 184 ADT. According to the *Traffic Impact Study Bridge Univar Industrial Warehouse 13900 Carmenita Road,* prepared by Crown City Engineers, Inc., October 14, 2019, Carmenita Road north of Interstate 5 had 35,300 ADT for year 2021 conditions. The proposed project would contribute up to 0.52 percent of the ADT on Carmenita Road. In order for project-generated vehicular traffic to increase the noise level on any of the nearby roadways by 3 dB, the ADT would have to double, or by 1.5 dB, the ADT would have to increase by 50 percent. As such, the proposed project's roadway noise impacts would be well below the FTA's project-related noise increase threshold of plus 1 dB detailed above. Therefore, operational roadway noise impacts would be less than significant.

Onsite Noise Sources

The operation of the proposed warehouse building may create an increase in onsite noise levels from onsite truck travel and truck loading area activities, rooftop mechanical equipment, forklift activities, a backup generator and automobile parking lot activities. Since the future tenant of the proposed warehouse is not known at this time, it is not possible to know exactly the number and type of mechanical ventilation units that may or may not include air conditioner compressors that would be installed on the proposed warehouse, however the project applicant owns the two warehouses to the west, which only provide air conditioning units for the office portion of each warehouse and aerial photos of these warehouses show that the west warehouse has five air conditioning units and the adjacent warehouse to the west has one air conditioning unit, so the proposed warehouse will likely have a similar amount of air conditioning units.

Section 9.04.140(B) of the Municipal Code limits noise to residential properties to the ambient noise level plus 5 dBA. Section 9.04.120(B) of the Municipal Code defines ambient noise level as the higher of either sound-level meter readings or 45 dBA during the night and 55 dBA during the day at residential properties, 60 dBA anytime at commercial properties, and 65 dBA anytime at all other zones. Although the noise limits provided in Section 9.04.140(B) of the Municipal Code only apply to residential properties, this analysis has also applied these noise limits to the nearest school and warehouse, in order to provide a conservative analysis. In addition, although the noise measurements shown above in Table C, measured noise levels that exceed the presumed ambient noise levels provided in Section 9.04.120, the presumed ambient noise levels have been utilized to provide a conservative analysis. As such, the applicable noise standards for the nearest home to the northwest is 60 dBA during the daytime (i.e. 55 dBA ambient plus

5 dBA) and 50 dBA during the nighttime, 65 dBA anytime of the day at the at the school to west, and 70 dBA anytime of the day at the industrial to the south.

In order to determine the noise impacts from the operation of rooftop mechanical equipment, parking lots, forklifts, and onsite truck travel and loading area, reference noise measurements were taken of each noise source and are shown in Table G and the reference noise measurements are provided in Appendix D. The rooftop equipment was based on a reference noise measurement on the roof of The Motorcycle Company, approximately 6 feet from a rooftop air conditioning unit and located within 40 feet of five other air conditioning units, which provides a similar condition to the number of units that will likely be installed on the proposed project. The auto parking lot was based on a reference noise measurement taken approximately 140 feet from the entrance to a Walmart, which provides for a worst case analysis, since each parking space in front of a Walmart likely has a car movement at least once per hour, however the auto parking spaces at the proposed project likely will only have car movements every 8 hours, at the beginning or end of a work shift. The onsite truck loading area was based on a reference noise measurement taken 10 feet from a Walmart truck loading area, which captured noise from a truck unloading and trailer transfer as well as noise from a mechanical sweeper operating in the truck loading area. The forklift was based on a reference noise measurement taken approximately 10 feet from a forklift operating in the pallet stacking area at a Walmart, which had a backup beeper that would automatically turn on every time the forklift was moving in reverse. In order to determine the noise impacts from operation of the approximately 238 horsepower (150 Kilowatt) backup generator, the CAT GC Enclosures Spec sheet was utilized, which is provided in Appendix F and shows the Model DE150 GC creates a noise level of 81.1 dBA at one meter at 100 percent load, which is also shown in Table G.

Table G – Operational Noise Levels at the Nearby Sensitive Receptors

	At Home to Northwest		At School to West		At Industrial to South	
Noise Source	**Distance - Source to Receiver (feet)**	**Noise Level[1] (dBA Leq)**	**Distance - Source to Receiver (feet)**	**Noise Level[1] (dBA Leq)**	**Distance - Source to Receiver (feet)**	**Noise Level[1] (dBA Leq)**
Rooftop Equipment[2]	1,020	20	1,510	17	190	35
Auto Parking Lot[3]	1,230	15	1,520	13	8	59
Onsite Truck Travel and Loading Area[4]	1,240	21	1,510	20	30	54
Forklift[5]	1,240	33	1,510	31	30	65
Generator[6]	1,540	28	1,930	26	170	47
Combined Noise Levels		**34**		**32**		**66**
City Noise Standards (Day/Night)[7]		**60/50**		**65/65**		**70/70**
Exceed City Noise Standard (Day/Night)?		**No/No**		**No/No**		**No/No**

Notes:

[1] The noise levels were calculated through use of standard geometric spreading of noise from a point source with a drop-off rate of 6.0 dB for each doubling of the distance between the source and receiver. Does not account for noise reduction features, such as buildings located between noise source and receptor.

[2] The rooftop equipment based on a reference noise measurement of 65.1 dBA Leq at 6 feet.

[3] The auto parking lot based on a reference noise measurement of 63.1 dBA Leq at 5 feet.

[4] The onsite truck travel and loading area based on a reference noise measurement of 63.3 dBA Leq at 10 feet.

[5] The forklift based on a reference noise measurement of 74.4 dBA Leq at 10 feet.

[6] The generator based on the CAT specification sheets of 81.1 dBA at one meter.

[7] City Noise Standard obtained from Section 9.04.140(B) of the Municipal Code of Ambient plus 5 dBA. Ambient noise levels obtained from Section 9.04.120 of the Municipal Code.

Table G shows that the proposed project's worst-case operational noise from the simultaneous operation of all noise sources on the project site would create noise levels of 34 dBA at the nearest home, 32 dBA at the nearest school and 66 dBA at the nearest industrial building.

According to the *Technical Noise Supplement to the Traffic Noise Analysis Protocol,* prepared by Caltrans, September 2013, when you add unequal sound pressure levels such as the combined project noise levels to the ambient noise levels, when the two decibel values differ by: 1) 0 or 1 dB, 3 dB is added to the higher value; 2) 2 or 3 dB, 2 dB is added to the higher value; 3) 4 to 9 dB, 1 dB is added to the higher value; and 4) 10 dB or more, 0 dB is added to the higher value. The measured ambient noise levels shown above in Table C, shows that the noise level at the home to northwest is 73.2 dBA Leq, the school to the west is 58.2 dBA Leq, and at the industrial to the south is 55.1 dBA Leq. All of the combined operational noise levels shown in Table G vary by more than 10 dBA from the measured ambient noise levels. As such, the combination of the combined operational noise levels with the ambient noise levels would not alter, whichever is higher of the two noise levels.

All calculated combined operational noise levels shown in Table G are within the ambient plus 5 dBA noise standard provided in Section 9.04.140(B) of the Municipal Code. Therefore, operational onsite noise impacts would be less than significant.

Level of Significance

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

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

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include demolition of the two existing warehouse buildings and pavement on the project site, site preparation and grading of the project site, building construction of the proposed warehouse, paving of truck loading area, driveways, and parking lots, and application of architectural coatings. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest offsite structures are the industrial buildings that are adjacent to the south property line.

