Nance Street and Webster Avenue Warehouse

Noise Impact Study

City of Perris, CA

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This noise assessment was prepared to evaluate the potential noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to the noise standards set forth by the Federal, State and Local agencies. Consistent with the City's Noise Guidelines, the project must demonstrate compliance to the applicable noise criterion as outlined within the City's Noise Element and Municipal Code.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An evaluation of the existing ambient noise environment
- An analysis of stationary noise impacts from the project site to adjacent land uses
- Construction noise and vibration evaluation

1.2 Site Location and Study Area

The project site is located at the southeast corner of Webster Avenue and Nance Street in Perris, CA, as shown in Exhibit A. The site's current land use classification is General Industrial according to the Perris Valley Commerce Center Specific Plan Land Use Map and the proposed use is industrial. Existing land uses surrounding the site include Nance Street to the north, industrial to the east, vacant land to the south with residential 912 feet from the project site outside the sphere of influence, and Webster Avenue to the west with non-conforming residential to across Webster Avenue.

1.3 Proposed Project Description

The Project proposes to develop a 109,485 square foot warehouse on an approximately 5.11 acre site. Exhibit B demonstrates the site plan for the project.

Construction activities within the Project area will consist of on-site grading, building, paving, and architectural coating. Table 1 summarizes the land use description for the Project Site.

Exhibit A
Location Map

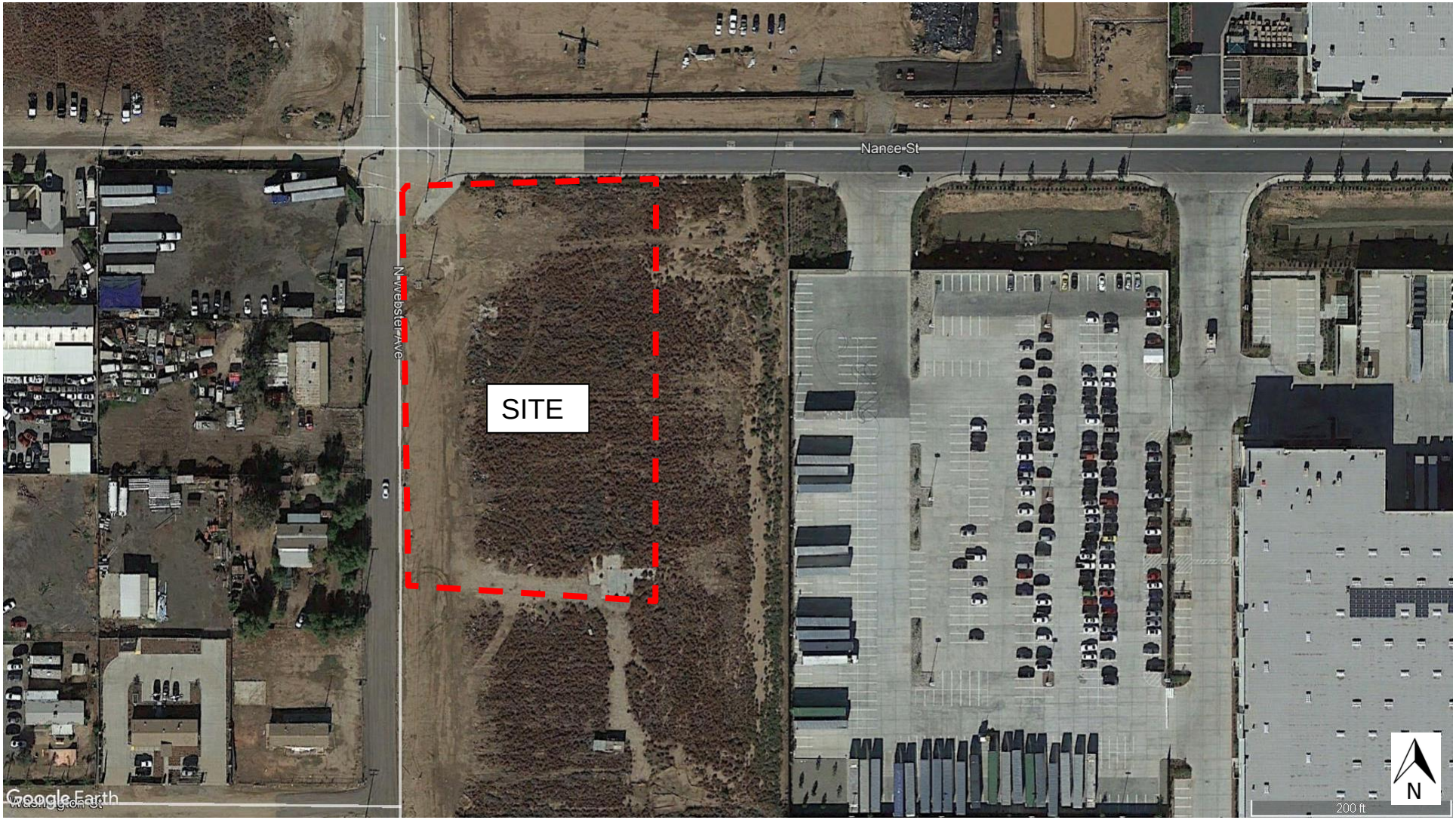
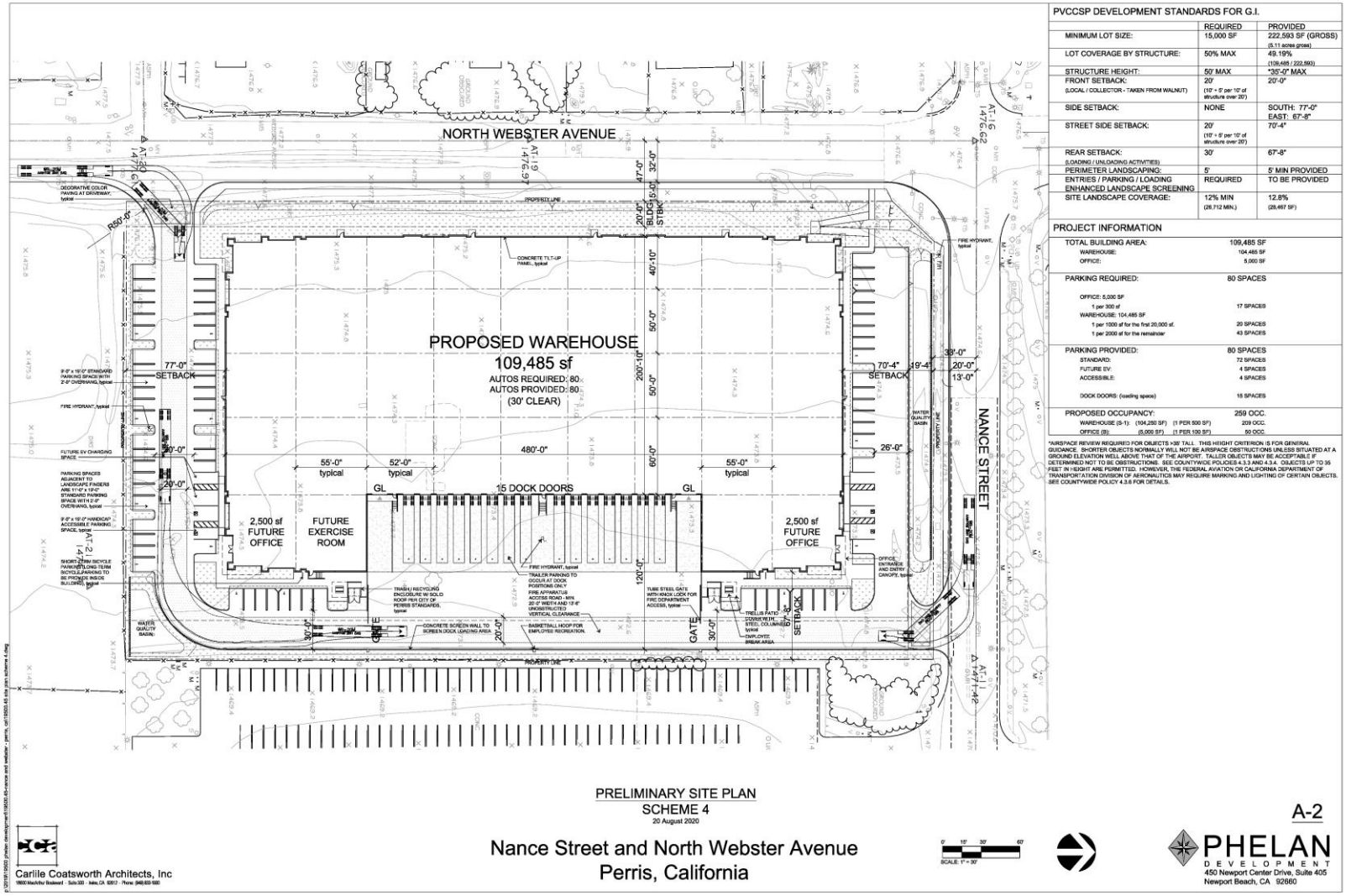


Exhibit B
Site Plan



PVCCSP DEVELOPMENT STANDARDS FOR G.I.

	REQUIRED	PROVIDED
MINIMUM LOT SIZE:	15,000 SF	222,593 SF (GROSS) (5.11 acres gross)
LOT COVERAGE BY STRUCTURE:	50% MAX	49.19% (109,485 / 222,593)
STRUCTURE HEIGHT:	50' MAX	*35'-0" MAX
FRONT SETBACK: (LOCAL / COLLECTOR - TAKEN FROM WALNUT)	20' (10' + 5' per 10' of structure over 20')	20'-0"
SIDE SETBACK:	NONE	SOUTH: 77'-0" EAST: 67'-8"
STREET SIDE SETBACK:	20' (10' + 5' per 10' of structure over 20')	70'-4"
REAR SETBACK: (LOADING / UNLOADING ACTIVITIES)	30'	67'-8"
PERIMETER LANDSCAPING:	5'	5' MIN PROVIDED
ENTRIES / PARKING / LOADING ENHANCED LANDSCAPE SCREENING	REQUIRED	TO BE PROVIDED
SITE LANDSCAPE COVERAGE:	12% MIN (26,712 MIN.)	12.8% (28,457 SF)

PROJECT INFORMATION

TOTAL BUILDING AREA:	109,485 SF
WAREHOUSE:	104,485 SF
OFFICE:	5,000 SF
PARKING REQUIRED:	80 SPACES
OFFICE: 5,000 SF	
1 per 300 sf	17 SPACES
WAREHOUSE: 104,485 SF	
1 per 1000 sf for the first 20,000 sf.	20 SPACES
1 per 2000 sf for the remainder	43 SPACES
PARKING PROVIDED:	80 SPACES
STANDARD:	72 SPACES
FUTURE EV:	4 SPACES
ACCESSIBLE:	4 SPACES
DOCK DOORS: (loading space)	15 SPACES
PROPOSED OCCUPANCY:	259 OCC.
WAREHOUSE (S-1): (104,250 SF) (1 PER 500 SF)	209 OCC.
OFFICE (B): (5,000 SF) (1 PER 100 SF)	50 OCC.

*AIRSPACE REVIEW REQUIRED FOR OBJECTS >35' TALL. THIS HEIGHT CRITERION IS FOR GENERAL GUIDANCE. SHORTER OBJECTS NORMALLY WILL NOT BE AIRSPACE OBSTRUCTIONS UNLESS SITUATED AT A GROUND ELEVATION WELL ABOVE THAT OF THE AIRPORT. TALLER OBJECTS MAY BE ACCEPTABLE IF DETERMINED NOT TO BE OBSTRUCTIONS. SEE COUNTYWIDE POLICIES 4.3.3 AND 4.3.4. OBJECTS UP TO 35 FEET IN HEIGHT ARE PERMITTED. HOWEVER, THE FEDERAL AVIATION OR CALIFORNIA DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS MAY REQUIRE MARKING AND LIGHTING OF CERTAIN OBJECTS. SEE COUNTYWIDE POLICY 4.3.6 FOR DETAILS.

2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used in the report.

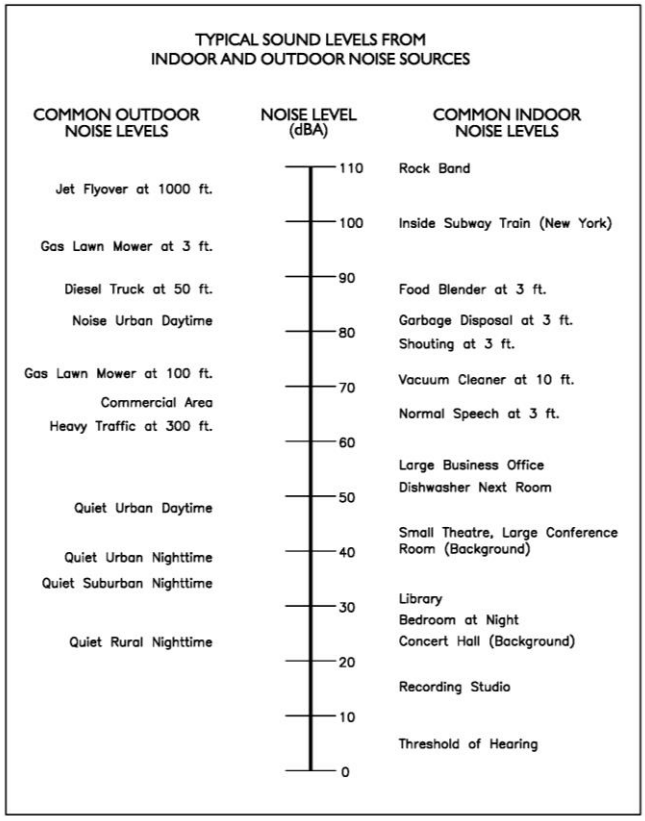
2.1 Sound, Noise and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter ($\mu N/m^2$), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels, abbreviated dB. Exhibit C illustrates references sound levels for different noise sources.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA), a scale designed to account for the frequency-dependent sensitivity of the ear. Typically, the human ear can barely perceive a change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code, or other applicable regulations, which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90, and L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

2.7 Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2–3 axle) and heavy truck percentage (4 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds and truck percentages equate to a louder volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

2.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the

receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity, and turbulence can further impact have far sound can travel.

3.0 Ground-Borne Vibration Fundamentals

3.1 Vibration Descriptors

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.

Several different methods are used to quantify vibration amplitude.

PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

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. Outdoor 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. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

3.3 Vibration Propagation

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 wavefront, 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 wavefront. 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 wavefront. 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 proposed project is located in the City of Perris, California and 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:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible for regulating noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible for regulating noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers. The Housing and Urban Development (HUD) is responsible for establishing noise regulations as it relates to exterior/interior noise levels for new HUD-assisted housing developments near high noise areas.

The federal government 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 constructed adjacent to a highway or, or alternatively that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

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

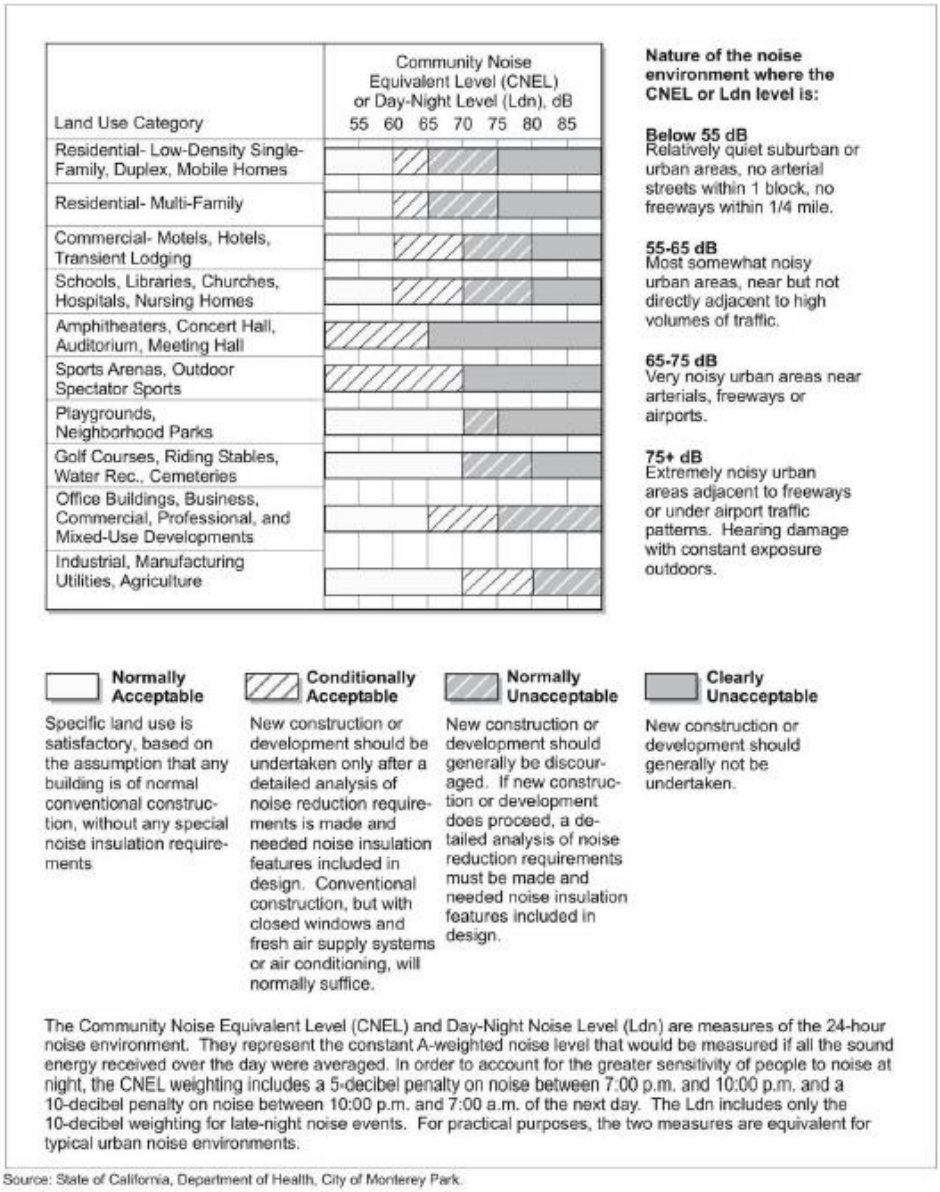
4.2 State Regulations

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.” The matrix allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 and the Uniform Building Code (UBC) which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city 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 as illustrated in Exhibit D.

