Industrial Outdoor Ventures

NOISE AND VIBRATION ANALYSIS

CITY OF JURUPA VALLEY

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum level measured over the time interval
L_{min}	Minimum level measured over the time interval
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Industrial Outdoor Ventures
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed Industrial Outdoor Ventures development ("Project"). The Project site is located north of Riverside Drive and west of Wineville Avenue in the City of Jurupa Valley. The Project is proposed to consist of the development of a 25,000 square foot general light industrial building with 5,616 square feet of retail/office space (total of 30,616 square feet) on a 6.88-acre site (or 299,718 square feet).

This study has been prepared to satisfy applicable City of Jurupa Valley standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) The results of this Industrial Outdoor Ventures Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1). Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	7	*Less Than Significant*	-
Operational Noise	9	*Less Than Significant*	-
Construction Noise	10	*Less Than Significant*	-
Construction Vibration		*Less Than Significant*	-

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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Industrial Outdoor Ventures ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term stationary-source operational noise and short-term construction noise impacts.

1.1 SITE LOCATION

The proposed Industrial Outdoor Ventures site is located north of Riverside Drive and west of Wineville Avenue the City of Jurupa Valley, as shown on Exhibit 1-A. The Project site is current vacant and undeveloped. Existing land uses near the site consist mostly of nearby industrial land uses with the nearest noise sensitive residential land uses located to the west and southeast of the Project site.

1.2 PROJECT DESCRIPTION

It is our understanding that the Project is to consist of the development of a 25,000 square foot general light industrial building with 5,616 square feet of retail/office space (total of 30,616 square feet) on a 6.88-acre site (or 299,718 square feet). There is also a large portion of the site that is identified for uncovered outdoor sales area that could be converted to accommodate additional parking spaces. Assuming that the site could be developed with a floor-to-area-ratio (FAR) of 25% (or 0.25), the proposed Project is assumed to consist of up to 74,930 square feet of general light industrial use and 5,616 square feet of retail/office space. The square footage of the general light industrial use has been determined assuming an FAR of 0.25 on the site area of 299,718 square feet. The preliminary site plan for the proposed Project is shown on Exhibit 1-B. It is anticipated that the Project will be operational by Year 2024.

The on-site Project-related noise sources are expected to include: outdoor sales/loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hours daily for seven days per week.