Since the City does not provide any limits to the vibration levels that may be created from construction activities, the vibration thresholds provided in Caltrans Guidance Manual that is discussed above in Section 4.2 have been utilized and include a damage to the nearby industrial building threshold of 2.0 inch per second PPV and a human annoyance vibration threshold from transient sources of 0.24 inch per second PPV.

The primary source of vibration during construction would be from the operation of a bulldozer and a vibratory roller. From Table E above a large bulldozer would create a vibration level of 0.089 inch per second PPV at 25 feet and a vibratory roller would create a vibration level of 0.21 inch per second at 25 feet. The nearest structures to the project site are the industrial buildings that are adjacent to the south property line, where the effective distance equipment could operate next to these buildings is around 3

feet. Based on typical propagation rates, the vibration level at the nearest structure from a large bulldozer would be 0.92 inch per second PPV and from a vibratory roller would be 2.16 inch per second. The vibration level at the nearest structure would exceed both the Caltrans building damage threshold of 2.0 inch per second PPV and the Caltrans human annoyance threshold of 0.24 inch per second PPV. This would be considered a significant impact.

Mitigation Measure 1 is provided that would require that the applicant to restrict the use of a large dozer, vibratory roller or any other large earthmoving equipment within 25 feet of any offsite structure. For all grading activities that occur within 25 feet of any offsite structure, the applicant shall require the use of a small dozer or other type of equipment that is less than 150 horsepower. It should be noted that ground compaction can be accomplished by adding water to the area and then driving a wheeled dozer or other equipment back and forth over the dirt until proper compaction can be reached (the author, Greg Tonkovich is a licensed General Contractor (General 'B' License No. 814036) and has worked on many excavation/grading projects with over 30 years of experience in the construction industry.

From Table E above a small bulldozer would create a vibration level of 0.003 inch-per-second PPV at 25 feet. Based on typical propagation rates, the vibration level at the nearest structure would be 0.031 inch per second PPV, which would be below the 0.24 inch per second PPV human annoyance threshold detailed above. Therefore, with implementation of Mitigation Measure 1, a less than significant vibration impact is anticipated from construction of the proposed project.

Operations-Related Vibration Impacts

The proposed project would consist of the development of a warehouse building. The proposed project would result in trucks operating on the project site, which is a known source of vibration. Caltrans has done extensive research on vibration level created along freeways and State Routes and their vibration measurements of roads have never exceeded 0.08 inches per second PPV 15 feet from the center of the nearest lane, with the worst combinations of heavy trucks. As detailed above, truck activities on the project site would occur onsite as near as 30 feet from the nearest offsite structure to the south. Based on typical propagation rates, the vibration level at the nearest offsite structure would be 0.04 inch per second PPV. Therefore, vibration created from operation of the proposed project would be below the human annoyance threshold from transient sources of 0.24 inch per second PPV detailed above. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Mitigation Measure 1:

The project applicant shall require that all construction contractors restrict the operation of any large bulldozers that is powered by a greater than 150 horse power engine or any vibratory rollers from operating within 25 feet of any off-site structure. The project applicant shall require the use of a small bulldozer (i.e., D1, D2, or D3 dozers) or other type of equipment that is less than 150 horsepower to perform all demolition and grading activities that are located within 15 feet of any off-site structure.

Level of Significance after Mitigation

Less than significant impact.

7.4 Aircraft Noise

The proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Fullerton Municipal Airport that is located as near as 3.7 miles southeast of the project site. The project site is located outside the 60 dBA CNEL noise contours of Fullerton Airport. As such, the proposed project would be exposed to a less than significant impact from aircraft noise.

Level of Significance

Less than significant impact.

8.0 REFERENCES

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

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

City of Norwalk, *The City of Norwalk General Plan*, February 29, 1996.

City of Norwalk, *The Norwalk Municipal Code,* December 5, 2023.

EPD Solutions, Inc., *Air Quality, Energy and Greenhouse Gas Emissions Impact Analysis for the Carmenita Norwalk Project,* May 2024.

EPD Solutions, Inc., *205th Carmenita Norwalk Industrial Project Trip Generation and Vehicle Miles Traveled (VMT) Screening Analysis,* May 2024.

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

Crown City Engineers, Inc. *Traffic Impact Study Bridge Univar Industrial Warehouse 13900 Carmenita Road,* October 14, 2019.

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

APPENDIX A

Field Noise Measurements Photo Index

Noise Measurement Site 1 - looking north

Noise Measurement Site 1 - looking northeast

Noise Measurement Site 1 - looking east


Noise Measurement Site 1 - looking southeast


Noise Measurement Site 1 - looking south


Noise Measurement Site 1 - looking southwest


Noise Measurement Site 1 - looking west

Noise Measurement Site 1 - looking northwest

Noise Measurement Site 2 - looking north

Noise Measurement Site 2 - looking northeast

Noise Measurement Site 2 - looking east

Noise Measurement Site 2 - looking southeast

Noise Measurement Site 2 - looking south

Noise Measurement Site 2 - looking southwest

Noise Measurement Site 2 - looking west

Noise Measurement Site 2 - looking northwest

Noise Measurement Site 3 - looking north

Noise Measurement Site 3 - looking northeast

Noise Measurement Site 3 - looking east

Noise Measurement Site 3 - looking southeast

Noise Measurement Site 3 - looking south

Noise Measurement Site 3 - looking southwest

Noise Measurement Site 3 - looking west

Noise Measurement Site 3 - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	
Meter	831		
Firmware	2.403		
User	GT		
Description	Norwalk Rexford Expansion Project		
Note	Located near Northwest Corner of the Project Site, noise primarily from Air Compressor located at Industrial north of the project site		
Start Time	2024-02-13 11:01:07	Duration	0:15:00.0
End Time	2024-02-13 11:16:07	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	55.1 dB		
LAE	84.6 dB	SEA	--- dB
EA	32.3 µPa²h		
LZ_{peak}	105.7 dB	2024-02-13 11:01:07	
LAS_{max}	65.8 dB	2024-02-13 11:05:31	
LAS_{min}	51.4 dB	2024-02-13 11:12:56	
LA_{eq}	55.1 dB		
LC_{eq}	65.4 dB	LC_{eq} - LA_{eq}	10.3 dB
LAI_{eq}	56.5 dB	LAI_{eq} - LA_{eq}	1.4 dB

Exceedances	Count	Duration
LAS > 65.0 dB	1	0:00:03.10
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	55.1 dB	55.1 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	55.1 dB	55.1 dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	55.1 dB		65.4 dB		71.5 dB	
$LS_{(max)}$	65.8 dB	2024-02-13 11:05:31	76.6 dB	2024-02-13 11:08:53	94.3 dB	2024-02-13 11:01:07
$LF_{(max)}$	69.5 dB	2024-02-13 11:08:53	83.9 dB	2024-02-13 11:08:53	100.5 dB	2024-02-13 11:01:07
$LI_{(max)}$	73.3 dB	2024-02-13 11:08:53	87.4 dB	2024-02-13 11:08:53	103.6 dB	2024-02-13 11:01:07
$LS_{(min)}$	51.4 dB	2024-02-13 11:12:56	60.2 dB	2024-02-13 11:08:50	64.8 dB	2024-02-13 11:10:01
$LF_{(min)}$	50.9 dB	2024-02-13 11:12:55	58.9 dB	2024-02-13 11:08:49	62.4 dB	2024-02-13 11:09:39
$LI_{(min)}$	51.2 dB	2024-02-13 11:14:02	60.7 dB	2024-02-13 11:10:16	66.5 dB	2024-02-13 11:10:01
$L_{Peak(max)}$	89.1 dB	2024-02-13 11:08:53	94.9 dB	2024-02-13 11:08:53	105.7 dB	2024-02-13 11:01:07