Exhibit D: Land Use Compatibility Guidelines



Source: State of California, Department of Health, City of Monterey Park.

4.3 City of Perris Noise Regulations

The City of Perris outlines their noise regulations and standards within the Noise Element from the General Plan and the Noise Ordinance from the Municipal Code.

City of Perris General Plan

The City of Perris adopted their General Plan in 2005. Applicable policies and standards governing environmental noise in the City are set forth in the General Plan Noise Element. The project site is located within confines of the March Air Reserve Base (MARB) 65 to 70 dB contour. Office space must have sound attenuation features sufficient to reduce the exterior aviation-related noise level to no more than CNEL 45 dB. To ensure compliance with these criteria, an acoustical study shall be required to be completed for any development proposed to be situated where the aviation related noise exposure is more than 20 dB above the interior standard (e.g., within the CNEL 60 dB contour where the interior standard is CNEL 40 dB). Standard building construction is presumed to provide adequate sound attenuation where the difference between the exterior noise exposure and the interior standard is 20 dB or less.

The nearest residential uses are in the residential zoning approximately 912 feet from the project site to the south. The project also has non-conforming residential 45 feet to the west across Webster Avenue.

In addition to the noise standards, the City has outlined goals, policies and implementation measures to reduce potential noise impacts and are presented below:

Goals, Policies, and Implementation Measures

The City utilizes the following General Plan Noise Element goal, policies and implementation measures to assess evaluate the project's suitability in light of noise impacts.

Goal-V: Stationary Source Noise

Future non-residential land uses compatible with noise sensitive land uses.

Policy V.A:

New large scale commercial or industrial facilities located within 160 feet of sensitive land uses shall mitigate noise impacts to attain an acceptable level as required by the State of California Noise/Land Use Compatibility Criteria.

Implementation Measures

V.A.1 An acoustical impact analysis shall be prepared for new industrial and large scale commercial facilities to be constructed within 160 feet of the property line of any existing noise sensitive land use. This analysis shall document the nature of the commercial or industrial facility as well as all interior or exterior facility operations that would generate exterior noise. The analysis shall document the placement of any existing or proposed noise-sensitive land uses situated within the 160-foot distance. The analysis shall determine the potential noise levels that could be received at these sensitive land uses and specify specific measures to be employed by the large scale commercial or industrial facility to ensure that these

levels do not exceed 60 dBA CNEL at the property line of the adjoining sensitive land use. No development permits or approval of land use applications shall be issued until the acoustic analysis is received and approved by the City Staff.

Goal-2: Existing Sensitive Receptors Roadway improvements compatible with existing noise sensitive land uses.

Policy II.A:

Appropriate measures shall be taken in the design phase of future roadway widening projects to minimize impacts on existing sensitive noise receptors.

Implementation Measures

II.A.1 In the design of future roadway widening projects adjacent to existing sensitive land uses, first priority will be given to widening on the opposite side of the street where no sensitive land uses occur.

City of Perris Municipal Ordinance

Section 7.34.050 of the City's Code of Ordinances establishes standards as it relates to maximum operational noise levels for nonresidential projects:

7.34.050 General Prohibition

A. Its unlawful for any person to willfully make, cause or suffer, or permit to be made or caused, any loud excessive or offensive noises or sounds wich unreasonably disturb the peace and quiet of any residential neighborhood or which are physically annoying to persons of ordinary sensitivity or which are so harsh, prolonged or unnatural or unusual in their use., time or place as to occasion physical discomfort to the inhabitants of the city, or any section thereof. The standards for dBA noise level in Section 7.34.040 shall apply to this section. To the extent that the noise created causes the noise level at the property line to exceed the ambient noise level by more than 1.0 decibels, it shall be presumed that the noise being created also is in violation of this section.
B. The characteristics and conditions which should be considered in determining whether a violation of the provisions of this section exists should include, but not limited to the following:
    1. The level of noise;
    2. Whether the nature of the noise is usual or unusual;
    3. Whether the origin of the noise is natural or unnatural;
    4. The level of the ambient noise;
    5. The proximity of the noise to sleeping facilities;
    6. The nature and zoning of the area from which the noise emanates and the area where it is received;
    7. The time of day or night the noise occurs;
    8. The duration of the noise; and

9. Whether the noise is recurrent, intermittent or constant.

7.34.060 Hours of Construction

It is unlawful for any person between the hours of seven p.m. of any day and seven a.m. of the following day, or on a legal holiday, with the exception of Columbus Day and Washington's birthday, or on Sundays to erect, construct, demolish, excavate, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. Construction activity shall not exceed eighty dBA in residential zones in the city.

4.3 MARB Noise Regulations

The project resides inside the MARB compatibility plan. Table MA-2 from the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, states that Office space must have sound attenuation features sufficient to reduce the exterior aviation-related noise level to no more than CNEL 45 dB.

5.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

5.1 Noise Measurement Procedure and Criteria

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as the first row of houses
- Locations that are acoustically representative and equivalent of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance to City's noise ordinance, the Federal Highway Transportation (FHWA) and Caltrans (TeNS) technical noise specifications. All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5-feet above the ground for all measurements
- Sound level meters were calibrated (Larson Davis CAL 200) before and after each measurement
- Following the calibration of equipment, a windscreen was placed over the microphone
- Frequency weighting was set on "A" and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements, any noise contaminations such as barking dogs, local traffic, lawn mowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

5.2 Noise Measurement Locations

Noise monitoring locations were selected based on the project site's boundary. One (1) long-term 24-hour noise measurement was conducted at the site's property line and is illustrated in Exhibit E. Appendix A includes photos, field sheet, and measured noise data.

5.3 Stationary Noise Modeling

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP's software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using referenced sound level data for the various stationary on-site sources (parking spaces and loading docks). The model assumes that the

building facility has a fifteen (15) truck loading and unloading area, and approximately 64 parking spaces.

Trucks idling at the loading and unloading area were modeled as an area source with a reference noise level of 74 dBA every 3 feet.

The SP model assumes that all noise sources are operating simultaneously (worst-case scenario), when in actuality the noise will be intermittent and lower in noise level.

Finally, the model is able to evaluate the noise attenuating effects of any existing or proposed property line walls. Input and output calculations are provided in Appendix C.

5.4 FHWA Roadway Construction Noise Model

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RNCM), together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, % usage factor, and baseline parameters for the project site.

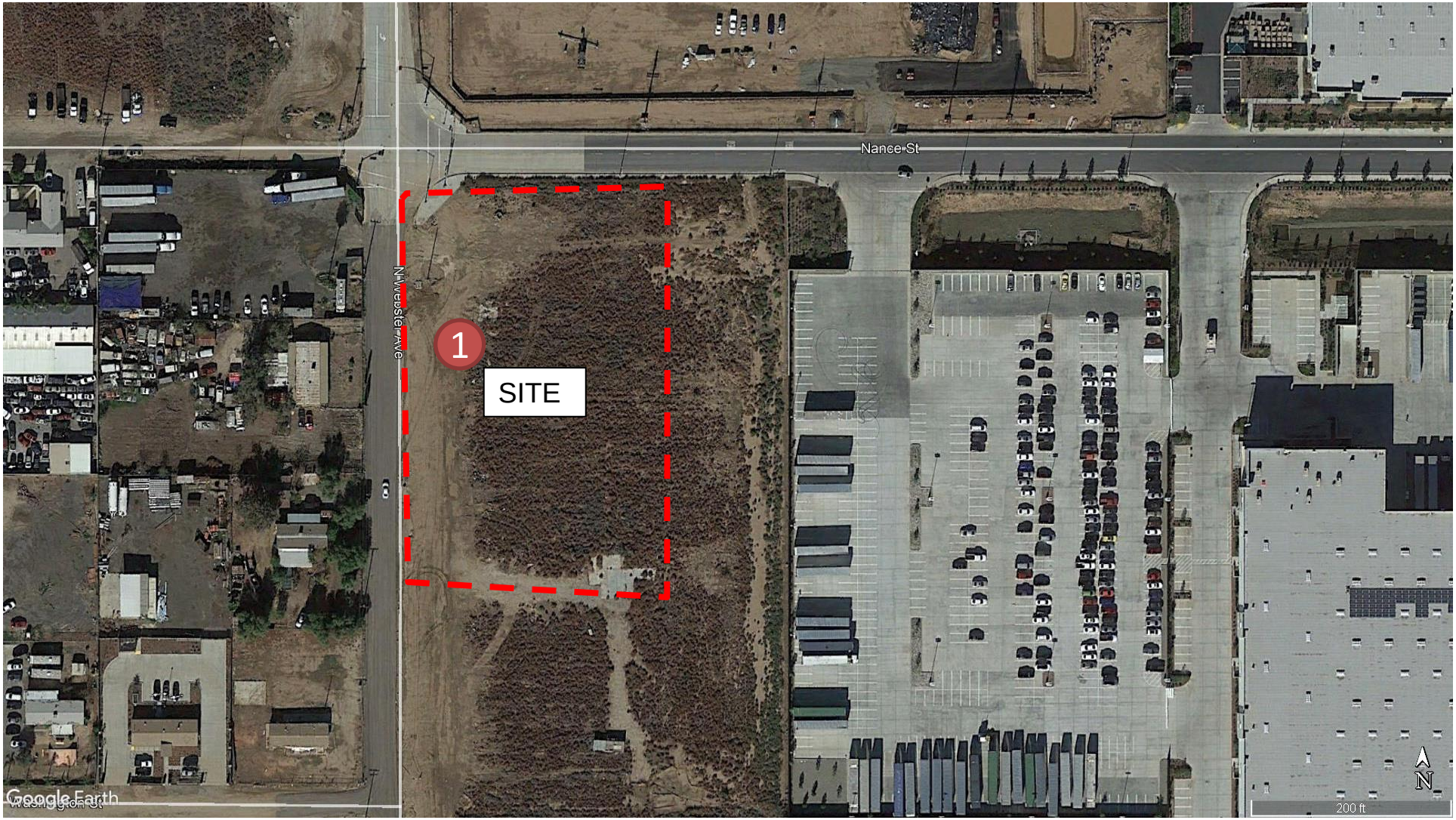
The project was analyzed based on the different construction phases. Construction noise is expected to be loudest during the grading, concrete and building phases of construction. The construction noise calculation output worksheet is located in Appendix E. The following assumptions relevant to short-term construction noise impacts were used:

- It is estimated that construction will occur over a 7-month time period. Construction noise is expected to be the loudest during the grading, concrete, and building phases.

1 **= Long term measurement**

Exhibit E

Measurement Locations



6.0 Existing Noise Environment

A twenty-four hour (24) ambient noise measurement was performed at or near the project vicinity and were conducted at the project site. Noise measurements were taken to determine the existing ambient noise levels. Noise data indicates that traffic, and noise from March Air Reserve Base are the primary sources of noise impacting the site and the surrounding area.

6.1 Long-Term Noise Measurement Results

The results of the long-term noise data are presented in Table 1.

Table 1: Long-Term Noise Measurement Data[1]

Date	Time	1-Hour dB(A)							
		L_{EQ}	L_{MAX}	L_{MIN}	L_2	L_8	L_{25}	L_{50}	L_{90}
8/13/2020	3PM-4PM	59.3	83.6	39.9	70.4	65.1	59.7	48.7	59.3
8/13/2020	4PM-5PM	51.9	75.9	40.4	58.3	56.7	55.7	49.4	51.9
8/13/2020	5PM-6PM	54.8	80.6	40.2	61.8	59.6	58.6	52.4	54.8
8/13/2020	6PM-7PM	53.5	64.9	49.8	61.4	59.3	55.6	49.8	53.5
8/13/2020	7PM-8PM	63.8	85.1	41.7	73.6	72.0	68.6	50.6	63.8
8/13/2020	8PM-9PM	52.0	77.6	42.8	58.1	55.3	54.6	49.6	52.0
8/13/2020	9PM-10PM	55.2	82.0	41.3	62.1	57.4	52.6	47.3	55.2
8/13/2020	10PM-11PM	62.0	84.5	39.4	72.3	71.4	61.3	49.1	62.0
8/13/2020	11PM-12AM	60.3	83.0	39.5	72.3	68.4	55.3	46.1	60.3
8/14/2020	12AM-1AM	53.2	79.0	39.8	63.4	58.9	56.6	47.5	53.2
8/14/2020	1AM-2AM	48.2	75.1	41.0	52.2	51.4	49.6	47.0	48.2
8/14/2020	2AM-3AM	51.7	77.2	41.8	58.5	55.0	53.8	47.4	51.7
8/14/2020	3AM-4AM	48.7	71.7	41.6	56.2	53.8	50.1	45.8	48.7
8/14/2020	4AM-5AM	49.7	74.2	42.7	56.3	54.4	51.4	47.8	49.7
8/14/2020	5AM-6AM	54.4	82.1	44.0	63.4	57.0	51.9	49.1	54.4
8/14/2020	6AM-7AM	52.2	70.5	45.9	58.0	55.7	53.9	51.2	52.2
8/14/2020	7AM-8AM	57.5	80.5	41.6	68.6	67.1	57.1	49.1	57.5
8/14/2020	8AM-9AM	50.7	76.7	40.2	58.2	55.4	53.8	46.5	50.7
8/14/2020	9AM-10AM	50.2	74.6	37.5	58.1	56.2	52.4	44.6	50.2
8/14/2020	10AM-11AM	55.5	82.6	37.2	67.5	58.1	51.1	43.9	55.5
8/14/2020	11AM-12PM	52.9	80.7	37.9	59.9	57.5	52.2	45.8	52.9
8/14/2020	12PM-1PM	49.5	70.2	37.9	56.5	54.9	52.3	45.4	49.5
8/14/2020	1PM-2PM	56.4	80.9	38.8	67.8	62.6	55.6	49.3	56.4
8/14/2020	2PM-3PM	56.8	81.9	40.6	67.7	61.0	56.9	50.0	56.8
CNEL		63.2							
Notes:									
[1.] Long-term noise monitoring location (LT1) is illustrated in Exhibit F.									

Noise data indicates the ambient noise level ranges between 48 dBA Leq to 64 dBA Leq during the operational hours of 7AM to 10PM. The measured CNEL is 63.2 dBA. When comparing the existing noise environment to the MARB noise contours, the project site is located inside the 65 to 70 dBA CNEL noise contour. Additional field notes and photographs are provided in Appendix A.

7.0 Future Noise Environment Impacts and Mitigation

This assessment analyzes future noise impacts as a result of the project. The analysis details the estimated exterior noise levels. Stationary noise impacts are analyzed from the on-site noise sources such as trucks loading and unloading.

7.1 Future Exterior Noise

The following outlines the exterior noise levels associated with the proposed project.

7.1.1 Noise Impacts to Off-Site Receptors Due to Stationary Sources

Adjacent uses that may be affected by project operational noise include general industrial to the north, south, east, and non-conforming residential to the west. The non-conforming residential uses are zoned industrial. Per MD observation it is not possible to tell if these are being occupied and will be treated as industrial for this study. The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes that all project activities are always operational when in reality the noise will be intermittent and cycle on/off depending on usage.