EXHIBIT 1-A: LOCATION MAP

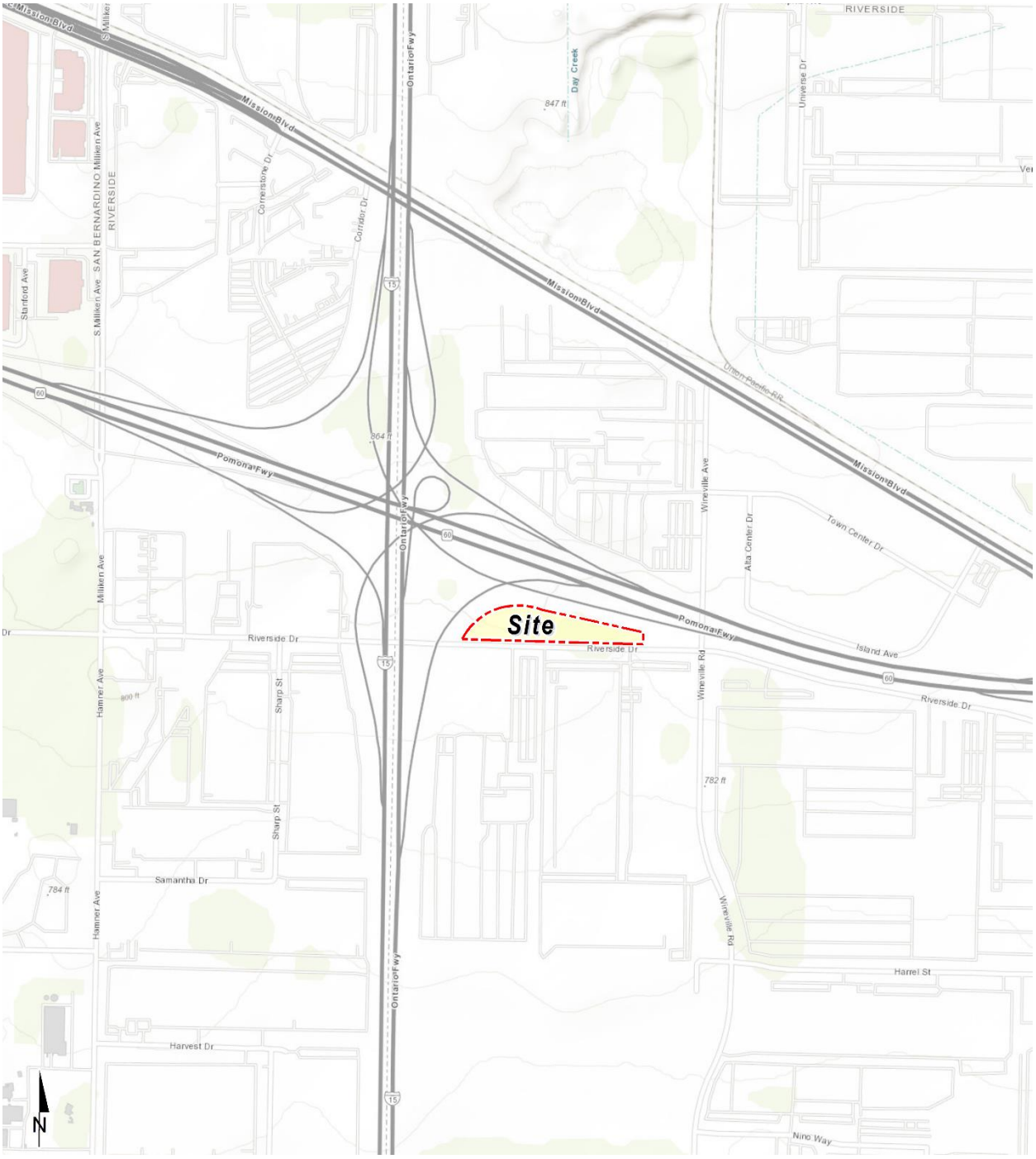
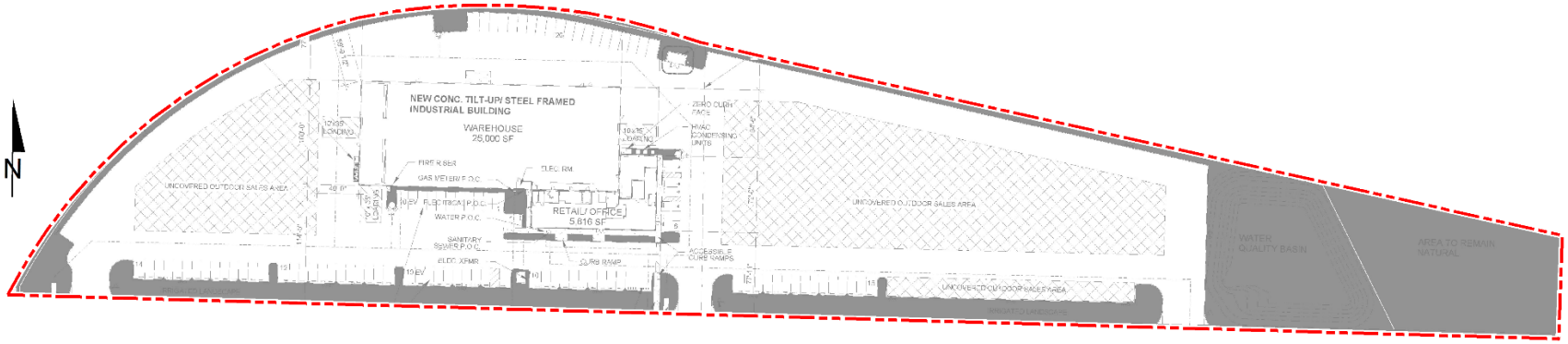


EXHIBIT 1-B: SITE PLAN



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2 FUNDAMENTALS

Noise is simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140	INTOLERABLE OR DEAFENING	HEARING LOSS
NEAR JET ENGINE		130		
		120		
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100	VERY NOISY	
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		SPEECH INTERFERENCE
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP DISTURBANCE
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

Source: Environmental Protection Agency Office of Noise Abatement and Control, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004) March 1974.

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (2) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA

at approximately 1,000 feet, which can cause serious discomfort. (3) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most used metric is the equivalent level (L_{eq}). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period and is commonly used to describe the "average" noise levels within the environment.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when noise can become more intrusive. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Jurupa Valley relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The way noise reduces with distance depends on the following factors.