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

Statistics

LAS 5.0	58.1 dB
LAS 10.0	56.0 dB
LAS 33.3	55.2 dB
LAS 50.0	53.8 dB
LAS 66.6	52.8 dB
LAS 90.0	52.2 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.002	Computer's File Name	SLM_0002509_831_Data_002.23.ldbin
Meter	831		
Firmware	2.403		
User	GT	Location	
Description	Norwalk Rexford Expansion Project		
Note	Located NW of Project Site at nearest Home at 14527 Carmenita Rd		
Start Time	2024-02-13 11:21:29	Duration	0:15:00.0
End Time	2024-02-13 11:36:29	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	73.2 dB		
LAE	102.7 dB	SEA	--- dB
EA	2.1 mPa²h		
LZ_{peak}	108.4 dB	2024-02-13 11:25:16	
LAS_{max}	83.8 dB	2024-02-13 11:29:08	
LAS_{min}	55.7 dB	2024-02-13 11:30:32	
LA_{eq}	73.2 dB		
LC_{eq}	79.3 dB	LC_{eq} - LA_{eq}	6.1 dB
LAI_{eq}	74.5 dB	LAI_{eq} - LA_{eq}	1.4 dB

Exceedances

	Count	Duration
LAS > 65.0 dB	22	0:13:32.9
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
73.2 dB	73.2 dB	0.0 dB

LDEN	LDay	LEve	LNight
73.2 dB	73.2 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	73.2 dB		79.3 dB		81.1 dB	
$LS_{(max)}$	83.8 dB	2024-02-13 11:29:08	92.1 dB	2024-02-13 11:31:01	94.7 dB	2024-02-13 11:25:16
$LF_{(max)}$	84.8 dB	2024-02-13 11:29:07	94.9 dB	2024-02-13 11:25:16	99.3 dB	2024-02-13 11:25:16
$LI_{(max)}$	86.8 dB	2024-02-13 11:29:22	98.3 dB	2024-02-13 11:25:16	103.0 dB	2024-02-13 11:25:16
$LS_{(min)}$	55.7 dB	2024-02-13 11:30:32	65.2 dB	2024-02-13 11:23:23	68.4 dB	2024-02-13 11:30:31
$LF_{(min)}$	51.2 dB	2024-02-13 11:30:33	63.4 dB	2024-02-13 11:30:31	65.7 dB	2024-02-13 11:23:21
$LI_{(min)}$	54.8 dB	2024-02-13 11:23:23	65.3 dB	2024-02-13 11:23:23	69.4 dB	2024-02-13 11:28:42
$L_{Peak(max)}$	96.7 dB	2024-02-13 11:29:22	103.9 dB	2024-02-13 11:25:16	108.4 dB	2024-02-13 11:25:16

Overloads

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

Statistics

LAS 5.0	77.1 dB
LAS 10.0	76.2 dB
LAS 33.3	74.0 dB
LAS 50.0	72.3 dB
LAS 66.6	69.7 dB
LAS 90.0	63.7 dB

Measurement Report

Report Summary

Meter's File Name	831_Data.003	Computer's File Name	SLM_0002509_831_Data_003.16.ldbin
Meter	831		
Firmware	2.403		
User	GT	Location	
Description	Norwalk Rexford Expansion Project		
Note	Lacated West of Project Site near SE Corner of Ramona Park		
Start Time	2024-02-13 11:43:39	Duration	0:15:00.0
End Time	2024-02-13 11:58:39	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	58.2 dB		
LAE	87.7 dB	SEA	--- dB
EA	65.3 µPa²h		
LZ_{peak}	102.3 dB	2024-02-13 11:43:39	
LAS_{max}	75.0 dB	2024-02-13 11:47:18	
LAS_{min}	49.0 dB	2024-02-13 11:44:39	
LA_{eq}	58.2 dB		
LC_{eq}	71.4 dB	LC_{eq} - LA_{eq}	13.2 dB
LAI_{eq}	59.4 dB	LAI_{eq} - LA_{eq}	1.2 dB

Exceedances	Count	Duration
LAS > 65.0 dB	2	0:00:17.4
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	58.2 dB	58.2 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	58.2 dB	58.2 dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	58.2 dB		71.4 dB		73.8 dB	
$LS_{(max)}$	75.0 dB	2024-02-13 11:47:18	79.5 dB	2024-02-13 11:47:19	96.1 dB	2024-02-13 11:43:39
$LF_{(max)}$	75.9 dB	2024-02-13 11:47:18	82.6 dB	2024-02-13 11:50:24	97.9 dB	2024-02-13 11:43:39
$LI_{(max)}$	76.6 dB	2024-02-13 11:47:17	83.1 dB	2024-02-13 11:50:24	100.2 dB	2024-02-13 11:43:39
$LS_{(min)}$	49.0 dB	2024-02-13 11:44:39	63.8 dB	2024-02-13 11:44:50	67.7 dB	2024-02-13 11:43:57
$LF_{(min)}$	48.1 dB	2024-02-13 11:44:39	61.7 dB	2024-02-13 11:56:41	65.2 dB	2024-02-13 11:56:51
$LI_{(min)}$	48.6 dB	2024-02-13 11:44:39	64.5 dB	2024-02-13 11:43:56	68.2 dB	2024-02-13 11:56:51
$L_{Peak(max)}$	89.0 dB	2024-02-13 11:47:18	92.7 dB	2024-02-13 11:55:18	102.3 dB	2024-02-13 11:43:39

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

Statistics

LAS 5.0	60.6 dB
LAS 10.0	59.4 dB
LAS 33.3	57.1 dB
LAS 50.0	55.9 dB
LAS 66.6	54.8 dB
LAS 90.0	52.7 dB

APPENDIX C

RCNM Model Construction Noise Calculations

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Demolition

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Home to Northwest	Residential	73.2	73.2	73.2

			Equipment Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20		89.6	1380	0
Excavator	No	40		80.7	1380	0
Excavator	No	40		80.7	1380	0
Excavator	No	40		80.7	1380	0
Dozer	No	40		81.7	1380	0
Dozer	No	40		81.7	1380	0

			Results			
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	60.8	53.8	N/A	N/A	N/A	N/A
Excavator	51.9	47.9	N/A	N/A	N/A	N/A
Excavator	51.9	47.9	N/A	N/A	N/A	N/A
Excavator	51.9	47.9	N/A	N/A	N/A	N/A
Dozer	52.9	48.9	N/A	N/A	N/A	N/A
Dozer	52.9	48.9	N/A	N/A	N/A	N/A
Total	**61**	**58**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Demolition

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest School to West	Commercial	58.2	58.2	58.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	1800	0
Excavator	No	40		80.7	1800	0
Excavator	No	40		80.7	1800	0
Excavator	No	40		80.7	1800	0
Dozer	No	40		81.7	1800	0
Dozer	No	40		81.7	1800	0

	Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	58.5	52	N/A	N/A	N/A	N/A
Excavator	49.6	45.6	N/A	N/A	N/A	N/A
Excavator	49.6	45.6	N/A	N/A	N/A	N/A
Excavator	49.6	45.6	N/A	N/A	N/A	N/A
Dozer	50.5	46.6	N/A	N/A	N/A	N/A
Dozer	50.5	46.6	N/A	N/A	N/A	N/A
Total	**59**	**55**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Demolition