A total of three (3) receptors were modeled to evaluate the proposed project's operational impact. A receptor is denoted by a yellow dot. All yellow dots represent a property line or building facade. See Exhibit F.

This study compares the Project's operational noise levels to two (2) different noise assessment scenarios: 1) Project Only operational noise level projections, 2) Project plus ambient noise level projections.

Project Operational Noise Levels

Exhibit F and Exhibit G shows the "project only" operational noise levels at the property lines and adjacent areas. Exhibit F shows the CNEL noise contours at the project site and illustrates how the noise will propagate at the site. Project only CNEL noise levels range from 29 to 46 dBA CNEL. Exhibit G shows the Lmax noise contours at the project site and illustrates how the noise will propagate at the site. Project only Lmax noise levels range from 44 to 48 dBA Lmax.

Project Plus Ambient Operational Noise Levels

Table 2 demonstrates the project plus the ambient CNEL noise levels. Project plus ambient noise level projections are anticipated to measure 62 dBA CNEL at receptors (R1 – R3).

<Table 2, next page>

Table 2: Worst-case Predicted Operational CNEL Noise Level[1]

Receptor[1]	Existing Ambient Noise Level (dBA, CNEL)[2]	Project Noise Level (dBA, CNEL)[3]	Total Combined Noise Level (dBA, CNEL)	Land Use Compatibility (dBA, CNEL)	Change in Noise Level as Result of Project
1	63	29	63	**60**	0
2		32	63		0
3		46	63		0

Notes:
[1.] Receptor 1 and 2 are the non-conforming residential uses. Receptor 3 is the nearest property line.
[2.] The measured ambient CNEL
[3.]Per Noise Element Implementation measure V.A.I the CNEL noise level can not exceed 60 dBA CNEL.

As shown in Table 2, the project will increase the worst-case CNEL noise level by approximately 0 dBA CNEL at receptor (R1-R3). The project noise level will not exceed the 60 dBA CNEL noise limit.

Table 3 demonstrates the project plus the ambient Lmax noise levels. Project plus ambient noise level projections are anticipated to measure 71 dBA Lmax at receptors (R1 – R2).

Table 3: Worst-case Predicted Operational Lmax Noise Level[1]

Receptor[1]	Existing Ambient Noise Level (dBA, Lmax)[2]	Project Noise Level (dBA, Lmax)[3]	Total Combined Noise Level (dBA, Lmax(h))	City of Perris Nighttime noise limit (dBA, Lmax)	Change in Noise Level as Result of Project
1	71	44	71	**60**	0
2		48	71		0

Notes:
[1.] Receptor 1 and 2 are the non-conforming residential uses.
[2.] Quietest measured ambient Lmax between 10pm and 7am, 70.5 dBA Lmax.
[3.]Per Section 7.34.050 of the Municipal Code. Lmax can not exceed the standards found in section 7.34.040 of 60 dBA Lmax for nighttime hours

As shown in Table 3, the project will increase the worst-case Lmax noise level by approximately 0 dBA Lmax at receptor (R1-R2) and will not exceed the worst case nighttime Lmax noise limit of 60 dBA.

Table 4 provides the characteristics associated with changes in noise levels.

Table 4: Change in Noise Level Characteristics[1]

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud

https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

It should be noted that the ambient noise condition already exceeds the 60 dBA CNEL, and 60 dBA Lmax noise ordinance. Therefore, the project plus ambient level will exceed the noise limit. However, the change in noise level falls within the "Not Perceptible" acoustic characteristic. Making the change less than significant.

7.1.2 Noise Impacts to On/Off-Site Receptors Due to Project Generated Traffic

The project generates less than 500 daily trips and less than 50 peak hour trips during any peak hour; therefore, the project is presumed to have a less than significant impact on VMT and a traffic impact study for LOS evaluation is not required. Per the memo provided by Translutions, 7/31/2020 (*Webster Avenue and Nance Street Napa Warehouse – Trip Generation & VMT Screening Analysis*).

Traffic along the subject roadways would need to double in average daily traffic volumes to see a 3 dBA increase in noise level. Since MD could not find existing traffic counts and the above-mentioned study from Translutions does not include the existing traffic counts, MD used a LOS C scenario of 20,700 ADT and calculated the noise level to the nearest residential receptor. The noise level from Webster Ave would be 69.9 CNEL. MD then calculated the noise level with the added 304 trips from the mentioned report. The noise levels with the project would still measure 69.9 CNEL. Since the project generates a nominal amount of traffic relative to the existing ADTs, the project's traffic noise level increase would be nominal and therefore less than significant, see Appendix B.

7.1.3 Noise Impacts to On-Site Receptors Due to MARB Overhead Aircraft Sources

MD compared the project site location to the MARB noise contours and is illustrated in Appendix D. According to the noise contour map, the project is located between the 65 and 70 dBA CNEL contour. MD conducted a 24-hour measurement at the project site (8/13/2020 to 8/14/2020) to establish the existing 24-hour noise levels at the project site. The site measured 63 dBA CNEL with maximum levels reaching up to 64 dBA. The project site is susceptible to single-event aircraft noise from closed circuit events and therefore requires noise abatement measures to reduce interior levels in the offices down to 45 dBA CNEL or lower.

As stated in the City's noise ordinance Section 16.22.050, typical building shell construction provides a

20 dB noise reduction. When comparing the project's location relative to MARB noise contours, the anticipated noise level would be approximately 45 dBA (65-20=45). Since the project resides within the 65-70 dBA contour there is a potential for the interior noise level to reach up to 50 dBA when using typical building construction techniques. Therefore, glazing will be required to achieve at least CNEL 25 dB of noise reduction.

7.2 Mitigation Measures

The following outlines the mitigation measures:

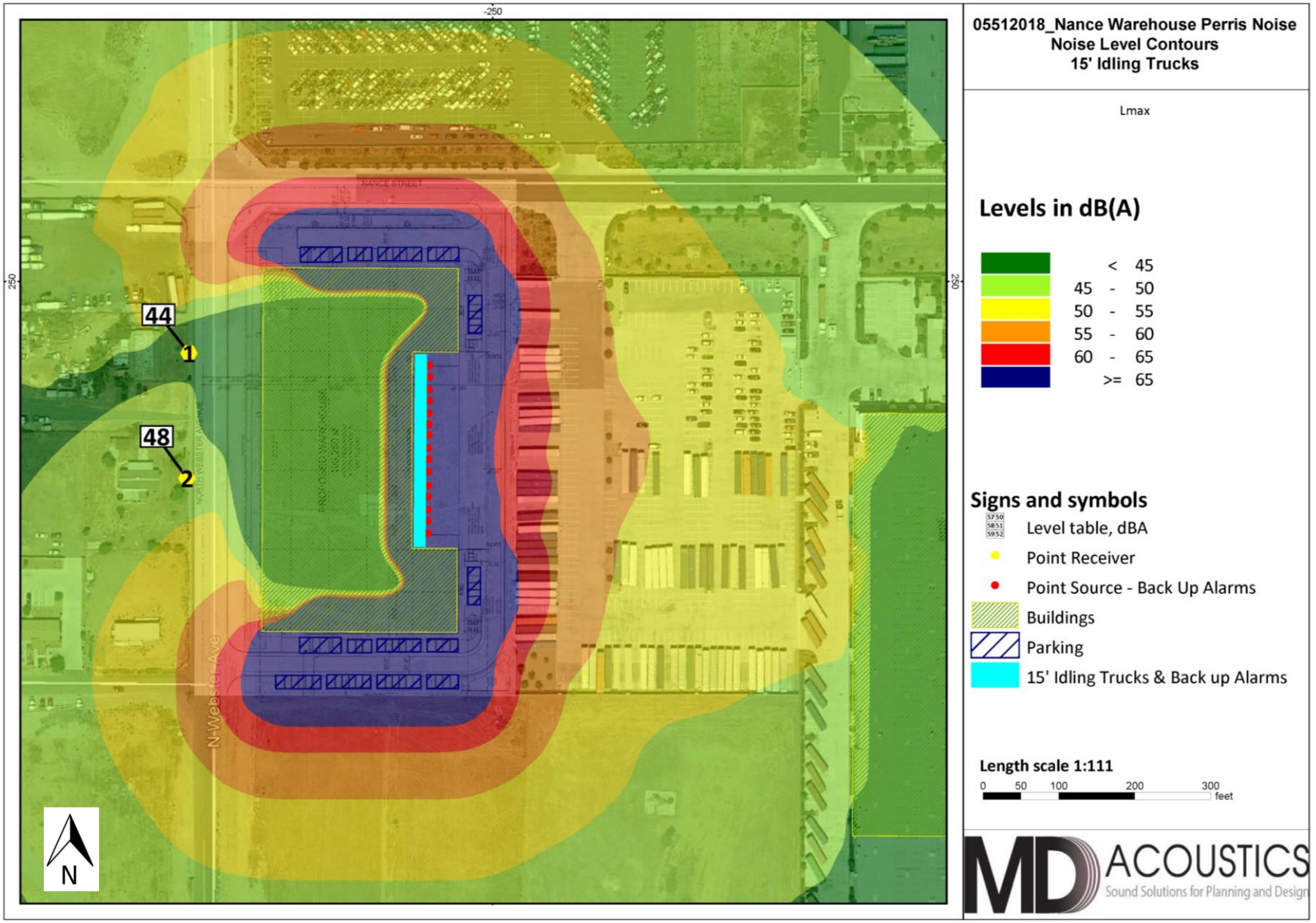
1. Building shell construction techniques must achieve a noise level reduction of CNEL 25 dB or more. Prior to issuing building permits, a final acoustical building specific analysis shall be provided which calculates the noise level reduction of the building shell.

Exhibit F

Operational Noise Levels CNEL

Exhibit G

Operational Noise Levels Lmax



8.0 Construction Noise Impact

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction.

8.1 Construction Noise

The Environmental Protection Agency (EPA) has compiled data regarding the noise generated characteristics of typical construction activities. The data is presented in Table 5.

Table 5: Typical Construction Equipment Noise Levels[1]

Type	Lmax (dBA) at 50 Feet
Backhoe	80
Truck	88
Concrete Mixer	85
Pneumatic Tool	85
Pump	76
Saw, Electric	76
Air Compressor	81
Generator	81
Paver	89
Roller	74

Notes:
[1] Referenced Noise Levels from FTA noise and vibration manual.

Construction is considered a short-term impact and would be considered significant if construction activities are taken outside the allowable times (7AM to 7PM) as described in the City's Municipal Code Section 7.34.060. Construction is anticipated to occur during the permissible hours according to the City's Municipal Code. Based on reference levels in Table 5 and assuming a usage factor of 40 percent for each piece of equipment, calculations provided in Appendix D identified unmitigated noise levels have the potential to reach 89 dBA Leq at 45 feet from the property boundary during building construction, or approximately at the location of the non-conforming residential land uses.

Construction noise will have a temporary or periodic increase in the ambient noise level above the existing within the project vicinity. The impact is considered less than significant however because construction will be conducted within the City's allowable times for construction as described in the City's municipal code.

Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels will be loudest during grading phase. A likely worst-case construction noise scenario during grading assumes the use of 1-grader, 1-dozer, 1-excavators, and 3-backhoes operating at the project property boundary.

8.2 Construction Vibration

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary vibration source during construction may be from a bulldozer. A large bulldozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is perceptible but below any risk to architectural damage.

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

$$PPV_{equipment} = PPV_{ref} (100/D_{rec})^n$$

Where: PPV_{ref} = reference PPV at 100ft.
D_{rec} = distance from equipment to receiver in ft.
n = 1.1 (the value related to the attenuation rate through ground)

The thresholds from the Caltrans Transportation and Construction Induced Vibration Guidance Manual in Table 6 (below) provides general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 6: Guideline Vibration Damage Potential Threshold Criteria

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

Source: Table 19, Transportation and Construction Vibration Guidance Manual, Caltrans, Sept. 2013.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 7 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

<Table 7, next page>

Table 7: Vibration Source Levels for Construction Equipment[1]

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	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

[1] Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

At a distance of 87 feet (distance of nearest structure from the site's western boundary), a large bulldozer would yield a worst-case 0.023 PPV (in/sec) which may be perceptible for short periods of time during grading along the eastern property line of the project site, but is below any threshold of damage. The impact is less than significant and no mitigation is required.

9.0 References

State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

City of Parris: General Plan Noise Element.

City of Parris: Municipal Code

March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan (Adopted November 13, 2014)

Translutions – Webster Avenue and Nance Street Napa Warehouse – Trip Generation & VMT Screening Analysis– 7/31/2020

Air Installations Compatible Use Zone Study: March Air Reserve Base, Air Force Reserve Command 2018

Appendix A:

Photographs and Field Measurement Data

MD ACOUSTICS
Sound Solutions for Planning and Design
www.mdacoustics.com

AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

24-Hour Continuous Noise Measurement Datasheet

Project:	Nance Warehouse	**Site Observations:**	Clear Sky 104F, desert conditions little to no wind. Cold at night in the mid 40'sF Local dispensary operates across the street at night and uses lot for parking.
Site Address/Location:	Nance St. & N. Webster Ave. Perrris, CA		
Date:	8/4/2020		
Field Tech/Engineer:	Jason Schuyler / Robert Pearson		

General Location:

Sound Meter: Piccolo 2 **SN:** 80206

Settings: A-weighted, slow, 1-min, 24-hour duration

Meteorological Con.: 104 degrees F, no wind.

Site ID: LT-1

Site Topo: Flat

Ground Type: Soft site, Open raw ground with a road

Noise Source(s) w/ Distance:
NM1 is 76' from c/l of road

Figure 1: LT-1 Monitoring Location

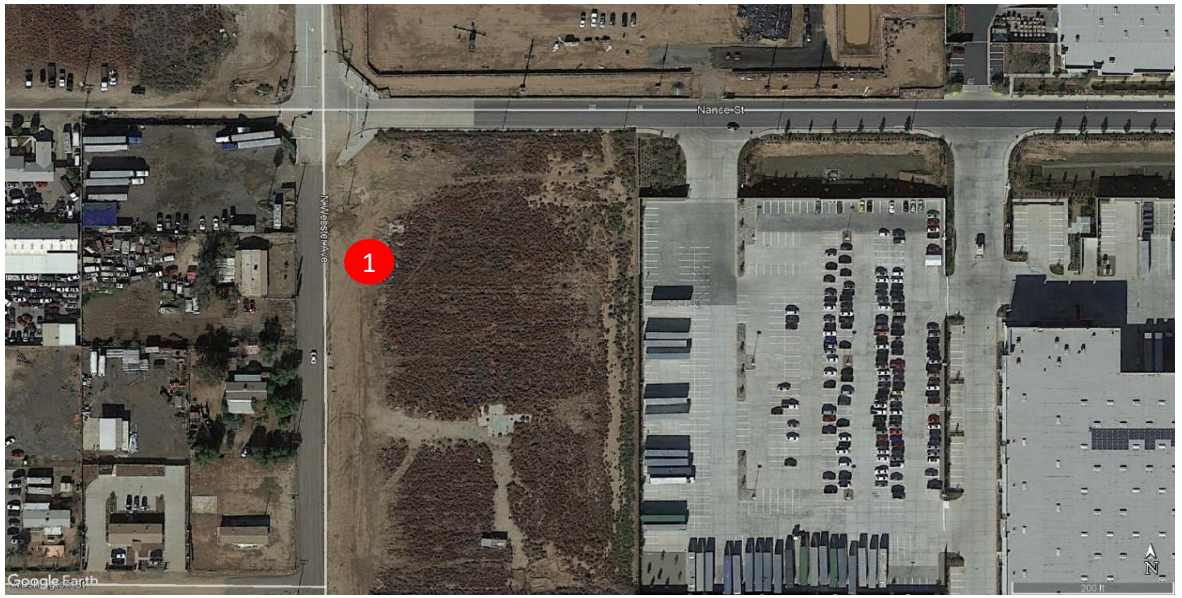


Figure 2: LT-1 Photo

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Chandler, AZ 85249

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Simi Valley, CA 93065

24-Hour Noise Measurement Datasheet - Cont.