2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. (2)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually

sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (4)

2.3.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (2)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of-sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The Federal Highway Administration (FHWA) does not consider the planting of vegetation to be a noise abatement measure. (5)

2.4 NOISE CONTROL

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to these three elements.

2.5 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must block the line-of-sight path of sound from the noise source.

2.6 LAND USE COMPATIBILITY WITH NOISE

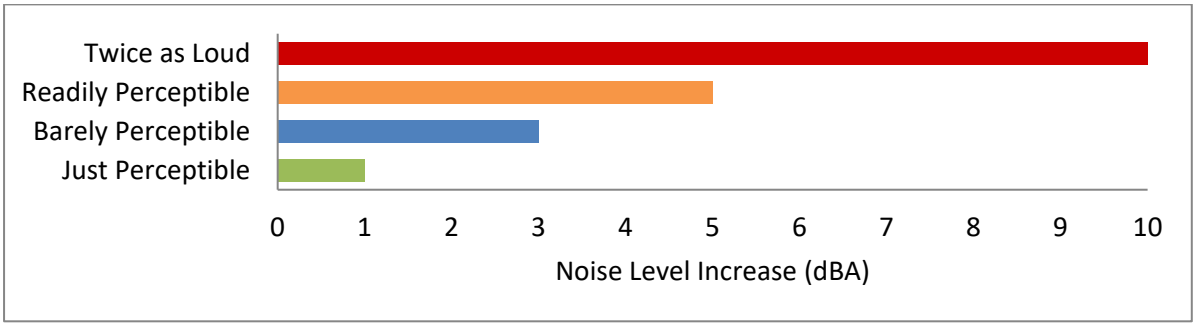
Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (6)

2.7 COMMUNITY RESPONSE TO NOISE

Approximately sixteen percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints may occur. Twenty to thirty percent of the population will not complain even in very severe noise environments. (7 pp. 8-6) Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Surveys have shown that community response to noise varies from no reaction to vigorous action for newly introduced noises averaging from 10 dB below existing to 25 dB above existing. (8) According to research originally published in the Noise Effects Handbook (7), the percentage of high annoyance ranges from approximately 0 percent at 45 dB or less, 10 percent are highly annoyed around 60 dB, and increases rapidly to approximately 70 percent being highly annoyed at approximately 85 dB or greater. Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA is considered barely perceptible, and changes of 5 dBA are considered readily perceptible. (4)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