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Industrial to South	Industrial	55.1	55.1	55.1

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

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

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Site Preparation

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Home to Northwest	Residential	73.2	73.2	73.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	1380	0
Dozer	No	40		81.7	1380	0
Dozer	No	40		81.7	1380	0
Tractor	No	40	84		1380	0
Tractor	No	40	84		1380	0
Tractor	No	40	84		1380	0
Tractor	No	40	84		1380	0

		Calculated (dBA)		Results Day		Noise Limits (dBA) Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		52.9	48.9	N/A	N/A	N/A	N/A
Dozer		52.9	48.9	N/A	N/A	N/A	N/A
Dozer		52.9	48.9	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
	Total	**55**	**59**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Site Preparation

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest School to West	Commercial	58.2	58.2	58.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	1800	0
Dozer	No	40		81.7	1800	0
Dozer	No	40		81.7	1800	0
Tractor	No	40	84		1800	0
Tractor	No	40	84		1800	0
Tractor	No	40	84		1800	0
Tractor	No	40	84		1800	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		50.5	46.6	N/A	N/A	N/A	N/A
Dozer		50.5	46.6	N/A	N/A	N/A	N/A
Dozer		50.5	46.6	N/A	N/A	N/A	N/A
Tractor		52.9	48.9	N/A	N/A	N/A	N/A
Tractor		52.9	48.9	N/A	N/A	N/A	N/A
Tractor		52.9	48.9	N/A	N/A	N/A	N/A
Tractor		52.9	48.9	N/A	N/A	N/A	N/A
	Total	**53**	**57**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Site Preparation

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Industrial to South	Industrial	55.1	55.1	55.1

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

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		68	64	N/A	N/A	N/A	N/A
Dozer		68	64	N/A	N/A	N/A	N/A
Dozer		68	64	N/A	N/A	N/A	N/A
Tractor		71	67	N/A	N/A	N/A	N/A
Tractor		71	67	N/A	N/A	N/A	N/A
Tractor		71	67	N/A	N/A	N/A	N/A
Tractor		71	67	N/A	N/A	N/A	N/A
	Total	**71**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Grading

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Home to Northwest	Residential	73.2	73.2	73.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	1380	0
Grader	No	40	85		1380	0
Dozer	No	40		81.7	1380	0
Tractor	No	40	84		1380	0
Tractor	No	40	84		1380	0
Tractor	No	40	84		1380	0

		Calculated (dBA)		Results	Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator		51.9	47.9	N/A	N/A	N/A	N/A
Grader		56.2	52.2	N/A	N/A	N/A	N/A
Dozer		52.9	48.9	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
	Total	**56**	**59**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Grading

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest School to West	Commercial	58.2	58.2	58.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	1800	0
Grader	No	40	85		1800	0
Dozer	No	40		81.7	1800	0
Tractor	No	40	84		1800	0
Tractor	No	40	84		1800	0
Tractor	No	40	84		1800	0

	Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	49.6	46	N/A	N/A	N/A	N/A
Grader	53.9	49.9	N/A	N/A	N/A	N/A
Dozer	50.5	46.6	N/A	N/A	N/A	N/A
Tractor	52.9	48.9	N/A	N/A	N/A	N/A
Tractor	52.9	48.9	N/A	N/A	N/A	N/A
Tractor	52.9	48.9	N/A	N/A	N/A	N/A
Total	**54**	**56**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Grading

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Industrial to South	Industrial	55.1	55.1	55.1

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

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

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Building Construction

		Baselines (dBA)		**---- Receptor #1 ----**
Description	Land Use	Daytime	Evening	Night
Nearest Home to Northwest	Residential	73.2	73.2	73.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1380	0
Gradall	No	40		83.4	1380	0
Gradall	No	40		83.4	1380	0
Gradall	No	40		83.4	1380	0
Generator	No	50		80.6	1380	0
Backhoe	No	40		77.6	1380	0
Front End Loader	No	40		79.1	1380	0
Tractor	No	40	84		1380	0
Welder / Torch	No	40		74	1380	0

		Calculated (dBA)		Results			
				Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		51.7	43.8	N/A	N/A	N/A	N/A
Gradall		54.6	50.6	N/A	N/A	N/A	N/A
Gradall		54.6	50.6	N/A	N/A	N/A	N/A
Gradall		54.6	50.6	N/A	N/A	N/A	N/A
Generator		51.8	48.8	N/A	N/A	N/A	N/A
Backhoe		48.7	44.8	N/A	N/A	N/A	N/A
Front End Loader		50.3	46.3	N/A	N/A	N/A	N/A
Tractor		55.2	51.2	N/A	N/A	N/A	N/A
Welder / Torch		45.2	41.2	N/A	N/A	N/A	N/A
	Total	**55**	**58**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Building Construction

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest School to West	Commercial	58.2	58.2	58.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	1800	0
Gradall	No	40		83.4	1800	0
Gradall	No	40		83.4	1800	0
Gradall	No	40		83.4	1800	0
Generator	No	50		80.6	1800	0
Backhoe	No	40		77.6	1800	0
Front End Loader	No	40		79.1	1800	0
Tractor	No	40	84		1800	0
Welder / Torch	No	40		74	1800	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		49.4	41.5	N/A	N/A	N/A	N/A
Gradall		52.3	48.3	N/A	N/A	N/A	N/A
Gradall		52.3	48.3	N/A	N/A	N/A	N/A
Gradall		52.3	48.3	N/A	N/A	N/A	N/A
Generator		49.5	46.5	N/A	N/A	N/A	N/A
Backhoe		46.4	42.5	N/A	N/A	N/A	N/A
Front End Loader		48.0	44.0	N/A	N/A	N/A	N/A
Tractor		52.9	48.9	N/A	N/A	N/A	N/A
Welder / Torch		42.9	38.9	N/A	N/A	N/A	N/A
	Total	**53**	**56**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Building Construction

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Industrial to South	Industrial	55.1	55.1	55.1

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

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		67	59	N/A	N/A	N/A	N/A
Gradall		70	66	N/A	N/A	N/A	N/A
Gradall		70	66	N/A	N/A	N/A	N/A
Gradall		70	66	N/A	N/A	N/A	N/A
Generator		67	64	N/A	N/A	N/A	N/A
Backhoe		64	60	N/A	N/A	N/A	N/A
Front End Loader		66	62	N/A	N/A	N/A	N/A
Tractor		71	67	N/A	N/A	N/A	N/A
Welder / Torch		61	57	N/A	N/A	N/A	N/A
	Total	**71**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Paving

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Home to Northwest	Residential	73.2	73.2	73.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	1380	0
Paver	No	50		77.2	1380	0
Paver	No	50		77.2	1380	0
Paver	No	50		77.2	1380	0
Roller	No	20		80	1380	0
Roller	No	20		80	1380	0

		Calculated (dBA)		Results Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		48.4	45.4	N/A	N/A	N/A	N/A
Paver		48.4	45.4	N/A	N/A	N/A	N/A
Paver		48.4	45.4	N/A	N/A	N/A	N/A
Paver		48.4	45.4	N/A	N/A	N/A	N/A
Roller		51.2	44.2	N/A	N/A	N/A	N/A
Roller		51.2	44.2	N/A	N/A	N/A	N/A
	Total	**51**	**53**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Paving