Project: Nance Warehouse **Day:** 1 of 1

Site Address/Location: Nance St. & N. Webster Ave. Perrris, CA

Site ID: LT-1

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
8/13/2020	3:00 PM	4:00 PM	59.3	83.6	39.9	70.4	65.1	59.7	48.7	45.3
8/13/2020	4:00 PM	5:00 PM	51.9	75.9	40.4	58.3	56.7	55.7	49.4	46.2
8/13/2020	5:00 PM	6:00 PM	54.8	80.6	40.2	61.8	59.6	58.6	52.4	47.5
8/13/2020	6:00 PM	7:00 PM	53.5	64.9	49.8	61.4	59.3	55.6	49.8	46.2
8/13/2020	7:00 PM	8:00 PM	63.8	85.1	41.7	73.6	72.0	68.6	50.6	47.7
8/13/2020	8:00 PM	9:00 PM	52.0	77.6	42.8	58.1	55.3	54.6	49.6	47.2
8/13/2020	9:00 PM	10:00 PM	55.2	82.0	41.3	62.1	57.4	52.6	47.3	45.4
8/13/2020	10:00 PM	11:00 PM	62.0	84.5	39.4	72.3	71.4	61.3	49.1	45.7
8/13/2020	11:00 PM	12:00 AM	60.3	83.0	39.5	72.3	68.4	55.3	46.1	43.1
8/14/2020	12:00 AM	1:00 AM	53.2	79.0	39.8	63.4	58.9	56.6	47.5	44.8
8/14/2020	1:00 AM	2:00 AM	48.2	75.1	41.0	52.2	51.4	49.6	47.0	44.3
8/14/2020	2:00 AM	3:00 AM	51.7	77.2	41.8	58.5	55.0	53.8	47.4	45.3
8/14/2020	3:00 AM	4:00 AM	48.7	71.7	41.6	56.2	53.8	50.1	45.8	44.6
8/14/2020	4:00 AM	5:00 AM	49.7	74.2	42.7	56.3	54.4	51.4	47.8	46.0
8/14/2020	5:00 AM	6:00 AM	54.4	82.1	44.0	63.4	57.0	51.9	49.1	47.8
8/14/2020	6:00 AM	7:00 AM	52.2	70.5	45.9	58.0	55.7	53.9	51.2	49.5
8/14/2020	7:00 AM	8:00 AM	57.5	80.5	41.6	68.6	67.1	57.1	49.1	46.3
8/14/2020	8:00 AM	9:00 AM	50.7	76.7	40.2	58.2	55.4	53.8	46.5	43.8
8/14/2020	9:00 AM	10:00 AM	50.2	74.6	37.5	58.1	56.2	52.4	44.6	42.1
8/14/2020	10:00 AM	11:00 AM	55.5	82.6	37.2	67.5	58.1	51.1	43.9	41.9
8/14/2020	11:00 AM	12:00 PM	52.9	80.7	37.9	59.9	57.5	52.2	45.8	43.2
8/14/2020	12:00 PM	1:00 PM	49.5	70.2	37.9	56.5	54.9	52.3	45.4	42.5
8/14/2020	1:00 PM	2:00 PM	56.4	80.9	38.8	67.8	62.6	55.6	49.3	43.8
8/14/2020	2:00 PM	3:00 PM	56.8	81.9	40.6	67.7	61.0	56.9	50.0	47.5

CNEL: 63.2

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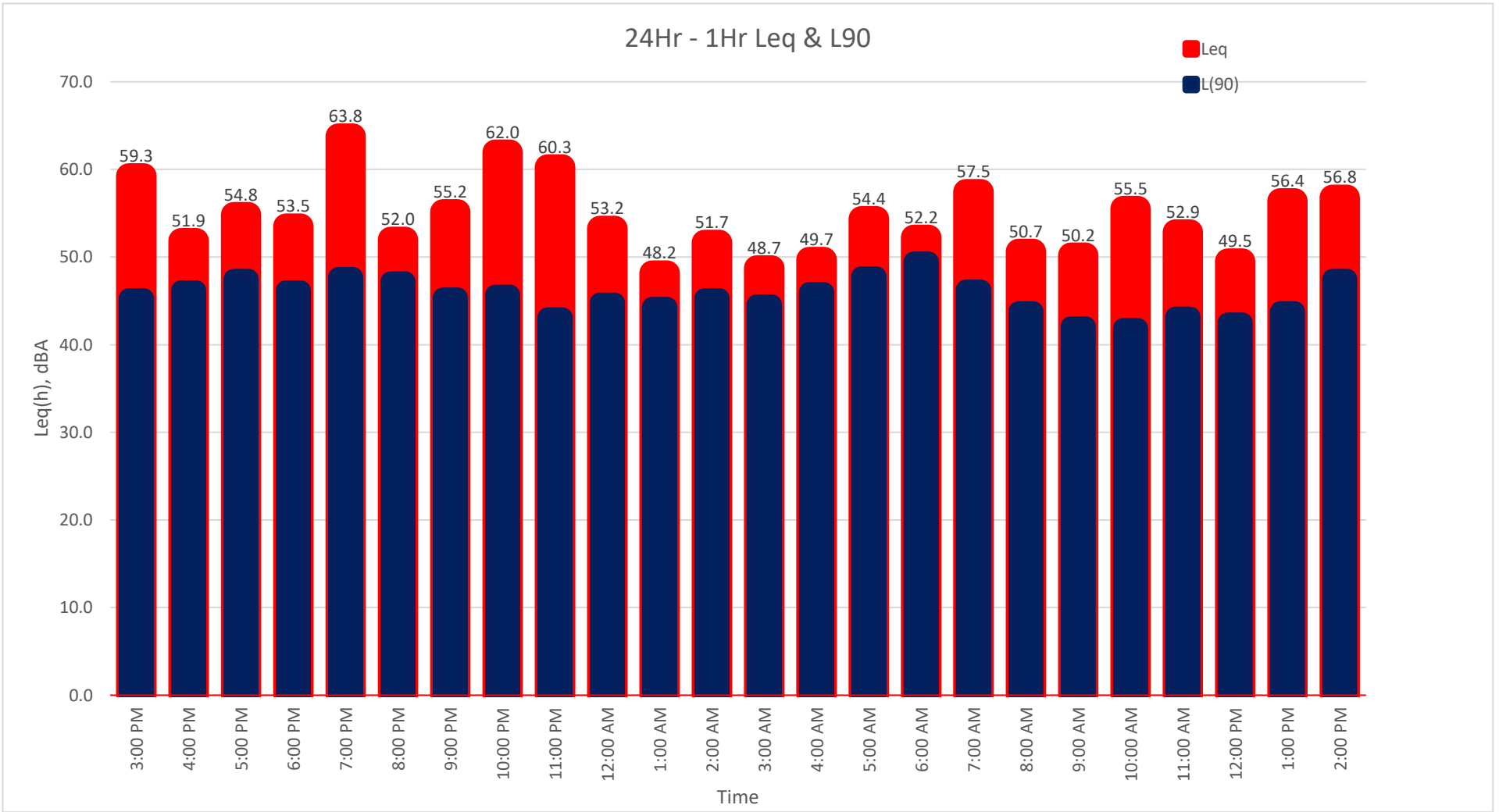
Simi Valley, CA 93065

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Nance Warehouse **Day:** 1 of 1

Site Address/Location: Nance St. & N. Webster Ave. Perrris, CA

Site ID: LT-1



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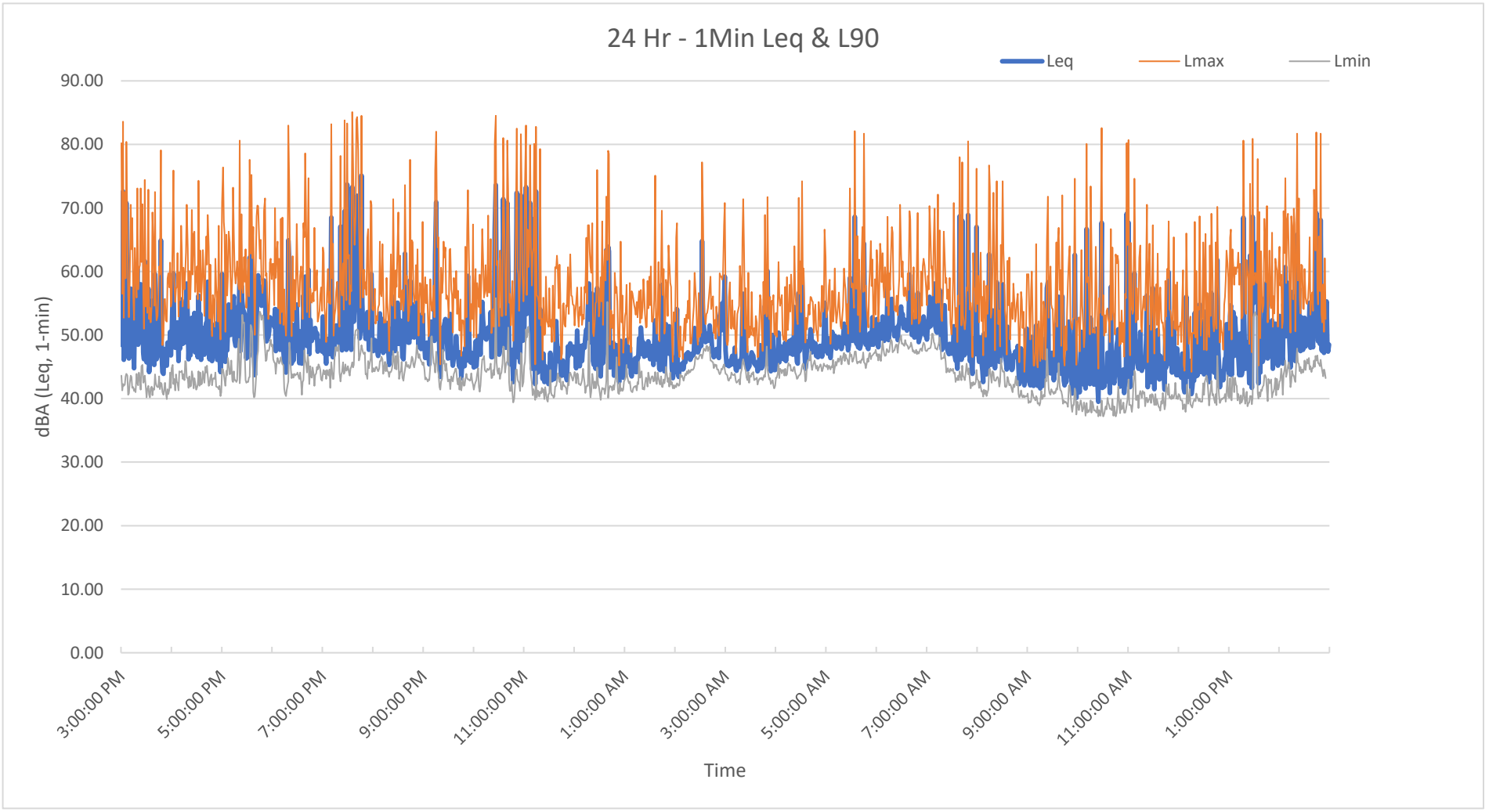


Appendix B:
Translutions Memo

translutions, inc.
17632 Irvine Boulevard, Suite 200
Tustin, California 92780
(949) 656 3131
solutions@translutions.com

July 31, 2020

Mr. Kenneth Phung, Planning Manager
City of Perris
101 N. D Street
Perris, California 92570

Subject: Webster Avenue and Nance Street Napa Warehouse – Trip Generation & VMT Screening Analysis

Dear Mr. Phung,

Translutions, Inc. (Translutions) is pleased to provide this letter discussing the trip generation and Vehicle Miles Traveled (VMT) for a proposed warehouse project to be located on the southeast corner of Webster Avenue and Nance Street in the City of Perris. The project includes the construction of a 109,250 square foot warehouse building.

INTRODUCTION

The City has recently approved the City of Perris *Transportation Impact Analysis Guidelines for CEQA* (May 2020). These guidelines include a CEQA Assessment for VMT analysis and lists the VMT thresholds, screening tools, and methodologies. The City also maintains LOS policies as part of the General Plan and discretionary review process. The following discussion includes a trip generation evaluation and VMT screening analysis consistent with the City's guidelines. The City of Perris VMT Scoping Form for Land Use Projects is also attached.

PROJECT DESCRIPTION

The project is located on the southeast corner of Webster Avenue and Nance Street in the City of Perris. The project includes the construction of a 109,250 square foot warehouse building. The site plan for the project is shown if Figure 1.

PROJECT TRIP GENERATION

Trip generation for the project is based on trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation (10th Edition) and are based on Land Use 150 - "Warehousing". Further, truck trips were converted to Passenger Car Equivalents using the conversion rates of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks and 3.0 for 4+ axle trucks. Table A shows the trip generation for the project. As shown in Table A, the project is forecast to generate 21 total trips during the a.m. peak hour, 22 total trips during the p.m. peak hour, and 192 total daily trips. After converting to PCEs, the project is anticipated to generate 34 PCE trips during the a.m. peak hour, 35 PCE trips during the p.m. peak hour, and 304 daily PCE trips.

Based on the City of Perris Guidelines, a traffic impact study for LOS evaluation is required for projects which exceed 500 daily trips or 50 peak hour trips. Based on the trip generation shown in Table A, the project is forecast to generate less than 500 daily trips and less than 50 peak hour trips during any peak hour. Therefore, a traffic impact study for LOS evaluation is not required.

ACCESS/INTERNAL CIRCULATION

Vehicular access to the project site includes one full-access driveway on Nance Street and one full-access driveway on Webster Avenue. Webster Avenue is an unpaved two-lane roadway south of Nance Street. Nance Street is an unpaved two-lane roadway west of Webster Avenue. On-street parking is prohibited on Nance Street east of Webster Avenue.

Internal circulation consists of driveway aisles with a minimum width of 20 feet and 13 feet-6 inches of unobstructed vertical clearance.

PARKING DEMAND

The project parking demand is shown in Figure 1 and includes parking rates from the City's municipal code Section 19.69.030. Based on the City's code, the total parking demand required for the project is 43 parking spaces and the number of parking spaces provided is 64. Therefore, the total number of parking spaces provided is adequate to the meet the forecast project parking demand based on the City's municipal code.

PROJECT SCREENING FOR VMT ANALYSIS

Based on the City's guidelines, screening criteria can be used to determine where a project would be expected to cause a less than significant impact without having to conduct a detailed study. The screening criteria adopted by the City of Perris are based on recommendations from OPR and WRCOG for setting screening thresholds for land use projects. The following threshold is applicable to the project:

E. Are the project's net daily trips less than 500 ADT? Projects that generate less than 500 daily trips (ADT) would not cause substantial increase in the total citywide or regional VMT and are therefore presumed to have a less than significant impact on VMT.

Based on the trip generation shown in Table A, the proposed project would generate less than 500 daily trips. Since the project generates less than 500 daily trips, the project is presumed to have a less than significant impact on VMT.

CONCLUSION

Based on the trip generation shown in Table A, the project generates less than 500 daily trips and less than 50 peak hour trips during any peak hour; therefore the project is presumed to have a less than significant impact on VMT and a traffic impact study for LOS evaluation is not required.

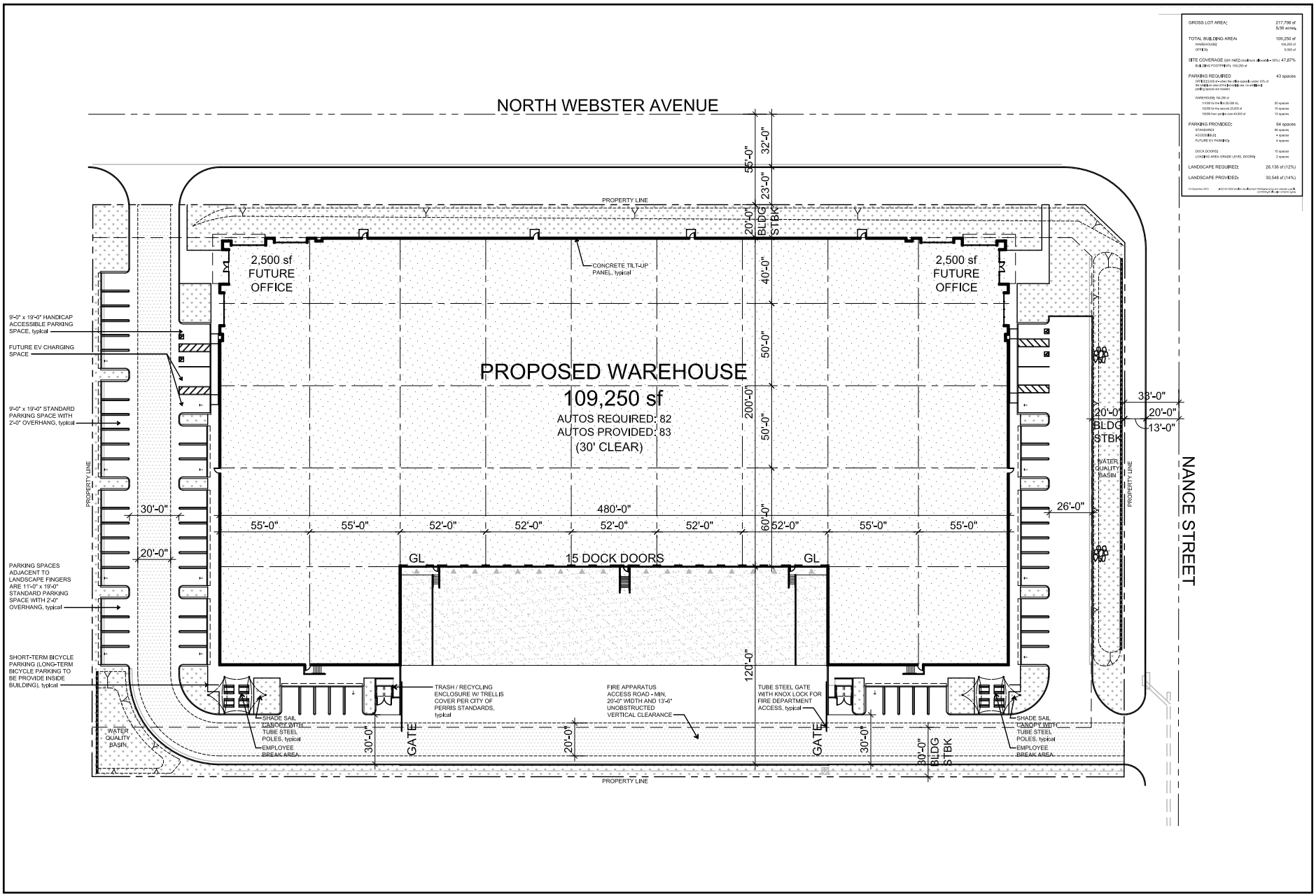
We hope you will find this information helpful. Should you have any questions, please don't hesitate to call me at (949) 656-3131 or by email at sandipan@translutions.com.