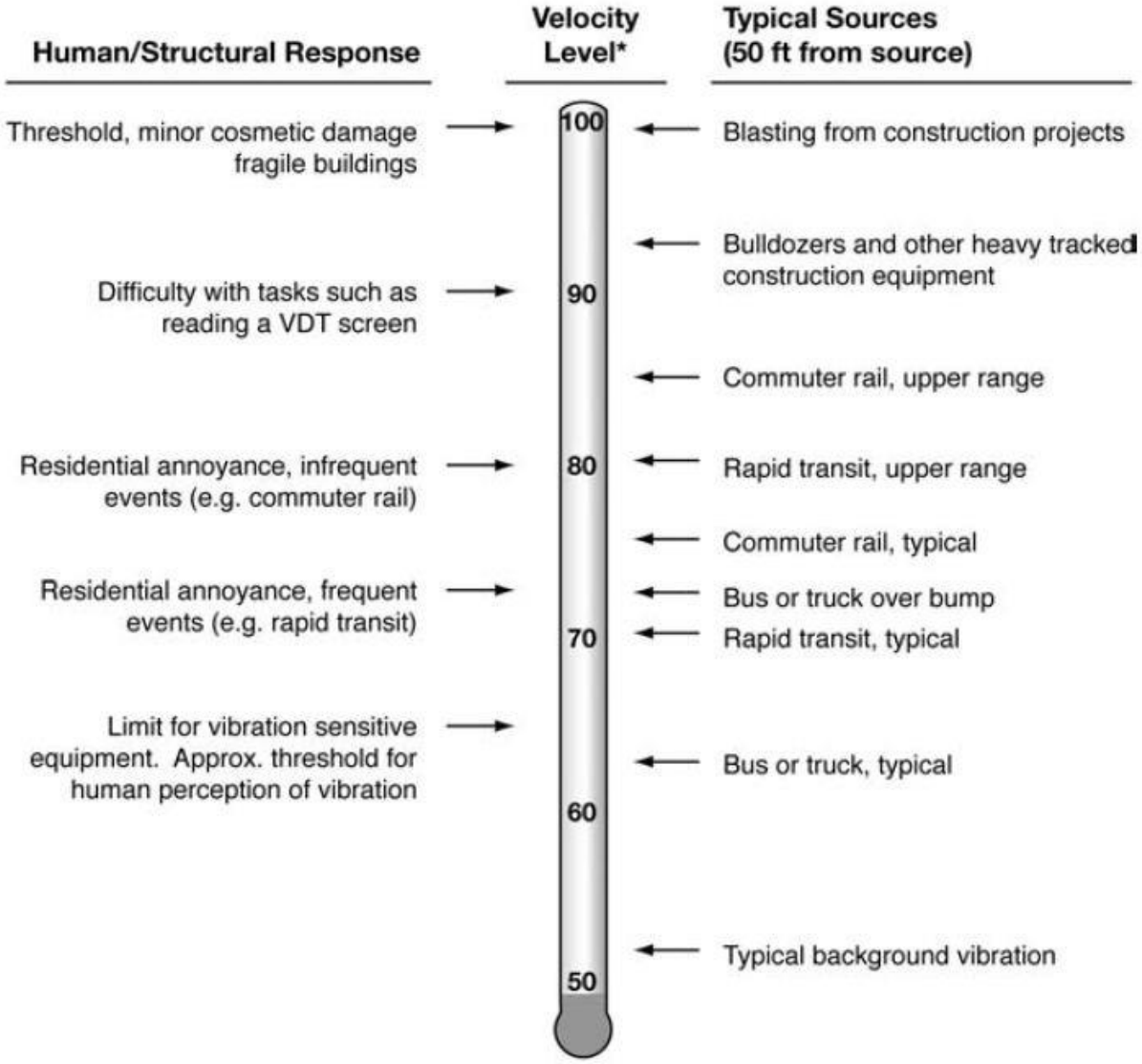
2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Impact Assessment Manual* , vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Decibel notation (VdB) serves to reduce the range of numbers used to describe human response to vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receivers for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment and/or activities.

The background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-C illustrates common vibration sources and the human and structural response to ground-borne vibration.

EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION



** RMS Vibration Velocity Level in VdB relative to 10^{-6} inches/second*

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

3 REGULATORY SETTING

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies.

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (9) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 CITY OF JURUPA VALLEY GENERAL PLAN

The City of Jurupa Valley adopted the General Plan on September 7, 2017 (10) The Noise Element identifies several polices to minimize the impacts of excessive noise levels throughout the community and establishes noise level compatibility guidelines for all land uses.

3.2.1 POLICIES AND PROGRAMS

To protect City of Jurupa Valley residents from excessive noise, the Noise Element contains the following policies and programs related to the Project:

NE 1.1 Utilize the Land Use/Noise Compatibility Matrix, Figure 7-3, to determine the compatibility of proposed development, including General Plan amendments, specific plan amendments, town center plans, and rezoning's, with existing land uses and/or noise exposure due to transportation sources.

NE 1.3 New or Modified Stationary Noise Sources. Noise created by new stationary noise sources, or by existing stationary noise sources that undergo modifications that may increase noise levels, shall be mitigated so as not exceed the noise level standards of Figure 7-3. This policy does not apply to noise levels associated with agricultural operations existing in 2017.

NE 1.4 Acoustical Assessment. Require an acoustical assessment for proposed General Plan amendments and rezones that exceed the "Normally Acceptable" thresholds of the Land Use/Noise Compatibility Matrix.

NE 1.5 Noise-Sensitive Uses. Consider the following uses noise sensitive and discourage these uses in areas in excess of 65 CNEL: schools, hospitals, assisted living facilities, mental care facilities, residential uses, libraries, passive recreational uses, and places of worship.

NE 3.1 Noise Analysis. Require that a noise analysis be conducted by an acoustical specialist for all proposed development projects that have the potential to generate significant noise near a noise-sensitive land use, or on or near land designated for noise-sensitive land uses, and ensure that recommended mitigation measures are implemented.