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest School to West	Commercial	58.2	58.2	58.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	1800	0
Paver	No	50		77.2	1800	0
Paver	No	50		77.2	1800	0
Paver	No	50		77.2	1800	0
Roller	No	20		80	1800	0
Roller	No	20		80	1800	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		49.6	46	N/A	N/A	N/A	N/A
Paver		53.9	49.9	N/A	N/A	N/A	N/A
Paver		50.5	46.6	N/A	N/A	N/A	N/A
Paver		52.9	48.9	N/A	N/A	N/A	N/A
Roller		52.9	48.9	N/A	N/A	N/A	N/A
Roller		52.9	48.9	N/A	N/A	N/A	N/A
	Total	**54**	**56**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Paving

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Industrial to South	Industrial	55.1	55.1	55.1

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	235	0
Paver	No	50		77.2	235	0
Paver	No	50		77.2	235	0
Paver	No	50		77.2	235	0
Roller	No	20		80	235	0
Roller	No	20		80	235	0

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

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Painting

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Home to Northwest	Residential	73.2	73.2	73.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	1380	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Compressor (air)		48.9	44.9	N/A	N/A	N/A	N/A
	Total	**49**	**45**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest School to West	Commercial	58.2	58.2	58.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	1800	0

Equipment		Calculated (dBA) *Lmax	Leq	Results Day Lmax	Noise Limits (dBA) Day Leq	Evening Lmax	Evening Leq
Compressor (air)		46.5	42.6	N/A	N/A	N/A	N/A
	Total	**47**	**43**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/29/2024
Case Description: 14830 Carmenita Rd Warehouse - Painting

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Industrial to South	Industrial	55.1	55.1	55.1

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

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

*Calculated Lmax is the Loudest value.

APPENDIX D

Operational Reference Noise Measurements Printouts

Measurement Report

Report Summary

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

Results

Overall Metrics

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

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

Community Noise	LDN	LDay	LNight
	65.1 dB	65.1 dB	0.0 dB

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

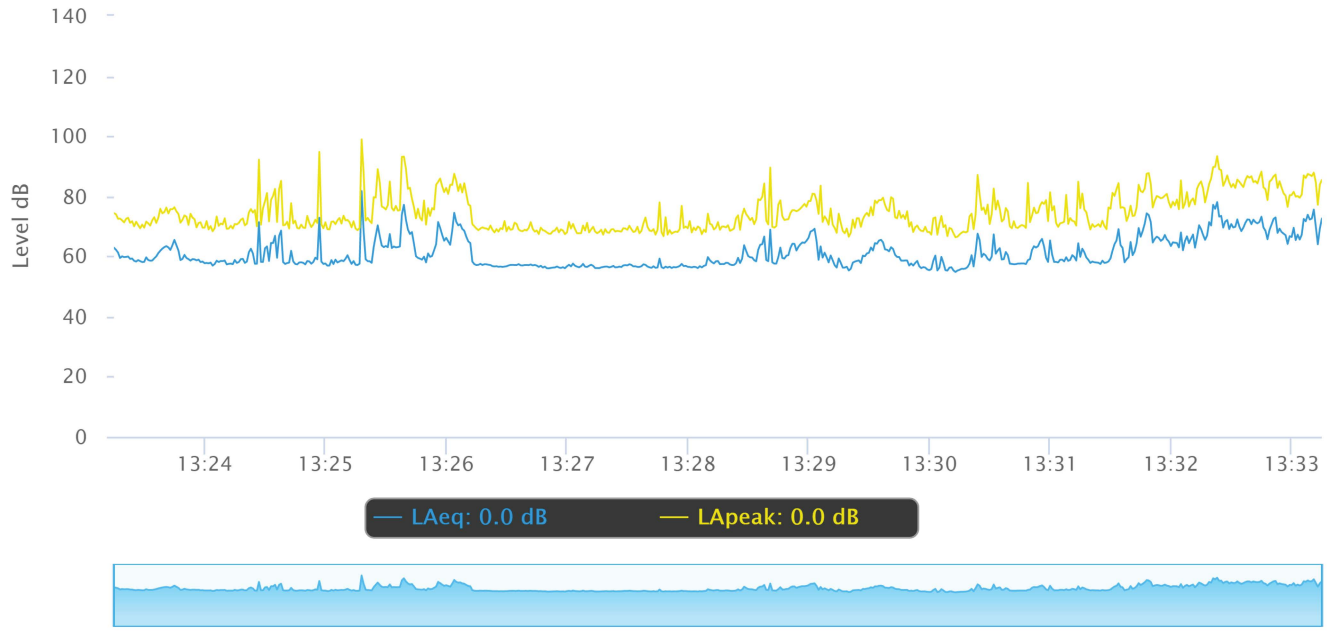
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	65.1 dB		78.1 dB		80.9 dB	
$LS_{(max)}$	80.1 dB	2020-05-09 13:25:19	91.6 dB	2020-05-09 13:26:05	97.4 dB	2020-05-09 13:23:15
$LF_{(max)}$	84.7 dB	2020-05-09 13:25:18	95.4 dB	2020-05-09 13:25:40	97.5 dB	2020-05-09 13:23:15
$LI_{(max)}$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

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

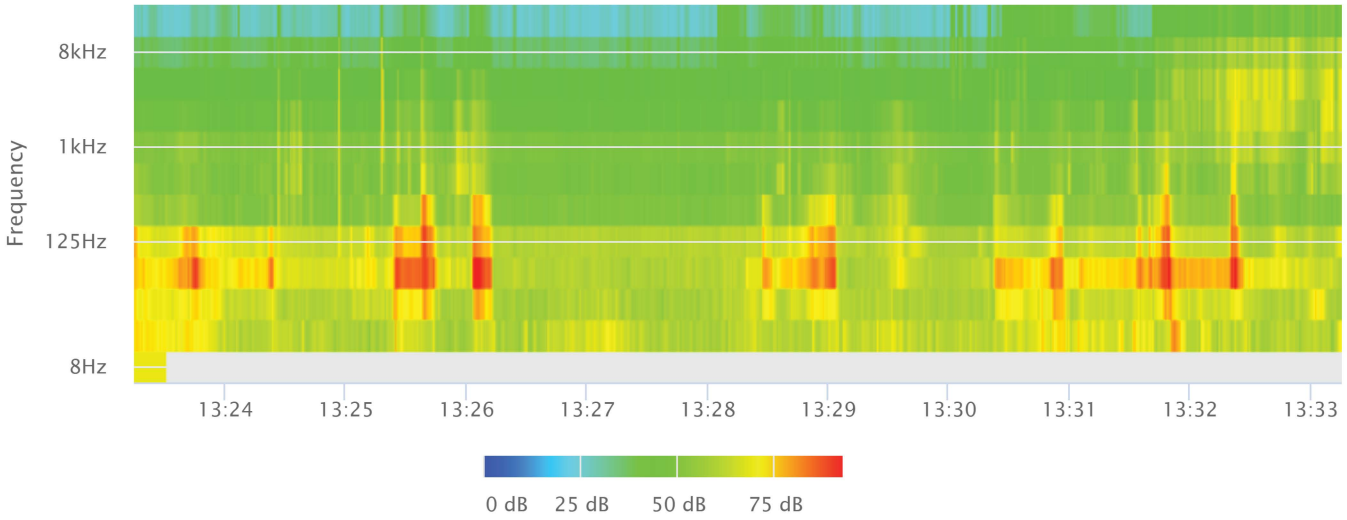
Statistics

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

Time History



OBA 1/1 Leq



General Information

Serial Number	02509
Model	831
Firmware Version	2.112
Filename	831_Data.002
User	GT
Job Description	Northwest Fresno Walmart Relocation
Location	Northwest Fresno Walmart
Measurement Description	
Start Time	Saturday, 2013 July 27 15:49:15
Stop Time	Saturday, 2013 July 27 16:09:15
Duration	00:20:00.6
Run Time	00:20:00.6
Pause	00:00:00.0
Pre Calibration	Saturday, 2013 July 27 13:36:08
Post Calibration	None
Calibration Deviation	---