Sincerely,

translutions, Inc.

Sandipan Bhattacharjee, P.E., T.E., AICP, ENV SP
Principal

Attachments: Figure 1 – Site Plan
Table A – Project Trip Generation
City of Perris VMT Scoping Form for Land Use Projects



Source: Carlile Coatsworth Architects (December 10, 2019)

FIGURE 1

Nance Street and Webster Avenue Warehouse
Site Plan

translutions
the transportation solutions company...

D:\Projects\Phelan Perris Warehouse\Scope\Z40 Site Plan Warehouse_Landscape.cdr

translutions
the transportation solutions company...

Table A: Project Trip Generation

Land Use	Units	Peak Hour						Daily
		AM Peak Hour			PM Peak Hour			
		In	Out	Total	In	Out	Total	
Total Vehicle Rates								
Trip Generation Rates[1]	TSF	0.131	0.039	0.170	0.051	0.139	0.190	1.740
PCE Inbound/Outbound Splits		77%	23%	100%	27%	73%	100%	50%/50%
Passenger Car Equivalent Rates Calculations								
Passenger Cars								
Recommended Mix (%)[2]		61.90%	61.90%	61.90%	61.90%	61.90%	61.90%	61.90%
PCE Factor[3]		1.0	1.0	1.0	1.0	1.0	1.0	1.0
PCE Rates		0.477	0.024	0.105	0.032	0.086	0.118	1.077
2-Axle Trucks								
Recommended Mix (%)[2]		6.45%	6.45%	6.45%	6.45%	6.45%	6.45%	6.45%
PCE Factor[3]		1.5	1.5	1.5	1.5	1.5	1.5	1.5
PCE Rates		0.013	0.004	0.016	0.005	0.013	0.018	0.168
3-Axle Trucks								
Recommended Mix (%)[2]		8.65%	8.65%	8.65%	8.65%	8.65%	8.65%	8.65%
PCE Factor[3]		2.0	2.0	2.0	2.0	2.0	2.0	2.0
PCE Rates		0.023	0.007	0.029	0.009	0.024	0.033	0.301
4-Axle Trucks								
Recommended Mix (%)[2]		22.99%	22.99%	22.99%	22.99%	22.99%	22.99%	22.99%
PCE Factor[3]		3.0	3.0	3.0	3.0	3.0	3.0	3.0
PCE Rates		0.090	0.027	0.117	0.035	0.096	0.131	1.200
Warehouse Net PCE Rate		0.602	0.062	0.268	0.081	0.219	0.300	2.747
Total Project Trip Generation (Trips, By Vehicle Type)								
Warehouse	109.25 TSF							
Passenger Cars		9	3	12	4	9	13	118
2-Axle Trucks		2	0	2	1	1	2	13
3-Axle Trucks		2	0	2	1	1	2	17
4+ Axle Trucks		4	1	5	2	3	5	44
All Trucks		8	1	9	4	5	9	74
Total Vehicles		17	4	21	8	14	22	192
Total Project Trip Generation (Passenger Car Eqivalent Trips, By Vehicle Type)								
Passenger Cars		9	3	12	4	9	13	118
Truck PCE								
2-Axle Trucks		3	0	3	1	2	3	20
3-Axle Trucks		4	0	4	2	2	4	34
4+ Axle Trucks		12	3	15	6	9	15	132
Total Truck PCE		19	3	22	9	13	22	186
Total PCE		28	6	34	13	22	35	304

[1] Rates based on Land Use 150 "Warehousing" from Institute of Transportation Engineers (ITE) Trip Generation (10th Ed.).

[2] Recommended Truck Mix Percentages per SCAQMD Truck Trip Generation Study.

[3] Recommended PCE Factor per SBCTA Guidelines

City of Perris
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CITY OF PERRIS
VMT SCOPING FORM FOR LAND USE PROJECTS

This Scoping Form acknowledges the City of Perris requirements for the evaluation of transportation impacts under CEQA. The analysis provided in this form should follow the City of Perris TIA Guidelines, dated May 12, 2020.

I. Project Description

Tract/Case No.

Project Name: Phelan Perris Warehouse

Project Location: Southeast corner of Webster Avenue/Nance Street

Project Description: 109,250 square foot Warehouse
(Please attach a copy of the project Site Plan)

Current GP Land Use: PVCC SP **Proposed GP Land Use:** PVCC SP

Current Zoning: PVCC SP **Proposed Zoning:** PVCC SP

If a project requires a General Plan Amendment or Zone change, then additional information and analysis should be provided to ensure the project is consistent with RHNA and RTP/SCS Strategies.

II. VMT Screening Criteria

A. Is the Project 100% affordable housing?	**YES**		**NO**	**X**	Attachments:
B. Is the Project within 1/2 mile of qualifying transit?	**YES**		**NO**	**X**	Attachments:
C. Is the Project a local serving land use?	**YES**		**NO**	**X**	Attachments:
D. Is the Project in a low VMT area?	**YES**		**NO**	**X**	Attachments:
E. Are the Project's Net Daily Trips less than 500 ADT?	**YES**	**X**	**NO**		Attachments:

Low VMT Area Evaluation:

Citywide VMT Averages[1]		
Citywide Home-Based VMT =	15.05	VMT/Capita
Citywide Employment-Based VMT =	11.62	VMT/Employee

WRCOG VMT MAP

Project TAZ	VMT Rate for Project TAZ[1]		Type of Project	
3754	**13.42**	VMT/Capita	Residential:	
	12.19	VMT/Employee	Non-Residential:	**X**

[1] Base year (2012) projections from RIVTAM.

Trip Generation Evaluation:

Source of Trip Generation: ITE 10th Edition Trip Generation

Project Trip Generation: **304** **Average Daily Trips (ADT)**

Internal Trip Credit:	YES		NO	**X**	% Trip Credit:
Pass-By Trip Credit:	YES		NO	**X**	% Trip Credit:
Affordable Housing Credit:	YES		NO	**X**	% Trip Credit:
Existing Land Use Trip Credit:	YES		NO	**X**	Trip Credit:

Net Project Daily Trips: **304** **Average Daily Trips (ADT)** Attachments:

Does project trip generation warrant an LOS evaluation outside of CEQA? **YES** | | **NO** **X**

III. VMT Screening Summary

A. Is the Project presumed to have a less than significant impact on VMT?
A Project is presumed to have a less than significant impact on VMT if the Project satisfies at least one (1) of the VMT screening criteria.

Less Than Significant

B. Is mitigation required?
If the Project does not satisfy at least one (1) of the VMT screening criteria, then mitigation is required to reduce the Project's impact on VMT.

No Mitigation Required

C. Is additional VMT modeling required to evaluate Project impacts?	YES		NO	X

If the Project requires a zone change and/or General Plan Amendment AND generates 2,500 or more net daily trips, then additional VMT modeling using RIVTAM/RIVCOM is required. If the project generates less than 2,500 net daily trips, the Project TAZ VMT Rate can be used for mitigation purposes.

IV. MITIGATION

A. Citywide Average VMT Rate (Threshold of Significance) for Mitigation Purposes:	**N/A**	**N/A**
B. Unmitigated Project TAZ VMT Rate:	**N/A**	**N/A**
C. Percentage Reduction Required to Achieve the Citywide Average VMT:	**N/A**	

D. VMT Reduction Mitigation Measures:

Source of VMT Reduction Estimates:	
Project Location Setting	

	VMT Reduction Mitigation Measure:	Estimated VMT Reduction (%)
1.		0.00%
2.		0.00%
3.		0.00%
4.		0.00%
5.		0.00%
6.		0.00%
7.		0.00%
8.		0.00%
9.		0.00%
10.		0.00%
Total VMT Reduction (%)		**0.00%**

(Attach additional pages, if necessary, and a copy of all mitigation calculations.)

E. Mitigated Project TAZ VMT Rate:	**N/A**	**N/A**

F. Is the project pressumed to have a less than significant impact with mitigation?

N/A

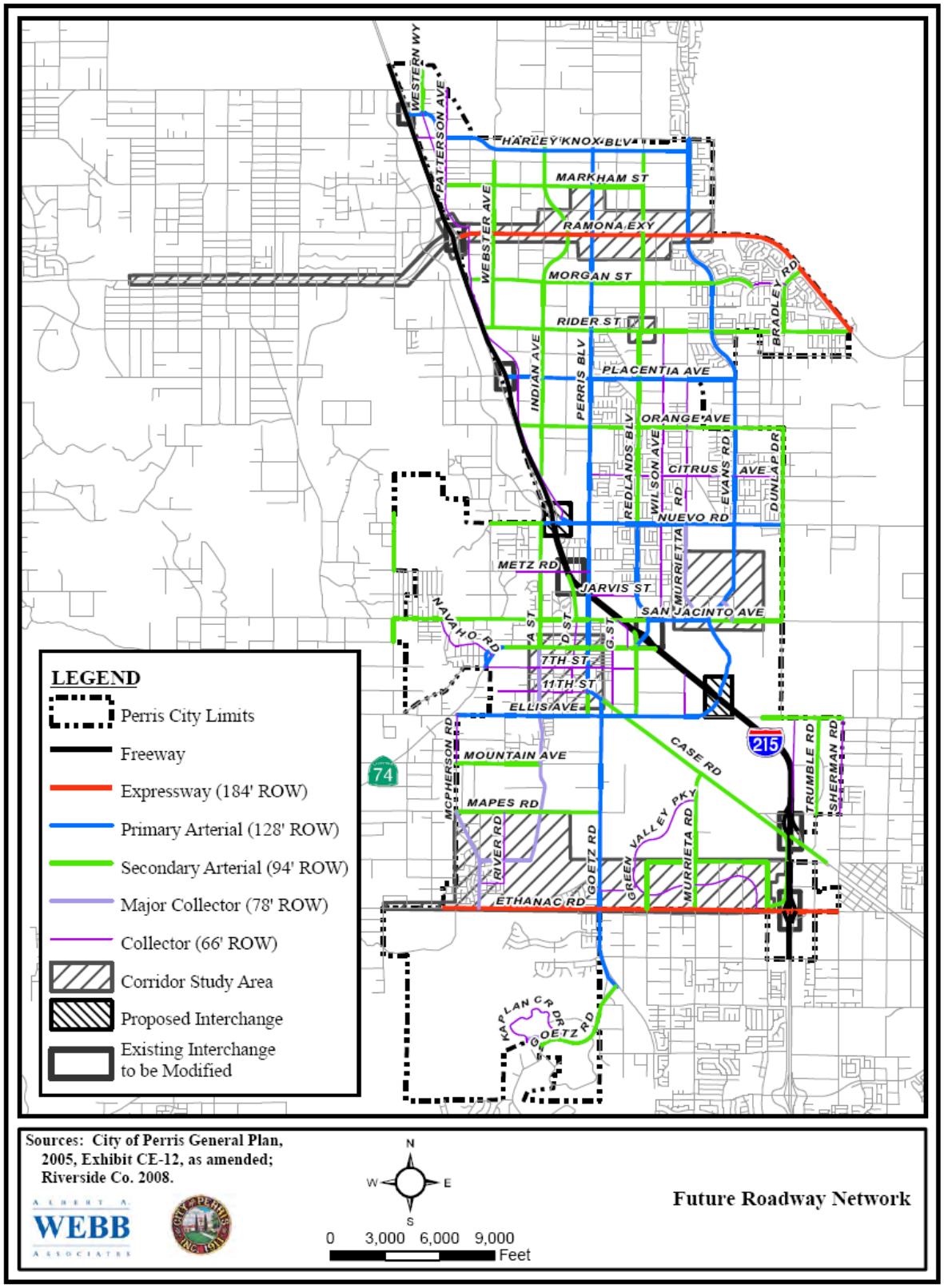
If the mitigated Project VMT rate is below the Citywide Average Rate, then the Project is presumed to have a less than significant impact with mitigation. If the answer is no, then additional VMT modeling may be required and a potentially significant and unavoidable impact may occur. All mitigation measures identified in Section IV.D. are subject to become Conditions of Approval of the project. Development review and processing fees should be submitted with, or prior to the submittal of this Form. The Planning Department staff will not process the Form prior to fees being paid to the City.

Prepared By		Developer/Applicant	
Company:	Translutions	**Company:**	Phelan Development
Contact:	Sandipan Bhattacharjee	**Contact:**	Tania Chavez
Address:	17632 Irvine Blvd,Ste 200,Tustin,CA 92780	**Address:**	450 Newport Ctr Dr,Ste 405,Newport Beach,CA
Phone:	(949) 656-3131	**Phone:**	(949) 531-6559
Email:	sb@translutions.com	**Email:**	
Date:	7/31/2020	**Date:**	7/31/2020

Approved by:

Perris Development Serivces Dept.	Date	Perris Public Works Dept.	Date

Exhibit CE-4: City of Perris Existing Roadway Network



FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: Nance Warehouse
ROADWAY: N Webster Ave
LOCATION: Los C Max Capacity

JOB #: 0551-2020-18
DATE: 5-Oct-21
ENGINEER: R. Pearson

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = 20,700
SPEED = 40
PK HR % = 10
NEAR LANE/FAR LANE DIST = 25
ROAD ELEVATION = 0.0
GRADE = 0.0 %
PK HR VOL = 2,070

RECEIVER INPUT DATA

RECEIVER DISTANCE = 70
DIST C/L TO WALL = 0
RECEIVER HEIGHT = 5.0
WALL DISTANCE FROM RECEIVER = 10
PAD ELEVATION = 0.0
ROADWAY VIEW: LF ANGLE= -90
RT ANGLE= 90
DF ANGLE= 180

SITE CONDITIONS

AUTOMOBILES = 10
MEDIUM TRUCKS = 10 (10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS = 10

WALL INFORMATION

HTH WALL= 0.0
AMBIENT= 0.0
BARRIER = 0 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.105	0.9742
MEDIUM TRUCKS	0.489	0.022	0.489	0.0184
HEAVY TRUCKS	0.473	0.054	0.473	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	68.94	- -
MEDIUM TRUCKS	4.0	68.88	- -
HEAVY TRUCKS	8.0	68.94	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.6	65.6	64.3	58.3	66.7	67.3
MEDIUM TRUCKS	59.3	55.4	48.0	56.7	62.9	62.9
HEAVY TRUCKS	60.2	56.2	52.8	57.4	63.6	63.7
NOISE LEVELS (dBA)	68.9	66.4	64.7	62.3	69.5	69.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.6	65.6	64.3	58.3	66.7	67.3
MEDIUM TRUCKS	59.3	55.4	48.0	56.7	62.9	62.9
HEAVY TRUCKS	60.2	56.2	52.8	57.4	63.6	63.7
NOISE LEVELS (dBA)	68.9	66.4	64.7	62.3	69.5	69.9

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	68	215	680	2149
LDN	62	197	624	1973

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: Nance Warehouse
ROADWAY: N Webster Ave
LOCATION: Los C Max Capacity +Project

JOB #: 0551-2021-18
DATE: 5-Oct-21
ENGINEER: R. Pearson

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	21,004
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST :	25
ROAD ELEVATION =	0.0
GRADE =	0.0 %
PK HR VOL =	2,100

RECEIVER INPUT DATA

RECEIVER DISTANCE =		70
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER =		10
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10	
MEDIUM TRUCKS =	10	(10 = HARD SITE, 15 = SOFT SITE)
HEAVY TRUCKS =	10	