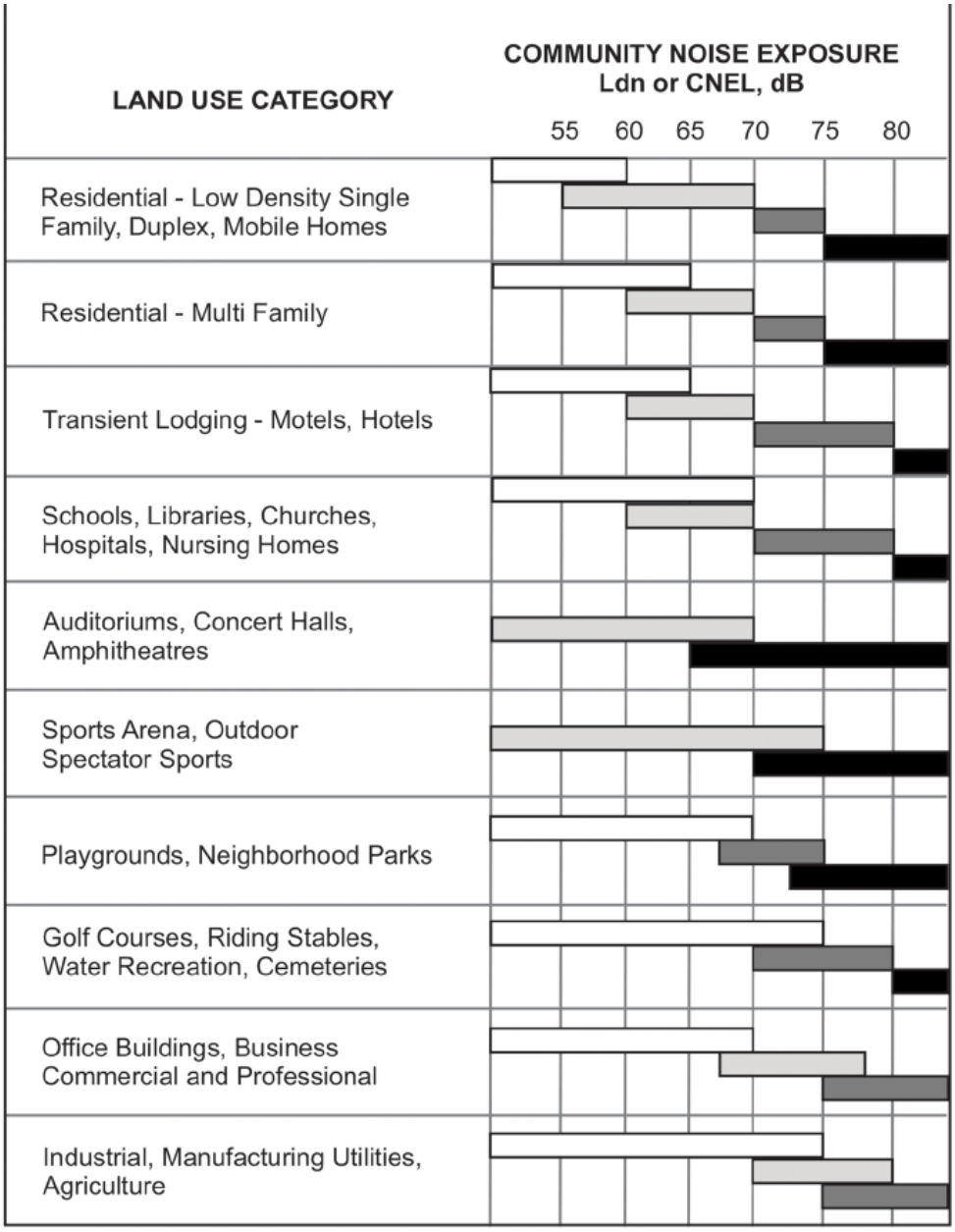
NE 3.5 Construction Noise. Limit commercial construction activities adjacent to or within 200 feet of residential uses to weekdays, between 7:00 a.m. and 6:00 p.m., and limit high-noise-generating construction activities (e.g., grading, demolition, pile driving) near sensitive receptors to weekdays between 9:00 a.m. and 3:00 p.m.