Note

Located at the eastern portion of the southern parking lot and approx 140 feet south of the front door
96 F, 35% Humidity, 29.48 in Hg, 3 mph wind, partly cloudy

Overall Data

LAeq		63.1	dB
LASmax	2013 Jul 27 15:59:44	79.2	dB
LApeak (max)	2013 Jul 27 16:06:25	102.2	dB
LASmin	2013 Jul 27 15:50:20	49.6	dB
LCeq		74.0	dB
LAeq		63.1	dB
LCeq - LAeq		10.9	dB
LAIeq		67.4	dB
LAeq		63.1	dB
LAIeq - LAeq		4.3	dB
Ldn		63.1	dB
LDay 07:00-23:00		63.1	dB
LNight 23:00-07:00		---	dB
Lden		63.1	dB
LDay 07:00-19:00		63.1	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		93.9	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	66.7	dBA
LAS10.00	66.3	dBA
LAS33.30	62.8	dBA
LAS50.00	61.7	dBA
LAS66.60	57.7	dBA
LAS90.00	52.8	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	17 / 347.8	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.1	dB
Under Range Peak	75.6	dB
Noise Floor	17.0	dB
Overload	143.1	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	66.7	66.1	71.1	71.6	64.9	59.5	59.6	58.3	56.2	51.8	46.8	44.6
LZSmax	82.6	84.9	82.2	89.3	77.1	67.1	72.4	76.6	76.6	69.0	67.7	63.1
LZSmin	46.5	55.4	53.6	59.0	55.2	49.9	45.5	43.6	40.9	37.7	39.6	42.8

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	63.6	61.5	59.8	58.7	60.7	63.4	67.2	66.6	65.3	65.7	67.5	67.2
LZSmax	80.9	76.9	73.6	75.5	79.8	83.7	80.9	76.8	78.9	83.8	87.4	88.8
LZSmin	37.3	40.3	43.7	45.3	48.2	51.5	55.9	60.4	54.9	53.2	57.5	47.0

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	61.7	61.0	54.9	52.9	57.0	53.2	57.3	54.1	52.1	54.5	53.3	52.7
LZSmax	76.0	71.0	69.8	65.8	64.6	65.6	67.0	71.0	67.1	65.9	72.9	73.0
LZSmin	52.1	48.8	46.7	42.4	46.2	44.6	43.2	38.5	38.6	39.0	39.4	38.2

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	52.5	50.9	50.7	49.0	46.4	44.5	43.0	41.7	41.1	40.0	39.6	40.0
LZSmax	75.9	69.6	63.7	63.8	64.4	64.7	63.3	62.7	62.7	60.8	57.9	52.5
LZSmin	37.2	35.4	34.6	33.1	32.6	32.8	33.6	34.7	35.9	36.7	37.7	39.4

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	27 Jul 2013 13:36:08	-25.6
PRM831	28 Apr 2013 15:34:24	-25.9
PRM831	23 Apr 2013 10:17:33	-25.0
PRM831	27 Feb 2013 19:15:30	-25.7
PRM831	24 Jan 2013 12:00:16	-25.6
PRM831	15 Jan 2013 07:50:44	-26.2
PRM831	04 Jan 2013 13:47:46	-26.5

File Translated: Z:\Vista Env\2008\081101-Los Banos Wal-Mart\Noise Measurements\5.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.272 / 3.120
Name: Vista Environmental
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: 10 feet south of Walmart truck loading area
Note1: Noise from a truck unloading and trailer transfer and from mechanical push sweeper
Note2:

Overall Any Data
Start Time: 20-Jan-2009 14:40:19
Elapsed Time: 00:10:00.6

	A Weight		C Weight		Flat	
Leq:	63.3 dBA		68.8 dBC		69.5 dBF	
SEL:	91.1 dBA		96.6 dBC		97.3 dBF	
Peak:	90.1 dBA		93.2 dBC		93.2 dBF	
	20-Jan-2009	14:43:19	20-Jan-2009	14:41:22	20-Jan-2009	14:41:22
Lmax (slow):	76.4 dBA		79.3 dBC		80.2 dBF	
	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19
Lmin (slow):	41.0 dBA		58.0 dBC		59.7 dBF	
	20-Jan-2009	14:41:35	20-Jan-2009	14:42:11	20-Jan-2009	14:42:11
Lmax (fast):	77.4 dBA		81.6 dBC		83.2 dBF	
	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19
Lmin (fast):	39.8 dBA		56.9 dBC		58.8 dBF	
	20-Jan-2009	14:42:33	20-Jan-2009	14:42:11	20-Jan-2009	14:42:08
Lmax (impulse):	78.8 dBA		84.7 dBC		85.3 dBF	
	20-Jan-2009	14:44:25	20-Jan-2009	14:41:22	20-Jan-2009	14:41:22
Lmin (impulse):	41.1 dBA		58.5 dBC		61.0 dBF	
	20-Jan-2009	14:42:11	20-Jan-2009	14:42:11	20-Jan-2009	14:42:08

Spectra

Date	Time	Run Time
20-Jan-2009	14:40:19	00:10:00.6

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	52.8		65.8		31.8		630	56.0		68.6		27.4	
16.0	53.6	59.3	65.4	71.2	36.1	39.5	800	54.3		67.2		27.6	
20.0	56.3		67.7		35.1		1000	52.9	58.3	67.4	72.1	26.7	31.6
25.0	56.1		77.1		39.3		1250	53.4		67.3		26.2	
31.5	60.2	63.4	77.3	81.5	38.9	44.9	1600	53.8		69.4		25.0	
40.0	58.8		75.6		41.6		2000	53.2	57.7	68.0	72.7	21.3	27.2
50.0	58.3		68.8		45.6		2500	51.6		65.7		18.9	
63.0	58.5	64.0	67.2	73.0	44.9	49.8	3150	48.5		62.2		17.4	
80.0	60.6		68.4		44.4		4000	45.9	51.7	59.8	65.8	15.8	21.0
100	57.5		67.8		40.1		5000	45.8		60.9		15.0	
125	57.0	61.7	70.6	73.4	41.3	45.1	6300	43.6		58.4		14.7	
160	56.3		66.2		39.5		8000	41.9	46.8	54.6	61.2	15.0	19.9
200	52.9		61.5		35.0		10000	39.9		55.3		15.5	
250	52.8	56.9	62.3	66.4	34.4	38.4	12500	37.2		52.9		15.9	
315	50.4		60.9		30.3		16000	33.0	38.9	48.9	54.7	17.3	22.4
400	52.0		63.8		30.8		20000	27.1		44.0		19.0	
500	52.8	58.7	66.2	71.4	27.6	33.7							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

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

File Translated: Z:\Vista Env\2008\081101-Los Banos Wal-Mart\Noise Measurements\5.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 20-Jan-2009 14:40:19
Elapsed Time: 00:10:00.6