WALL INFORMATION

HTH WALL=	0.0	
AMBIENT=	0.0	
BARRIER =	0	(0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.755	0.140	0.105	0.9742
MEDIUM TRUCKS	0.489	0.022	0.489	0.0184
HEAVY TRUCKS	0.473	0.054	0.473	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	68.94	- -
MEDIUM TRUCKS	4.0	68.88	- -
HEAVY TRUCKS	8.0	68.94	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.7	65.7	64.4	58.3	66.8	67.4
MEDIUM TRUCKS	59.4	55.5	48.1	56.7	62.9	63.0
HEAVY TRUCKS	60.3	56.2	52.8	57.5	63.7	63.8
NOISE LEVELS (dBA)	68.9	66.5	64.7	62.3	69.6	69.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.7	65.7	64.4	58.3	66.8	67.4
MEDIUM TRUCKS	59.4	55.5	48.1	56.7	62.9	63.0
HEAVY TRUCKS	60.3	56.2	52.8	57.5	63.7	63.8
NOISE LEVELS (dBA)	68.9	66.5	64.7	62.3	69.6	69.9

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	69	218	690	2180
LDN	63	200	633	2002

Appendix C:

SoundPlan Input/Output

Nance Warehouse Perris Noise
Octave spectra of the sources in dB(A) - 001 - CNEL: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
15 Idling Heavy Diesel Truck	Area	374.91			65.0	90.7	0.0	0.0	91.8	0	Back up Alarm	Idiling Heavy Diesel Truck	59.9	77.6	76.4	82.8	87.3	84.0	79.0	71.0	58.9
Back up Alarm 1	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 2	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 3	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 4	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 5	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 6	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 7	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 8	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 9	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 10	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 11	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 12	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 13	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 14	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Back up Alarm 15	Point				83.6	83.6	0.0	0.0		0	Back up Alarm	Back up Beeper	68.8	63.2	65.2	72.3	71.0	82.6	66.6	59.3	46.0
Parking 1	PLot	66.14			54.8	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8
Parking 2	PLot	94.09			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 3	PLot	50.56			54.7	71.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	55.1	66.7	59.2	63.7	63.8	64.2	61.5	55.3	42.5
Parking 4	PLot	100.18			53.0	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8
Parking 5	PLot	80.29			54.9	74.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	57.3	68.9	61.4	65.9	66.0	66.4	63.7	57.5	44.7
Parking 6	PLot	76.29			55.2	74.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	57.3	68.9	61.4	65.9	66.0	66.4	63.7	57.5	44.7
Parking 7	PLot	68.43			54.7	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8
Parking 8	PLot	94.09			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 9	PLot	94.82			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 10	PLot	96.15			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 11	PLot	64.19			54.9	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8
Parking 12	PLot	89.07			55.3	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 13	PLot	50.20			54.8	71.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	55.1	66.7	59.2	63.7	63.8	64.2	61.5	55.3	42.5
Parking 14	PLot	105.91			52.8	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Receiver Receiver 1 Fl G dB(A) Ldn 28.9 dB(A) Sigma(Ldn) 0.0 dB(A)						
15 Idling Heavy Diesel Truck	Default industrial noise	Area		1.1	0.0	
Parking 1	Default parking lot noise	PLot		16.6	0.0	
Parking 2	Default parking lot noise	PLot		19.7	0.0	
Parking 3	Default parking lot noise	PLot		18.3	0.0	
Parking 4	Default parking lot noise	PLot		22.4	0.0	
Parking 5	Default parking lot noise	PLot		13.8	0.0	
Parking 6	Default parking lot noise	PLot		12.6	0.0	
Parking 7	Default parking lot noise	PLot		14.1	0.0	
Parking 8	Default parking lot noise	PLot		16.5	0.0	
Parking 9	Default parking lot noise	PLot		17.6	0.0	
Parking 10	Default parking lot noise	PLot		21.5	0.0	
Parking 11	Default parking lot noise	PLot		11.0	0.0	
Parking 12	Default parking lot noise	PLot		13.5	0.0	
Parking 13	Default parking lot noise	PLot		11.3	0.0	
Parking 14	Default parking lot noise	PLot		13.6	0.0	
Back up Alarm 1	Default industrial noise	Point		-4.8	0.0	
Back up Alarm 2	Default industrial noise	Point		-4.6	0.0	
Back up Alarm 3	Default industrial noise	Point		-4.5	0.0	
Back up Alarm 4	Default industrial noise	Point		-4.3	0.0	
Back up Alarm 5	Default industrial noise	Point		-4.1	0.0	
Back up Alarm 6	Default industrial noise	Point		-4.0	0.0	
Back up Alarm 7	Default industrial noise	Point		-3.8	0.0	
Back up Alarm 8	Default industrial noise	Point		-3.8	0.0	
Back up Alarm 9	Default industrial noise	Point		-3.6	0.0	
Back up Alarm 10	Default industrial noise	Point		-3.6	0.0	
Back up Alarm 11	Default industrial noise	Point		-3.5	0.0	
Back up Alarm 12	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 13	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 14	Default industrial noise	Point		-3.3	0.0	
Back up Alarm 15	Default industrial noise	Point		-3.3	0.0	
Receiver Receiver 2 Fl G dB(A) Ldn 31.9 dB(A) Sigma(Ldn) 0.0 dB(A)						
15 Idling Heavy Diesel Truck	Default industrial noise	Area		1.5	0.0	
Parking 1	Default parking lot noise	PLot		12.7	0.0	
Parking 2	Default parking lot noise	PLot		15.2	0.0	
Parking 3	Default parking lot noise	PLot		13.1	0.0	
Parking 4	Default parking lot noise	PLot		15.7	0.0	
Parking 5	Default parking lot noise	PLot		13.0	0.0	
Parking 6	Default parking lot noise	PLot		13.5	0.0	
Parking 7	Default parking lot noise	PLot		16.6	0.0	
Parking 8	Default parking lot noise	PLot		19.5	0.0	
Parking 9	Default parking lot noise	PLot		21.3	0.0	
Parking 10	Default parking lot noise	PLot		29.7	0.0	
Parking 11	Default parking lot noise	PLot		14.0	0.0	

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Parking 12	Default parking lot noise	PLot		16.8	0.0	
Parking 13	Default parking lot noise	PLot		15.0	0.0	
Parking 14	Default parking lot noise	PLot		18.1	0.0	
Back up Alarm 1	Default industrial noise	Point		-3.6	0.0	
Back up Alarm 2	Default industrial noise	Point		-3.5	0.0	
Back up Alarm 3	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 4	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 5	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 6	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 7	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 8	Default industrial noise	Point		-3.4	0.0	
Back up Alarm 9	Default industrial noise	Point		-3.5	0.0	
Back up Alarm 10	Default industrial noise	Point		-3.5	0.0	
Back up Alarm 11	Default industrial noise	Point		-3.6	0.0	
Back up Alarm 12	Default industrial noise	Point		-3.7	0.0	
Back up Alarm 13	Default industrial noise	Point		-3.8	0.0	
Back up Alarm 14	Default industrial noise	Point		-3.9	0.0	
Back up Alarm 15	Default industrial noise	Point		-4.0	0.0	
Receiver Receiver 3 Fl G dB(A) Ldn 45.6 dB(A) Sigma(Ldn) 0.0 dB(A)						
15 Idling Heavy Diesel Truck	Default industrial noise	Area		35.6	0.0	
Parking 1	Default parking lot noise	PLot		28.2	0.0	
Parking 2	Default parking lot noise	PLot		19.8	0.0	
Parking 3	Default parking lot noise	PLot		15.3	0.0	
Parking 4	Default parking lot noise	PLot		15.5	0.0	
Parking 5	Default parking lot noise	PLot		41.4	0.0	
Parking 6	Default parking lot noise	PLot		36.7	0.0	
Parking 7	Default parking lot noise	PLot		28.2	0.0	
Parking 8	Default parking lot noise	PLot		21.3	0.0	
Parking 9	Default parking lot noise	PLot		20.1	0.0	
Parking 10	Default parking lot noise	PLot		19.2	0.0	
Parking 11	Default parking lot noise	PLot		25.3	0.0	
Parking 12	Default parking lot noise	PLot		18.1	0.0	
Parking 13	Default parking lot noise	PLot		13.7	0.0	
Parking 14	Default parking lot noise	PLot		13.9	0.0	
Back up Alarm 1	Default industrial noise	Point		26.6	0.0	
Back up Alarm 2	Default industrial noise	Point		26.9	0.0	
Back up Alarm 3	Default industrial noise	Point		27.2	0.0	
Back up Alarm 4	Default industrial noise	Point		27.6	0.0	
Back up Alarm 5	Default industrial noise	Point		28.0	0.0	
Back up Alarm 6	Default industrial noise	Point		28.6	0.0	
Back up Alarm 7	Default industrial noise	Point		28.8	0.0	
Back up Alarm 8	Default industrial noise	Point		29.2	0.0	
Back up Alarm 9	Default industrial noise	Point		29.8	0.0	
Back up Alarm 10	Default industrial noise	Point		29.9	0.0	
Back up Alarm 11	Default industrial noise	Point		29.9	0.0	

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Back up Alarm 12	Default industrial noise	Point		29.8	0.0	
Back up Alarm 13	Default industrial noise	Point		30.2	0.0	
Back up Alarm 14	Default industrial noise	Point		29.9	0.0	
Back up Alarm 15	Default industrial noise	Point		29.7	0.0	

Nance Warehouse Perris Noise
Contribution spectra - 001 - CNEL: Outdoor SP

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Receiver Receiver 1 FI G dB(A) Ldn 28.9 dB(A) Sigma(Ldn) 0.0 dB(A)																													
15 Idling Heavy Diesel Truck	Ldn	1.1	-34.4	-30.7	-27.7	-27.2	-23.5	-19.4	-19.7	-5.9	-16.8	-15.8	-16.1	-14.1	-11.9	-11.5	-11.8	-9.7	-5.9	-10.7	-10.7	-11.2	-13.7	-16.4	-19.3	-22.7	-28.7	-36.8	-46.2
Back up Alarm 1	Ldn	-4.8	-22.7	-21.9	-27.8	-15.4	-10.2	-13.0	-21.5	-25.4	-27.5	-28.8	-28.8	-25.1	-18.2	-27.3	-28.0	-26.4	-26.6	-27.2	-25.0	-15.3	-11.6	-29.3	-34.0	-38.6	-43.8	-49.9	-62.7
Back up Alarm 2	Ldn	-4.6	-22.6	-21.8	-27.7	-15.3	-10.1	-12.9	-21.4	-25.2	-27.4	-28.7	-28.6	-25.0	-18.1	-27.1	-27.9	-26.3	-26.4	-26.9	-24.8	-15.1	-11.4	-29.1	-33.7	-38.3	-43.4	-49.4	-62.0
Back up Alarm 3	Ldn	-4.5	-22.4	-21.6	-27.6	-15.1	-10.0	-12.7	-21.2	-25.1	-27.3	-28.6	-28.5	-24.8	-18.0	-27.0	-27.7	-26.2	-26.2	-26.7	-24.6	-14.9	-11.2	-28.8	-33.4	-38.0	-43.0	-48.9	-61.4
Back up Alarm 4	Ldn	-4.3	-22.2	-21.5	-27.4	-15.0	-9.8	-12.6	-21.1	-25.0	-27.1	-28.4	-28.4	-24.7	-17.8	-26.9	-27.6	-26.0	-25.9	-26.5	-24.4	-14.6	-11.0	-28.6	-33.2	-37.6	-42.6	-48.4	-60.7
Back up Alarm 5	Ldn	-4.1	-22.1	-21.3	-27.3	-14.8	-9.7	-12.5	-20.9	-24.8	-27.0	-28.3	-28.3	-24.6	-17.7	-26.8	-27.5	-25.9	-25.8	-26.3	-24.2	-14.5	-10.8	-28.4	-32.9	-37.4	-42.3	-48.0	-60.2
Back up Alarm 6	Ldn	-4.0	-22.0	-21.2	-27.1	-14.7	-9.6	-12.4	-20.8	-24.7	-26.8	-28.2	-28.1	-24.4	-17.6	-26.6	-27.4	-25.8	-25.5	-26.1	-24.0	-14.2	-10.5	-28.1	-32.7	-37.0	-41.9	-47.5	-59.6
Back up Alarm 7	Ldn	-3.8	-21.8	-21.0	-27.0	-14.6	-9.5	-12.3	-20.7	-24.6	-26.7	-28.1	-28.0	-24.3	-17.5	-26.5	-27.2	-25.6	-25.4	-25.9	-23.8	-14.1	-10.4	-27.9	-32.4	-36.8	-41.6	-47.1	-59.0
Back up Alarm 8	Ldn	-3.8	-21.8	-21.0	-26.9	-14.5	-9.4	-12.2	-20.6	-24.5	-26.7	-28.0	-27.9	-24.2	-17.4	-26.4	-27.2	-25.6	-25.2	-25.8	-23.7	-13.9	-10.2	-27.8	-32.3	-36.6	-41.3	-46.8	-58.6
Back up Alarm 9	Ldn	-3.6	-21.7	-20.9	-26.8	-14.4	-9.3	-12.1	-20.5	-24.4	-26.6	-27.9	-27.8	-24.1	-17.3	-26.3	-27.0	-25.5	-25.1	-25.6	-23.5	-13.8	-10.1	-27.6	-32.1	-36.3	-41.1	-46.4	-58.2
Back up Alarm 10	Ldn	-3.6	-21.7	-20.9	-26.8	-14.4	-9.3	-12.1	-20.4	-24.3	-26.5	-27.8	-27.7	-24.1	-17.2	-26.2	-27.0	-25.4	-25.0	-25.5	-23.5	-13.7	-9.9	-27.5	-31.9	-36.2	-40.9	-46.2	-57.9
Back up Alarm 11	Ldn	-3.5	-21.6	-20.8	-26.7	-14.3	-9.2	-12.0	-20.3	-24.3	-26.4	-27.7	-27.7	-24.0	-17.1	-26.2	-26.9	-25.3	-24.9	-25.4	-23.4	-13.6	-9.8	-27.4	-31.8	-36.0	-40.7	-46.0	-57.6
Back up Alarm 12	Ldn	-3.4	-21.5	-20.7	-26.6	-14.2	-9.2	-12.0	-20.3	-24.2	-26.4	-27.7	-27.6	-23.9	-17.1	-26.1	-26.8	-25.3	-24.8	-25.3	-23.3	-13.5	-9.7	-27.3	-31.7	-35.9	-40.5	-45.8	-57.3
Back up Alarm 13	Ldn	-3.4	-21.5	-20.7	-26.6	-14.2	-9.1	-11.9	-20.2	-24.1	-26.3	-27.6	-27.6	-23.9	-17.0	-26.1	-26.8	-25.2	-24.7	-25.3	-23.2	-13.4	-9.7	-27.2	-31.6	-35.8	-40.4	-45.6	-57.1
Back up Alarm 14	Ldn	-3.3	-21.4	-20.6	-26.5	-14.1	-9.1	-11.9	-20.2	-24.1	-26.3	-27.6	-27.5	-23.8	-17.0	-26.0	-26.7	-25.2	-24.7	-25.2	-23.1	-13.4	-9.6	-27.1	-31.5	-35.7	-40.3	-45.5	-57.0
Back up Alarm 15	Ldn	-3.3	-21.4	-20.6	-26.5	-14.1	-9.0	-11.8	-20.1	-24.1	-26.2	-27.5	-27.5	-23.8	-17.0	-26.0	-26.7	-25.1	-24.6	-25.2	-23.1	-13.3	-9.6	-27.1	-31.5	-35.7	-40.3	-45.4	-56.9
Parking 1	Ldn	16.6					9.2			14.7			2.8			4.5			2.8			0.6			-5.5			-21.2	
Parking 2	Ldn	19.7					12.1			17.8			5.7			7.3			5.7			3.7			-1.8			-16.2	
Parking 3	Ldn	18.3					10.7			16.5			3.9			5.6			4.2			2.5			-2.8			-16.1	
Parking 4	Ldn	22.4					14.6			20.7			7.4			9.1			8.2			6.7			1.2			-11.2	
Parking 5	Ldn	13.8					6.5			11.7			0.4			1.9			-0.2			-0.3			-5.7			-21.7	
Parking 6	Ldn	12.6					5.4			10.4			-0.8			0.7			-1.4			-2.5			-8.6			-27.2	
Parking 7	Ldn	14.1					6.8			12.0			1.0			2.6			0.7			-2.1			-11.0			-31.4	
Parking 8	Ldn	16.5					9.2			14.5			3.3			5.0			3.1			0.4			-8.3			-27.9	
Parking 9	Ldn	17.6					10.4			15.6			4.1			5.8			4.0			1.4			-7.2			-26.0	
Parking 10	Ldn	21.5					13.6			19.7			6.4			8.6			8.9			6.9			-1.1			-20.0	
Parking 11	Ldn	11.0					4.0			8.9			-2.7			-1.1			-2.8			-3.7			-10.2			-29.5	
Parking 12	Ldn	13.5					6.5			11.4			-0.3			1.2			-0.5			-1.2			-7.4			-25.9	
Parking 13	Ldn	11.3					4.3			9.2			-2.6			-1.1			-2.7			-3.5			-9.6			-27.4	
Parking 14	Ldn	13.6					6.7			11.6			-0.9			0.8			-0.4			-1.3			-7.4			-24.7	
Receiver Receiver 2 FI G dB(A) Ldn 31.9 dB(A) Sigma(Ldn) 0.0 dB(A)																													
15 Idling Heavy Diesel Truck	Ldn	1.5	-34.2	-30.4	-27.4	-27.0	-23.3	-19.2	-19.4	-5.6	-16.5	-15.6	-15.8	-13.9	-11.7	-11.2	-11.5	-9.4	-5.5	-10.3	-10.2	-10.8	-13.3	-16.0	-18.8	-22.0	-28.0	-35.9	-45.1
Back up Alarm 1	Ldn	-3.6	-21.7	-20.9	-26.8	-14.4	-9.3	-12.1	-20.5	-24.4	-26.6	-27.8	-27.8	-24.1	-17.3	-26.3	-27.0	-25.5	-24.9	-25.4	-23.4	-13.6	-9.8	-27.4	-31.8	-36.0	-40.7	-46.0	-57.5
Back up Alarm 2	Ldn	-3.5	-21.6	-20.8	-26.7	-14.3	-9.3	-12.1	-20.4	-24.3	-26.5	-27.8	-27.7	-24.1	-17.2	-26.2	-27.0	-25.4	-24.8	-25.3	-23.3	-13.5	-9.7	-27.3	-31.7	-35.9	-40.5	-45.8	-57.3
Back up Alarm 3	Ldn	-3.4	-21.5	-20.8	-26.7	-14.3	-9.2	-12.0	-20.3	-24.3	-26.5	-27.7	-27.7	-24.0	-17.2	-26.2	-26.9	-25.3	-24.7	-25.3	-23.2	-13.4	-9.7	-27.2	-31.6	-35.8	-40.4	-45.6	-57.1