To ensure noise-sensitive land uses are protected from high levels of noise (NE 1.1), Figure 7-3 of the Noise Element identifies guidelines to evaluate proposed developments based on exterior and interior noise level limits for land uses and requires a noise analysis to determine needed mitigation measures if necessary. The Noise Element requires an acoustical assessment for proposed General Plan amendments and rezones that exceed the "Normally Acceptable" thresholds of the Land Use/Noise Compatibility Matrix (NE 1.4) and identifies residential use as a noise-sensitive land use (NE 1.5) discouraging new development in areas with transportation related levels more than 65 dBA CNEL. To control stationary noise sources from Industrial, commercial, and manufacturing facilities that may affect sensitive land uses, Policy (NE 3.1) requires that a noise analysis be conducted by an acoustical specialist for all proposed development projects. Maximum noise exposure levels from stationary sources for noise-sensitive uses are regulated by the Municipal Code. To prevent high levels of construction noise from impacting noise-sensitive land uses, Policy NE 3.5 limits construction activities within 200 feet of residential uses to weekdays, between 7:00 a.m. and 6:00 p.m., and limit high-noise-generating construction activities (e.g., grading, demolition, pile driving) near sensitive receptors to weekdays between 9:00 a.m. and 3:00 p.m.

3.2.2 LAND USE COMPATIBILITY

The noise criteria identified in the City of Jurupa Valley Noise Element (Figure 7-3) are guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the city with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels. The *Land Use/Noise Compatibility Matrix* describes categories of compatibility and not specific noise standards. The industrial use of the Project is considered *normally acceptable* with unmitigated exterior noise levels of less than 75 dBA CNEL based on the *Industrial, Manufacturing, Utilities, Agriculture* land use compatibility criteria shown on Exhibit 3-A. Residential designated land uses in the Project study area are considered *normally acceptable* with exterior noise levels below 60 dBA CNEL, and *conditionally acceptable* with exterior noise levels of up to 70 dBA CNEL. For *conditionally acceptable* exterior noise levels, of up to 80 dBA CNEL for Project land uses, *new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice*. (10)

EXHIBIT 3-A: LAND USE/NOISE COMPATIBILITY MATRIX



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

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

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

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

Source: Jurupa Valley General Plan, 2017 Figure 7-3.

3.3 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as Industrial Outdoor Ventures Project, stationary-source (operational) noise such as the expected outdoor sales/loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements are typically evaluated against standards established under a jurisdiction's municipal code.

However, Section 11.05.010 of the City of Jurupa Valley Municipal Code (11) indicates that this chapter is not intended to establish city-wide standards regulating noise. Therefore, potential Project related stationary-source (operational) noise impacts are limited to the generation of a substantial temporary or permanent relative increase in the ambient noise levels. The City of Jurupa Valley Municipal Code is included in Appendix 3.1

3.4 CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the City of Jurupa Valley Municipal Code has established limits to the hours of operation. Section 11.05.020 indicates that noise associated with any private construction activity located within one-quarter of a mile from an inhabited dwelling is considered exempt between the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May. (11) In addition, City of Jurupa Valley General Plan Noise Element Policy NE 3.5 limits commercial construction activities adjacent to or within 200 feet of residential uses to weekdays, between 7:00 a.m. and 6:00 p.m., as well as limiting high-noise-generating construction activities (e.g., grading, demolition, pile driving) near sensitive receptors to weekdays between 9:00 a.m. and 3:00 p.m. (10)

Neither the General Plan nor Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes. Therefore, this analysis relies on a numerical daytime construction threshold based on Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual.* According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive land use. (8 p. 179)