	A Weight		C Weight		Flat	
Leq:	63.3 dBA		68.8 dBC		69.5 dBF	
SEL:	91.1 dBA		96.6 dBC		97.3 dBF	
Peak:	90.1 dBA		93.2 dBC		93.2 dBF	
	20-Jan-2009	14:43:19	20-Jan-2009	14:41:22	20-Jan-2009	14:41:22
Lmax (slow):	76.4 dBA		79.3 dBC		80.2 dBF	
	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19
Lmin (slow):	41.0 dBA		58.0 dBC		59.7 dBF	
	20-Jan-2009	14:41:35	20-Jan-2009	14:42:11	20-Jan-2009	14:42:11
Lmax (fast):	77.4 dBA		81.6 dBC		83.2 dBF	
	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19	20-Jan-2009	14:43:19
Lmin (fast):	39.8 dBA		56.9 dBC		58.8 dBF	
	20-Jan-2009	14:42:33	20-Jan-2009	14:42:11	20-Jan-2009	14:42:08
Lmax (impulse):	78.8 dBA		84.7 dBC		85.3 dBF	
	20-Jan-2009	14:44:25	20-Jan-2009	14:41:22	20-Jan-2009	14:41:22
Lmin (impulse):	41.1 dBA		58.5 dBC		61.0 dBF	
	20-Jan-2009	14:42:11	20-Jan-2009	14:42:11	20-Jan-2009	14:42:08

Calibrated: 20-Jan-2009 08:31:09 Offset: -49.2 dB
Checked: 20-Jan-2009 08:31:09 Level: 94.0 dB
Calibrator not set Level: 94.0 dB
Cal Records Count: 0

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

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\10.slmdl
Model/Serial Number: 824 / A3176
Firmware/Software Revs: 4.283 / 3.120
Name:
Descr1: 1021 Didrikson Way
Descr2: Laguna Beach, CA 92651
Setup/Setup Descr: slm&rta.ssa / SLM & Real-Time Analyzer
Location: At pallet stacking area on north side of Walmart
Note1: Approx. 10' from operational forklift
Note2: 70F, 29.43 in Hg, 27% Humid., 4 mph wind, partly cloudy

Overall Any Data
Start Time: 18-May-2011 17:21:20
Elapsed Time: 00:04:00.7

	A Weight		C Weight		Flat	
Leq:	74.4 dBA		80.5 dBC		81.0 dBF	
SEL:	98.2 dBA		104.3 dBC		104.8 dBF	
Peak:	108.4 dBA		109.1 dBC		109.1 dBF	
	18-May-2011	17:24:51	18-May-2011	17:24:44	18-May-2011	17:24:48
Lmax (slow):	87.9 dBA		90.9 dBC		91.0 dBF	
	18-May-2011	17:24:49	18-May-2011	17:24:49	18-May-2011	17:24:49
Lmin (slow):	62.8 dBA		68.6 dBC		69.7 dBF	
	18-May-2011	17:21:34	18-May-2011	17:21:33	18-May-2011	17:21:33
Lmax (fast):	91.7 dBA		93.9 dBC		94.0 dBF	
	18-May-2011	17:24:48	18-May-2011	17:24:48	18-May-2011	17:24:48
Lmin (fast):	59.2 dBA		67.1 dBC		68.2 dBF	
	18-May-2011	17:21:28	18-May-2011	17:21:30	18-May-2011	17:21:30
Lmax (impulse):	94.3 dBA		96.2 dBC		96.3 dBF	
	18-May-2011	17:24:51	18-May-2011	17:24:44	18-May-2011	17:24:48
Lmin (impulse):	63.1 dBA		69.1 dBC		70.4 dBF	
	18-May-2011	17:23:23	18-May-2011	17:21:33	18-May-2011	17:21:33

Spectra

Date	Time	Run Time
18-May-2011	17:21:20	00:04:00.7

Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1	Hz	Leq1/3	Leq1/1	Max1/3	Max1/1	Min1/3	Min1/1
12.5	63.2		76.2		39.0		630	67.7		84.8		45.8	
16.0	60.8	66.2	73.2	78.3	41.6	45.6	800	64.6		83.9		47.6	
20.0	59.6		67.5		41.5		1000	63.1	68.6	82.1	86.9	46.7	52.4
25.0	62.7		70.0		44.6		1250	63.6		79.1		48.4	
31.5	67.6	72.5	68.8	73.9	46.6	51.1	1600	63.8		79.9		48.8	
40.0	70.0		68.5		47.3		2000	61.7	66.9	81.9	84.9	46.3	51.4
50.0	70.4		68.1		48.0		2500	60.1		77.6		42.6	
63.0	71.6	76.2	83.2	86.2	51.8	55.4	3150	63.4		76.7		41.0	
80.0	72.1		83.1		51.2		4000	53.5	64.2	73.4	79.7	36.6	43.3
100	68.5		73.7		51.0		5000	53.5		74.0		36.4	
125	68.7	73.9	77.6	82.2	50.3	54.9	6300	49.8		69.2		32.9	
160	70.1		79.2		48.9		8000	47.2	52.2	66.0	71.2	30.3	35.3
200	68.1		77.5		51.5		10000	42.4		59.4		25.8	
250	63.4	69.9	73.7	80.0	46.3	53.3	12500	39.5		57.8		24.0	
315	60.2		73.2		45.0		16000	34.8	41.1	52.6	59.4	23.0	27.7
400	65.6		78.8		48.7		20000	30.1		48.9		21.3	
500	69.1	72.5	85.1	88.5	48.5	52.6							

Ln Start Level: 15 dB

L1.00	0.0 dBA	L50.00	0.0 dBA	L95.00	0.0 dBA
L5.00	0.0 dBA	L90.00	0.0 dBA	L99.00	0.0 dBA

Detector: Slow
Weighting: A
SPL Exceedance Level 1: 85.0 dB Exceeded: 1 times
SPL Exceedance level 2: 120 dB Exceeded: 0 times
Peak-1 Exceedance Level: 105 dB Exceeded: 4 times
Peak-2 Exceedance Level: 100 dB Exceeded: 4 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

File Translated: V:\Vista Env\2010\10022-Fresno Walmart\Noise Measurements\LD\10.slmdl
Model/Serial Number: 824 / A3176

Current Any Data
Start Time: 18-May-2011 17:21:20
Elapsed Time: 00:04:00.7

	A Weight	C Weight	Flat
Leq:	74.4 dBA	80.5 dBC	81.0 dBF
SEL:	98.2 dBA	104.3 dBC	104.8 dBF
Peak:	108.4 dBA	109.1 dBC	109.1 dBF
	18-May-2011 17:24:51	18-May-2011 17:24:44	18-May-2011 17:24:48
Lmax (slow):	87.9 dBA	90.9 dBC	91.0 dBF
	18-May-2011 17:24:49	18-May-2011 17:24:49	18-May-2011 17:24:49
Lmin (slow):	62.8 dBA	68.6 dBC	69.7 dBF
	18-May-2011 17:21:34	18-May-2011 17:21:33	18-May-2011 17:21:33
Lmax (fast):	91.7 dBA	93.9 dBC	94.0 dBF
	18-May-2011 17:24:48	18-May-2011 17:24:48	18-May-2011 17:24:48
Lmin (fast):	59.2 dBA	67.1 dBC	68.2 dBF
	18-May-2011 17:21:28	18-May-2011 17:21:30	18-May-2011 17:21:30
Lmax (impulse):	94.3 dBA	96.2 dBC	96.3 dBF
	18-May-2011 17:24:51	18-May-2011 17:24:44	18-May-2011 17:24:48
Lmin (impulse):	63.1 dBA	69.1 dBC	70.4 dBF
	18-May-2011 17:23:23	18-May-2011 17:21:33	18-May-2011 17:21:33