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Back up Alarm 4	Ldn	-3.4	-21.5	-20.7	-26.6	-14.3	-9.2	-12.0	-20.3	-24.2	-26.4	-27.7	-27.6	-24.0	-17.1	-26.2	-26.9	-25.3	-24.7	-25.2	-23.2	-13.4	-9.6	-27.2	-31.6	-35.8	-40.4	-45.5	-57.0
Back up Alarm 5	Ldn	-3.4	-21.5	-20.7	-26.6	-14.2	-9.2	-12.0	-20.3	-24.2	-26.4	-27.7	-27.6	-24.0	-17.1	-26.1	-26.9	-25.3	-24.7	-25.2	-23.2	-13.4	-9.6	-27.1	-31.5	-35.7	-40.3	-45.5	-57.0
Back up Alarm 6	Ldn	-3.4	-21.5	-20.7	-26.6	-14.2	-9.2	-12.0	-20.3	-24.2	-26.4	-27.7	-27.6	-23.9	-17.1	-26.1	-26.9	-25.3	-24.7	-25.2	-23.2	-13.4	-9.6	-27.1	-31.5	-35.7	-40.3	-45.5	-57.0
Back up Alarm 7	Ldn	-3.4	-21.5	-20.7	-26.6	-14.2	-9.1	-11.9	-20.2	-24.2	-26.4	-27.7	-27.6	-23.9	-17.1	-26.1	-26.9	-25.3	-24.7	-25.2	-23.2	-13.4	-9.6	-27.2	-31.6	-35.8	-40.4	-45.6	-57.0
Back up Alarm 8	Ldn	-3.4	-21.4	-20.6	-26.6	-14.2	-9.1	-11.9	-20.2	-24.2	-26.4	-27.7	-27.6	-24.0	-17.1	-26.1	-26.9	-25.3	-24.7	-25.3	-23.2	-13.4	-9.7	-27.2	-31.6	-35.8	-40.5	-45.7	-57.2
Back up Alarm 9	Ldn	-3.5	-21.5	-20.7	-26.7	-14.3	-9.2	-12.0	-20.3	-24.2	-26.4	-27.7	-27.7	-24.0	-17.1	-26.2	-26.9	-25.3	-24.8	-25.4	-23.3	-13.5	-9.8	-27.3	-31.7	-36.0	-40.6	-45.8	-57.4
Back up Alarm 10	Ldn	-3.5	-21.6	-20.8	-26.7	-14.3	-9.2	-12.0	-20.4	-24.3	-26.5	-27.8	-27.7	-24.0	-17.2	-26.2	-26.9	-25.4	-24.9	-25.4	-23.4	-13.6	-9.9	-27.4	-31.8	-36.1	-40.7	-46.0	-57.6
Back up Alarm 11	Ldn	-3.6	-21.6	-20.8	-26.8	-14.4	-9.3	-12.1	-20.4	-24.3	-26.5	-27.8	-27.8	-24.1	-17.2	-26.3	-27.0	-25.4	-25.0	-25.5	-23.5	-13.7	-10.0	-27.5	-31.9	-36.2	-40.9	-46.2	-57.9
Back up Alarm 12	Ldn	-3.7	-21.7	-20.9	-26.8	-14.4	-9.4	-12.1	-20.5	-24.4	-26.6	-27.9	-27.8	-24.1	-17.3	-26.3	-27.1	-25.5	-25.1	-25.7	-23.6	-13.8	-10.1	-27.6	-32.1	-36.4	-41.1	-46.5	-58.3
Back up Alarm 13	Ldn	-3.8	-21.8	-21.0	-26.9	-14.5	-9.4	-12.2	-20.6	-24.5	-26.7	-27.9	-27.9	-24.2	-17.4	-26.4	-27.1	-25.6	-25.3	-25.8	-23.7	-13.9	-10.2	-27.8	-32.3	-36.6	-41.4	-46.8	-58.6
Back up Alarm 14	Ldn	-3.9	-21.9	-21.1	-27.0	-14.6	-9.5	-12.3	-20.7	-24.6	-26.7	-28.0	-28.0	-24.3	-17.4	-26.5	-27.2	-25.6	-25.4	-26.0	-23.9	-14.1	-10.4	-28.0	-32.5	-36.8	-41.7	-47.2	-59.1
Back up Alarm 15	Ldn	-4.0	-22.0	-21.2	-27.1	-14.7	-9.6	-12.3	-20.8	-24.7	-26.8	-28.1	-28.0	-24.4	-17.5	-26.5	-27.3	-25.7	-25.6	-26.1	-24.0	-14.3	-10.6	-28.2	-32.7	-37.1	-41.9	-47.5	-59.6
Parking 1	Ldn	12.7					5.5			10.6			-1.0			0.6			-1.2			-2.4			-8.5			-26.3	
Parking 2	Ldn	15.2					8.0			13.2			1.4			3.0			1.2			0.3			-5.5			-22.2	
Parking 3	Ldn	13.1					5.9			11.1			-0.9			0.7			-0.9			-1.7			-7.4			-23.3	
Parking 4	Ldn	15.7					8.5			13.7			1.1			2.8			1.5			0.7			-5.0			-20.2	
Parking 5	Ldn	13.0					5.8			10.9			-0.3			1.2			-1.0			-1.6			-7.4			-24.8	
Parking 6	Ldn	13.5					6.2			11.3			0.1			1.5			-0.6			-0.8			-6.4			-23.0	
Parking 7	Ldn	16.6					9.1			14.7			3.4			5.0			3.1			0.6			-7.8			-25.2	
Parking 8	Ldn	19.5					11.9			17.6			6.0			7.7			5.8			3.3			-4.6			-21.0	
Parking 9	Ldn	21.3					13.7			19.5			7.4			9.0			7.5			5.0			-2.6			-18.1	
Parking 10	Ldn	29.7					18.4			26.5			13.1			17.9			21.5			21.8			16.8			3.0	
Parking 11	Ldn	14.0					6.7			12.0			0.3			1.9			0.1			-1.3			-7.1			-23.7	
Parking 12	Ldn	16.8					9.5			14.9			3.0			4.6			2.8			1.7			-3.8			-19.3	
Parking 13	Ldn	15.0					7.7			13.1			1.0			2.6			0.9			-0.1			-5.5			-20.0	
Parking 14	Ldn	18.1					10.6			16.2			3.4			5.1			3.8			2.8			-2.6			-16.4	
Receiver Receiver 3 FI G dB(A) Ldn 45.6 dB(A) Sigma(Ldn) 0.0 dB(A)																													
15 Idling Heavy Diesel Truck	Ldn	35.6	-17.6	-12.8	-8.1	-6.0	-1.0	4.8	6.7	21.7	12.0	10.4	11.4	14.5	19.3	20.8	21.4	26.3	30.4	25.8	25.7	25.4	23.1	20.8	18.5	16.2	11.6	5.8	-0.3
Back up Alarm 1	Ldn	26.6	-9.0	-7.2	-12.0	1.6	7.9	6.3	0.1	-0.8	-0.5	-4.9	-3.8	0.8	7.9	-0.1	0.2	8.0	8.6	8.2	10.6	20.5	24.4	7.2	3.2	-0.4	-4.0	-7.7	-17.0
Back up Alarm 2	Ldn	26.9	-8.3	-6.5	-11.3	2.3	8.6	7.0	0.8	-2.0	-1.2	-5.0	-3.5	1.2	8.3	0.3	0.6	8.3	8.9	8.4	10.8	20.8	24.7	7.5	3.5	0.0	-3.6	-7.2	-16.3
Back up Alarm 3	Ldn	27.2	-7.7	-5.9	-10.7	2.9	9.2	7.6	1.4	-1.4	-0.6	-5.1	-3.4	1.7	8.8	0.8	1.1	8.6	9.3	8.8	11.1	21.1	25.0	7.8	3.8	0.4	-3.1	-6.6	-15.5
Back up Alarm 4	Ldn	27.6	-6.9	-5.1	-9.9	3.7	10.0	8.4	2.2	-0.6	0.1	-4.2	-3.1	2.0	9.5	1.5	1.8	9.1	9.7	9.2	11.5	21.5	25.4	8.2	4.3	0.9	-2.5	-5.8	-14.4
Back up Alarm 5	Ldn	28.0	-6.3	-4.5	-9.3	4.3	10.6	9.0	2.8	1.7	0.6	-3.5	-2.4	2.3	10.1	2.1	2.4	9.5	10.1	9.7	11.9	21.8	25.8	8.6	4.8	1.4	-1.9	-5.0	-13.5
Back up Alarm 6	Ldn	28.6	-5.5	-3.7	-8.5	5.1	11.4	9.8	3.6	2.5	1.3	-2.5	-1.4	3.3	10.8	2.9	3.2	10.1	10.7	10.3	12.4	22.4	26.4	9.2	5.4	2.1	-1.1	-4.1	-12.3
Back up Alarm 7	Ldn	28.8	-4.9	-3.1	-7.9	5.7	12.0	10.4	4.3	3.0	1.9	-1.7	-0.6	4.0	11.4	3.5	3.7	10.3	11.0	10.5	12.5	22.5	26.5	9.4	5.7	2.5	-0.6	-3.4	-11.4
Back up Alarm 8	Ldn	29.2	-4.4	-2.6	-7.4	6.2	12.5	10.9	4.8	3.4	2.3	-1.2	-0.1	4.6	12.0	4.0	4.3	10.7	11.4	10.9	12.9	22.9	26.9	9.8	6.1	2.9	0.0	-2.8	-10.7

Nance Warehouse Perris Noise
Contribution spectra - 001 - CNEL: Outdoor SP

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Back up Alarm 9	Ldn	29.8	-4.1	-2.3	-7.1	6.5	12.8	11.2	5.1	3.8	2.7	-0.7	0.4	5.1	12.6	4.7	5.0	11.3	12.0	11.6	13.5	23.5	27.5	10.4	6.7	3.5	0.6	-2.2	-10.0
Back up Alarm 10	Ldn	29.9	-3.9	-2.1	-6.9	6.7	13.0	11.4	5.3	3.9	2.8	-0.5	0.6	5.3	12.8	4.8	5.1	11.5	12.1	11.7	13.7	23.6	27.7	10.6	6.9	3.7	0.7	-2.0	-9.8
Back up Alarm 11	Ldn	29.9	-3.9	-2.1	-6.9	6.7	13.0	11.4	5.3	3.9	2.8	-0.5	0.5	5.2	12.8	4.8	5.1	11.5	12.1	11.7	13.7	23.6	27.7	10.6	6.9	3.7	0.7	-2.0	-9.8
Back up Alarm 12	Ldn	29.8	-4.2	-2.4	-7.2	6.4	12.7	11.1	5.0	3.7	2.6	-0.8	0.3	5.2	12.6	4.6	4.9	11.3	12.0	11.5	13.5	23.5	27.5	10.4	6.7	3.5	0.5	-2.2	-10.1
Back up Alarm 13	Ldn	30.2	-4.5	-2.7	-7.5	6.1	12.4	10.8	4.7	3.3	2.2	-1.3	0.5	5.5	12.8	4.7	5.1	11.7	12.4	11.9	14.0	24.0	28.0	10.9	7.1	3.9	0.8	-2.1	-10.2
Back up Alarm 14	Ldn	29.9	-5.1	-3.3	-8.1	5.5	11.8	10.2	4.1	2.8	1.7	-1.0	0.4	5.1	12.4	4.4	4.7	11.4	12.1	11.6	13.7	23.7	27.7	10.6	6.8	3.6	0.4	-2.5	-10.7
Back up Alarm 15	Ldn	29.7	-5.7	-3.9	-8.7	4.9	11.2	9.6	3.5	3.7	3.2	-0.9	0.2	4.9	12.1	4.1	4.4	11.2	11.9	11.4	13.6	23.5	27.5	10.4	6.6	3.4	0.2	-2.8	-11.1
Parking 1	Ldn	28.2					16.9			24.9			11.4			16.5			19.9			20.3			15.9			3.8	
Parking 2	Ldn	19.8					12.3			17.9			5.4			7.0			5.6			5.0			-0.1			-13.2	
Parking 3	Ldn	15.3					7.8			13.3			1.4			2.9			1.2			0.5			-4.6			-18.5	
Parking 4	Ldn	15.5					8.1			13.5			1.7			3.3			2.1			1.3			-4.2			-19.3	
Parking 5	Ldn	41.4					26.6			35.8			25.5			31.4			34.6			35.3			31.5			21.4	
Parking 6	Ldn	36.7					22.9			32.0			19.5			25.8			29.6			30.4			26.0			14.1	
Parking 7	Ldn	28.2					16.6			24.6			10.6			16.1			20.3			21.2			15.6			0.2	
Parking 8	Ldn	21.3					13.0			18.6			6.4			8.1			6.6			14.0			3.9			-19.4	
Parking 9	Ldn	20.1					11.7			17.2			5.7			7.3			5.3			13.3			2.7			-21.6	
Parking 10	Ldn	19.2					10.9			16.4			5.1			6.8			4.8			12.0			1.0			-23.8	
Parking 11	Ldn	25.3					14.2			21.9			7.8			12.9			16.7			18.4			12.6			-1.9	
Parking 12	Ldn	18.1					10.3			15.6			3.1			4.7			3.3			9.5			0.7			-17.5	
Parking 13	Ldn	13.7					6.6			11.7			-0.4			1.1			-0.7			-0.7			-6.7			-22.2	
Parking 14	Ldn	13.9					6.8			11.8			0.0			1.5			-0.3			-0.2			-6.5			-22.7	

Nance Warehouse Perris Noise
Octave spectra of the sources in dB(A) - 001 - Lmax: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
15 Idling Heavy Diesel Truck	Area	374.91			65.0	90.7	0.0	0.0	91.8	0	Back up Alarm	Idiling Heavy Diesel Truck	59.9	77.6	76.4	82.8	87.3	84.0	79.0	71.0	58.9
Back up Alarm 1	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 2	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 3	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 4	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 5	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 6	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 7	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 8	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 9	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 10	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 11	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 12	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 13	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 14	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Back up Alarm 15	Point				103.0	103.0	0.0	0.0	103.0	0	Back up Alarm	Truck: backout alerter Lmax	70.0	80.0	87.1	93.1	96.0	97.0	97.1	95.0	
Parking 1	PLot	66.14			54.8	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8

Nance Warehouse Perris Noise
Octave spectra of the sources in dB(A) - 001 - Lmax: Outdoor SP