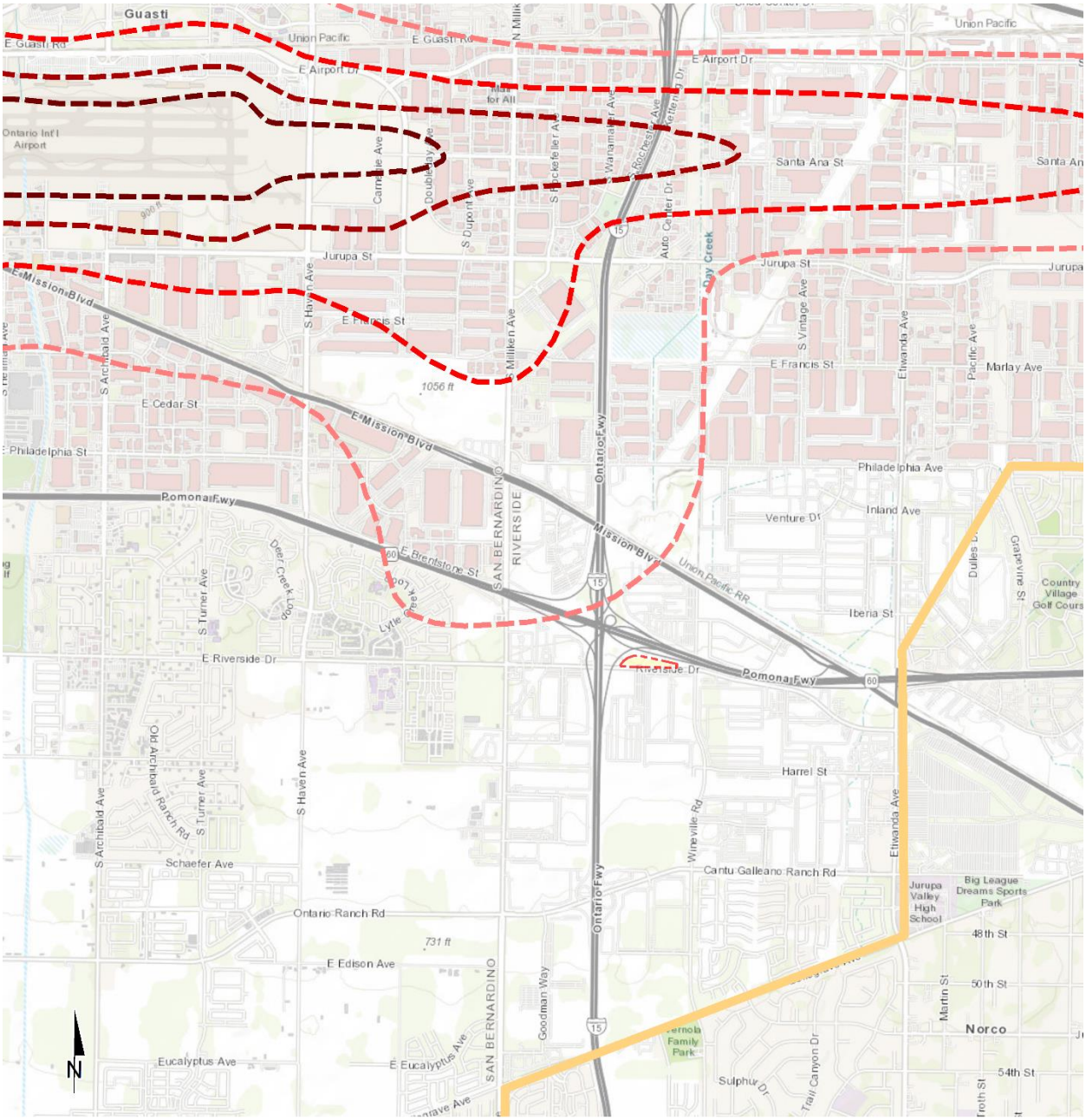
3.5 CONSTRUCTION VIBRATION STANDARDS

To analyze vibration impacts originating from the operation and construction of the Industrial Outdoor Ventures, vibration-generating activities are evaluated against standards identified by the City of Jurupa Valley as a threshold of 0.2 inches per second (in/sec) peak-particle-velocity (PPV) during either long-term operation or construction of the Project. (13) This analysis focuses on the potential ground-borne vibration associated with vehicular traffic and construction activities. Ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity.

3.6 AIRPORT LAND USE COMPATIBILITY

The Project site is located roughly 3 miles southeast of the Ontario International Airport (ONT). This places the Project site within the ONT Airport Influence Area according to Policy Map 2-1 of the *Ontario International Airport Land Use Compatibility Plan (ONT ALUCP).* The ONT ALUCP was amended July 2018 to promote compatibility between airport and the land uses that surround it (14). Since the Project site is located within the ONT Airport Influence Area, the Project is subject to the Noise Criteria established on Table 2-3 in the ONT ALUCP. As shown on Exhibit 3-B, the Project site is located within the ONT Airport Influence Area but outside the 60 dBA CNEL airport noise impact zone consistent with Policy Map 2-3. According to Table 2-3 of the ONT ALUCP, the Industrial Outdoor Ventures land uses located outside the 60 dBA CNEL, are considered *normally compatible land use.* For *normally compatible land use,* either the activities associated with the land use are inherently noisy or standard construction methods will sufficiently attenuate exterior noise to an acceptable indoor community noise equivalent level (CNEL).