Calibrated: 18-May-2011 13:09:02 Offset: -48.2 dB
Checked: 19-May-2011 06:46:08 Level: 113.9 dB
Calibrator not set Level: 114.0 dB
Cal Records Count: 0

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

Cat® GC Enclosures

Image shown might not reflect actual configuration

DE33 GC - DE220 GC Sound Attenuated Enclosures

50 Hz:33 kVA - 220 kVA

60 Hz:37.5 kVA - 218.8 kVA

Features

Robust/Highly Corrosion Resistant Construction

- Manufactured from galvanized steel
- Advanced powder-coated paint finish
- Single-piece main roof
- Base frame extends beyond enclosure, protecting against handling damage
- Minimal external fixings exposed to environment
- Zinc-plated fasteners
- 1 degree sloped roof provided to prevent water stagnation and ingress

Excellent Access

- Side-hinged doors on both sides of the enclosure incorporate lift-off hinges at 45°
- Radiator fill via removable, flush-mounted rain cap fitted with compression seal
- Coolant drain valves mounted to siderail on exterior
- Removable end panels allow access to radiator, exhaust outlet, and alternator rear
- Doors positioned for optimum access of frequently serviced items

Security and Safety

- Secure, lockable doors prevent unauthorized access to control panel, fuel fill, and battery
- Emergency stop button mounted on exterior, convenient to control panel
- Cooling fan and battery charging alternator fully guarded

Transportability

- Drag points on base frame facilitate handling from both ends (DE33 GC - DE110 GC)
- Lifting and drag points on base frame facilitate handling (DE150 GC - DE200 GC)

Options

- Caterpillar yellow paint
- Integral dual wall fuel tank base for total fluid containment (fuel, oil, and coolant) DEFRA compliant
- Integrated drip tray containment fuel tank (fuel, oil, and coolant)

Enclosure Package Operating Characteristics

A. Sound Attenuated Enclosures

Model	Hz	kVA	SB	Sound Pressure Levels dBA				Air Flow Rate		Ambient Capability @100% Load	
				1m (3.3ft)		7m (23ft)					
				75% Load	100% Load	75% Load	100% Load	m^3/s	cfm	°C	°F
DE33 GC	50	33	SB	79.1	81.1	68.5	70.2	0.9	1801.0	60	139
	60	37.5	SB	80.7	81.9	70	71.4	1.0	2182.4	63	146
DE50 GC	50	50	SB	76	77.4	64.6	66.3	1.3	2839.3	61	142
	60	56.3	SB	79	80.1	68.8	69.9	1.5	3220.7	62	144
DE55 GC	50	55	SB	76.3	78.3	65	67.3	1.3	2839.3	57	135
	60	62.5	SB	79.3	80.7	69.1	70.5	1.5	3220.7	59	139
DE65 GC	50	65	SB	77.3	80.3	66.1	69.5	1.3	2839.3	49	119
	60	75	SB	80.1	82.3	69.9	72	1.5	3220.7	53	127
DE88 GC	50	88	SB	77.1	79.1	66.7	69.1	1.6	3432.6	45	113
	60	100	SB	81.9	83	71	72.8	1.9	4110.6	46	114
DE110 GC	50	110	SB	*TBD	*TBD	*TBD	*TBD	*TBD	*TBD	*TBD	*TBD
	60	125	SB	83.3	83.3	72.5	73.1	2.5	5339.6	54	130
DE150 GC	50	150	SB	80.7	81.1	70.4	71.4	3.0	6377.8	58	136
	60	165	SB	*TBD	*TBD	*TBD	*TBD	*TBD	*TBD	*TBD	*TBD
DE165 GC	50	163.9	SB	79.4	80.2	70.7	71.4	3.0	6441.4	60	140
	60	187.5	SB	82.1	82.5	71.9	72.4	3.4	7288.9	59	139
DE200 GC	50	200	SB	79.9	81.2	71.2	72.1	3.0	6441.4	52	126
	60	218.8	SB	82.3	82.9	72.1	72.7	3.4	7288.9	54	130
DE220 GC	50	220	SB	80.2	81.7	71.4	72.4	3.0	6441.4	48	119

*TBD - To be determined - Data will be released soon

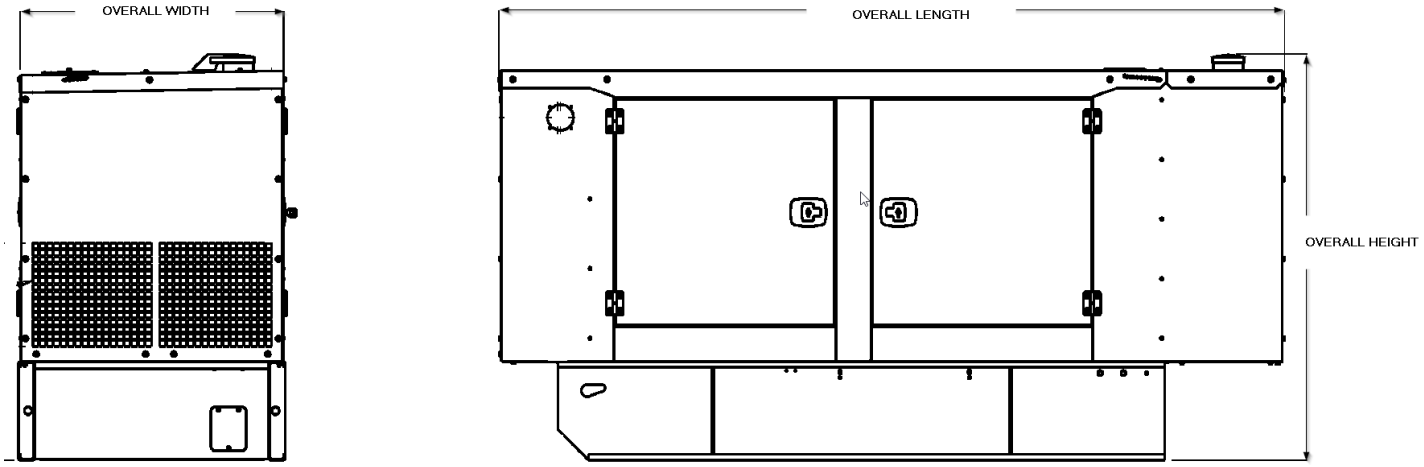
Note: Sound level measurements are subject to instrumentation, installation and manufacturing variability, as well as ambient site conditions.

Cat® GC Enclosures

Weights & Dimensions

A. Sound Attenuated Enclosures

Model	Weight*		Genset Overall Size (mm)		
	Kg	lb	Length	Width	Height
DE33 GC	851	1876.5	1964	896	1344
DE50 GC	889	1960.2	2298	964	1404
DE55 GC	902	1988.9	2298	964	1404
DE65 GC	992	2187.4	2298	964	1404
DE88 GC	1141	2515.9	2294	1126	1476
DE110 GC	1213	2674.7	2765	1026	1583
DE150 GC	1902	4193.9	3340	1172	1746
DE165 GC	1926	4246.8	3345	1172	1746
DE200 GC	1893	4174.1	3345	1172	1746
DE220 GC	1907	4204.9	3345	1172	1746



***Note:** For reference only – do not use for installation design. Please contact your local dealer for exact weights and dimensions

LET'S DO THE WORK.™

LEHE20114-00 (12/20)