Name	Source type	l or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Parking 2	PLot	94.09			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 3	PLot	50.56			54.7	71.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	55.1	66.7	59.2	63.7	63.8	64.2	61.5	55.3	42.5
Parking 4	PLot	100.18			53.0	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8
Parking 5	PLot	80.29			54.9	74.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	57.3	68.9	61.4	65.9	66.0	66.4	63.7	57.5	44.7
Parking 6	PLot	76.29			55.2	74.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	57.3	68.9	61.4	65.9	66.0	66.4	63.7	57.5	44.7
Parking 7	PLot	68.43			54.7	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8
Parking 8	PLot	94.09			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 9	PLot	94.82			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 10	PLot	96.15			55.0	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 11	PLot	64.19			54.9	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8
Parking 12	PLot	89.07			55.3	74.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	58.1	69.7	62.2	66.7	66.8	67.2	64.5	58.3	45.5
Parking 13	PLot	50.20			54.8	71.8	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	55.1	66.7	59.2	63.7	63.8	64.2	61.5	55.3	42.5
Parking 14	PLot	105.91			52.8	73.0	0.0	0.0	98.5	0	Convenience Store	Typical spectrum	56.4	68.0	60.5	65.0	65.1	65.5	62.8	56.6	43.8

Nance Warehouse Perris Noise
Contribution level - 001 - Lmax: Outdoor SP

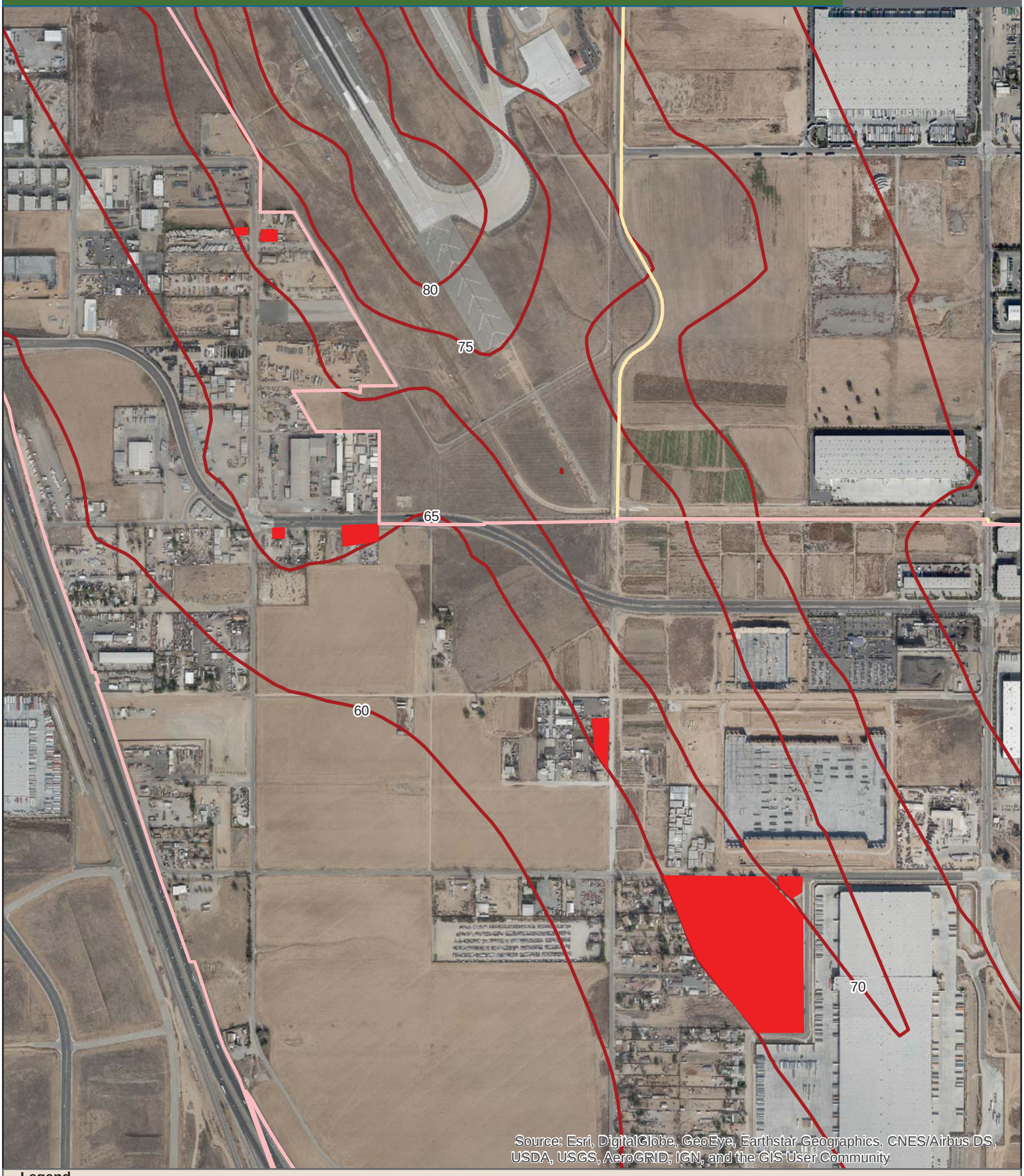
Source	Source group	Source ty	Tr. lane	Lmax dB(A)	A dB	
Receiver Receiver 1 Fl G Lmax,lim dB(A) Lmax 44.2 dB(A)						
15 Idling Heavy Diesel Truck	Default industrial noise	Area		17.5	0.0	
Parking 1	Default parking lot noise	PLot		32.4	0.0	
Parking 2	Default parking lot noise	PLot		34.0	0.0	
Parking 3	Default parking lot noise	PLot		35.5	0.0	
Parking 4	Default parking lot noise	PLot		39.5	0.0	
Parking 5	Default parking lot noise	PLot		28.8	0.0	
Parking 6	Default parking lot noise	PLot		27.5	0.0	
Parking 7	Default parking lot noise	PLot		29.8	0.0	
Parking 8	Default parking lot noise	PLot		30.6	0.0	
Parking 9	Default parking lot noise	PLot		31.8	0.0	
Parking 10	Default parking lot noise	PLot		44.2	0.0	
Parking 11	Default parking lot noise	PLot		27.2	0.0	
Parking 12	Default parking lot noise	PLot		28.0	0.0	
Parking 13	Default parking lot noise	PLot		28.6	0.0	
Parking 14	Default parking lot noise	PLot		30.2	0.0	
Back up Alarm 1	Default industrial noise	Point		25.4	0.0	
Back up Alarm 2	Default industrial noise	Point		25.6	0.0	
Back up Alarm 3	Default industrial noise	Point		25.8	0.0	
Back up Alarm 4	Default industrial noise	Point		26.0	0.0	
Back up Alarm 5	Default industrial noise	Point		26.2	0.0	
Back up Alarm 6	Default industrial noise	Point		26.4	0.0	
Back up Alarm 7	Default industrial noise	Point		26.6	0.0	
Back up Alarm 8	Default industrial noise	Point		26.7	0.0	
Back up Alarm 9	Default industrial noise	Point		26.8	0.0	
Back up Alarm 10	Default industrial noise	Point		26.9	0.0	
Back up Alarm 11	Default industrial noise	Point		27.0	0.0	
Back up Alarm 12	Default industrial noise	Point		27.1	0.0	
Back up Alarm 13	Default industrial noise	Point		27.2	0.0	
Back up Alarm 14	Default industrial noise	Point		27.2	0.0	
Back up Alarm 15	Default industrial noise	Point		27.3	0.0	
Receiver Receiver 2 Fl G Lmax,lim dB(A) Lmax 48.2 dB(A)						
15 Idling Heavy Diesel Truck	Default industrial noise	Area		17.8	0.0	
Parking 1	Default parking lot noise	PLot		28.8	0.0	
Parking 2	Default parking lot noise	PLot		29.8	0.0	
Parking 3	Default parking lot noise	PLot		30.4	0.0	
Parking 4	Default parking lot noise	PLot		32.3	0.0	
Parking 5	Default parking lot noise	PLot		28.1	0.0	
Parking 6	Default parking lot noise	PLot		28.6	0.0	
Parking 7	Default parking lot noise	PLot		32.5	0.0	
Parking 8	Default parking lot noise	PLot		33.8	0.0	
Parking 9	Default parking lot noise	PLot		35.9	0.0	
Parking 10	Default parking lot noise	PLot		48.2	0.0	
Parking 11	Default parking lot noise	PLot		30.1	0.0	

Source	Source group	Source ty	Tr. lane	Lmax dB(A)	A dB	
Parking 12	Default parking lot noise	PLot		31.3	0.0	
Parking 13	Default parking lot noise	PLot		32.2	0.0	
Parking 14	Default parking lot noise	PLot		35.0	0.0	
Back up Alarm 1	Default industrial noise	Point		27.0	0.0	
Back up Alarm 2	Default industrial noise	Point		27.1	0.0	
Back up Alarm 3	Default industrial noise	Point		27.1	0.0	
Back up Alarm 4	Default industrial noise	Point		27.2	0.0	
Back up Alarm 5	Default industrial noise	Point		27.2	0.0	
Back up Alarm 6	Default industrial noise	Point		27.2	0.0	
Back up Alarm 7	Default industrial noise	Point		27.2	0.0	
Back up Alarm 8	Default industrial noise	Point		27.2	0.0	
Back up Alarm 9	Default industrial noise	Point		27.1	0.0	
Back up Alarm 10	Default industrial noise	Point		27.0	0.0	
Back up Alarm 11	Default industrial noise	Point		26.9	0.0	
Back up Alarm 12	Default industrial noise	Point		26.8	0.0	
Back up Alarm 13	Default industrial noise	Point		26.7	0.0	
Back up Alarm 14	Default industrial noise	Point		26.5	0.0	
Back up Alarm 15	Default industrial noise	Point		26.4	0.0	

Appendix D:
MARB Noise Contours

March ARB 2018 Noise Contours and Land Use Compatibility

Figure 6-10



Legend

- City of Perris
- City of Moreno Valley
- Not Compatible with Exceptions (refer to Section 6.4.2)

March ARB 2018 Noise Contours

- Noise Contour Levels (CNEL) 60dB, 65dB, 70dB, 75dB, 80dB

N

0 0.255 Miles

1 inch = 0.18 miles

Appendix E:

Construction Input

Activity	L_{eq} at 45 feet dBA	L_{Max} at 45 feet dBA
Grading	89	90
Building Construction	87	89
Paving	88	91

Equipment Summary	Reference (dBA) 50 ft Lmax
Rock Drills	96
Jack Hammers	82
Pneumatic Tools	85
Pavers	80
Dozers	85
Scrappers	87
Haul Trucks	88
Cranes	82
Portable Generators	80
Rollers	80
Tractors	80
Front-End Loaders	86
Hydraulic Excavators	86
Graders	86
Air Compressors	86
Trucks	86

Grading

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Leq	Energy
1	Grader	86	1	40	45	0.5	0	87.1	83.2	207230520
2	Dozer	85	1	40	45	0.5	0	86.1	82.2	164609053
3	Excavator	86	1	40	45	0.5	0	87.1	83.2	207230520
4	Tractor/Backhoe	80	3	40	45	0.5	0	85.9	81.9	156161860
							Lmax*	**90**	**Leq**	**89**
							Lw	**121**	**Lw**	**120**

Source: MD Acoustics, November 2020.

1- Percentage of time that a piece of equipment is operating at full power.

dBA – A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	**15.2**	**0.5**	**89**	**88**	**87**	**86**	**85**	**84**	**83**	**82**	**81**	**80**	**79**	**78**	**77**	**76**	**75**	**74**
60	18.3	0.5	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72
70	21.3	0.5	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70
80	24.4	0.5	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69
90	27.4	0.5	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67
100	30.5	0.5	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66
110	33.5	0.5	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
120	36.6	0.5	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
130	39.6	0.5	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63
140	42.7	0.5	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62
150	45.7	0.5	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62
160	48.8	0.5	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
170	51.8	0.5	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
180	54.9	0.5	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
190	57.9	0.5	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59
200	61.0	0.5	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59
210	64.0	0.5	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
220	67.1	0.5	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
230	70.1	0.5	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57
240	73.1	0.5	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57
250	76.2	0.5	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
260	79.2	0.5	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
270	82.3	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
280	85.3	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
290	88.4	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
300	91.4	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
310	94.5	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
320	97.5	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
330	100.6	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
340	103.6	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
350	106.7	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
360	109.7	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
370	112.8	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52

Building Construction

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
								Calculated (dBA)		
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Lmax	Leq	Energy
1	Cranes	82	1	40	45	0.5	0	83.1	79.2	82499956.2
2	Forklift/Tractor	80	4	40	45	0.5	0	87.2	83.2	208215813
3	Generator	80	1	40	45	0.5	0	81.1	77.2	52053953.3
4	Tractor/Backhoe	80	4	40	45	0.5	0	87.2	83.2	208215813
							Lmax*	**89**	**Leq**	**87**
							Lw	**120**	**Lw**	**119**

Source: MD Acoustics, July 2018.

1- Percentage of time that a piece of equipment is operating at full power.

dBA – A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	**15.2**	**0.5**	**87**	**86**	**85**	**84**	**83**	**82**	**81**	**80**	**79**	**78**	**77**	**76**	**75**	**74**	**73**	**72**
60	18.3	0.5	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70
70	21.3	0.5	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69
80	24.4	0.5	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67
90	27.4	0.5	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66
100	30.5	0.5	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
110	33.5	0.5	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
120	36.6	0.5	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63
130	39.6	0.5	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62
140	42.7	0.5	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
150	45.7	0.5	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
160	48.8	0.5	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
170	51.8	0.5	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59
180	54.9	0.5	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59
190	57.9	0.5	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
200	61.0	0.5	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57
210	64.0	0.5	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57
220	67.1	0.5	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
230	70.1	0.5	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
240	73.1	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
250	76.2	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
260	79.2	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
270	82.3	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
280	85.3	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
290	88.4	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
300	91.4	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
310	94.5	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
320	97.5	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
330	100.6	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
340	103.6	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
350	106.7	0.5	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51
360	109.7	0.5	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51
370	112.8	0.5	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51

Paving

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
No.	Equipment Description	Reference (dBA) 50 ft Lmax	Quantity	Usage Factor[1]	Distance to Receptor (ft)	Ground Effect	Shielding (dBA)	Calculated (dBA) Lmax	Calculated (dBA) Leq	Energy
1	Pavers	86	2	40	45	0.5	0	90.2	86.2	414461041
2	Rollers	80	2	40	45	0.5	0	84.2	80.2	104107907
3	Paving Equipment	80	2	40	45	0.5	0	84.2	80.2	104107907
							Lmax*	**91**	**Leq**	**88**
							Lw	**123**	**Lw**	**120**

Source: MD Acoustics, July 2018.

1- Percentage of time that a piece of equipment is operating at full power.

dBA – A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level

Feet	Meters	Ground Effect	No Shielding Leq dBA	1 dBA Shielding Leq dBA	2 dBA Shielding Leq dBA	3 dBA Shielding Leq dBA	4 dBA Shielding Leq dBA	5 dBA Shielding Leq dBA	6 dBA Shielding Leq dBA	7 dBA Shielding Leq dBA	8 dBA Shielding Leq dBA	9 dBA Shielding Leq dBA	10 dBA Shielding Leq dBA	11 dBA Shielding LeqdBA	12 dBA Shielding Leq dBA	13 dBA Shielding Leq dBA	14 dBA Shielding Leq dBA	15 dBA Shielding Leq dBA
50	**15.2**	**0.5**	**88**	**87**	**86**	**85**	**84**	**83**	**82**	**81**	**80**	**79**	**78**	**77**	**76**	**75**	**74**	**73**
60	18.3	0.5	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71
70	21.3	0.5	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69
80	24.4	0.5	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68
90	27.4	0.5	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67
100	30.5	0.5	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
110	33.5	0.5	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64
120	36.6	0.5	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63
130	39.6	0.5	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63
140	42.7	0.5	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62
150	45.7	0.5	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
160	48.8	0.5	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
170	51.8	0.5	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
180	54.9	0.5	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59
190	57.9	0.5	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
200	61.0	0.5	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58
210	64.0	0.5	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57
220	67.1	0.5	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57
230	70.1	0.5	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
240	73.1	0.5	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56
250	76.2	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
260	79.2	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
270	82.3	0.5	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55
280	85.3	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
290	88.4	0.5	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
300	91.4	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
310	94.5	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
320	97.5	0.5	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53
330	100.6	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
340	103.6	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
350	106.7	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
360	109.7	0.5	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52
370	112.8	0.5	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51

VIBRATION LEVEL IMPACT

Project:	Nance Warehouse	Date: 10/5/21
Source:	Large Bulldozer	
Scenario:	Unmitigated	
Location:	Project Site	
Address:		

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

DATA INPUT

Equipment = Type	2	Large Bulldozer	INPUT SECTION IN BLUE
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	87.00	Distance from Equipment to Receiver (ft)	
n =	1.10	Vibration attenuation rate through the ground	

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

DATA OUT RESULTS

PPV =	**0.023**	IN/SEC	OUTPUT IN RED