EXHIBIT 3-B: ONT FUTURE AIRPORT NOISE CONTOURS



LEGEND:

- Project Site Boundary
- ONT Airport Influence Area

Ontario Airport Noise Impact Zone

- 60 dBA CNEL Noise Contour
- 65 dBA CNEL Noise Contour
- 70 dBA CNEL Noise Contour
- 75 dBA CNEL Noise Contour

Source: Ontario International ALUCP Compatibility Policy Map: Noise Impact Zones, Map 2-3 (July 2018 Amendment)

4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (9) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

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

4.1 NOISE LEVEL INCREASE (THRESHOLD A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. According to the City of Jurupa Valley, a noticeable increase of 3 dBA or more than City standards is considered a significant impact. (13) The City of Jurupa Valley noise related CEQA thresholds guidance is provided in Appendix 4.1.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.5, the vibration impacts originating from the construction of the Industrial Outdoor Ventures, vibration-generating activities are appropriately evaluated the thresholds of significance identified by the City of Jurupa Valley. The City of Jurupa Valley maintains a 0.2 inches per second (in/sec) peak-particle-velocity (PPV) vibration threshold during Project construction.

4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

CEQA Noise Threshold C applies when there are nearby public and private airports and/or air strips and focuses on land use compatibility of the Project to nearby airports and airstrips. The closest airport which would require additional noise analysis under CEQA guideline C is the Ontario International Airport. As previously indicated in Section 3.6, the Project site is located within the ONT Airport Influence Area but is located outside the 60 dBA CNEL airport noise impact zone. Therefore, airport noise impacts are considered *less than significant,* and no further noise analysis is provided under Guideline C.

4.4 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-1 shows the significance criteria summary matrix.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Receiving Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site	Noise-Sensitive	If ambient is < 65 dBA CNEL[1]	Project plus ambient > 65 dBA CNEL and a ≥ 3 dBA CNEL Project increase[2]	
	Non-Noise-Sensitive	If ambient is < 70 dBA CNEL[1]	Project plus ambient > 70 dBA CNEL and a ≥ 3 dBA CNEL Project increase[2]	
Operational	Noise-Sensitive	Exterior Noise Level Standards[2]	65 dBA L_{eq}	45 dBA L_{eq}
		If ambient is > 65 dBA L_{eq}[1]	≥ 3 dBA L_{eq} Project increase[2]	
		Vibration Level Threshold[2]	0.2 in/sec PPV	
Construction	Noise-Sensitive	Limit typical construction activities to weekdays between 7:00 a.m. and 6:00 p.m. Limit grading, demolition, pile driving to weekdays between 9:00 a.m. and 3:00 p.m.[3]		
		Noise Level Threshold[4]	80 dBA L_{eq}	70 dBA L_{eq}
		Vibration Level Threshold[2]	0.2 in/sec PPV	

[1] City of Jurupa Valley General Plan Noise Element Policy NE 1.5 and Figure 7-3 *normally acceptable* noise exposure.
[2] City of Jurupa Valley noise related CEQA thresholds guidance for noise sensitive receivers (Appendix 4.1).
[3] City of Jurupa Valley Municipal Code, Section 11.05.020.(9).
[4] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "PPV" = Peak Particle Velocity

5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at three locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, August 4, 2022. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (17)

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources*. (2) Further, FTA guidance states, t*hat it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community*. (8)

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (8) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels

and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the equivalent or the energy average hourly sound levels (L_{eq}). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location.

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

Location[1]	Description	Energy Average Noise Level (dBA L_{eq})[2]		CNEL
		Daytime	Nighttime	
L1	Located West of the Project site near the residence at 2965 McCloud River Lane	70.0	67.9	75.0
L2	Located southeast of the Project site near the residence at 11021 Green Meadows Lane.	72.5	71.4	78.2
L3	Located at southern boundary of the Project site just north of Riverside Drive.	64.3	62.7	69.7

[1] See Exhibit 5-A for the noise level measurement locations.
[2] Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Table 5-1 provides the equivalent noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L_1, L_2, L_5, L_8, L_{25}, L_{50}, L_{90}, L_{95}, and L_{99} percentile noise levels observed during the daytime and nighttime periods.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

LEGEND:

N

Site Boundary Measurement Locations

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6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment. Consistent with the City of Jurupa Valley General Plan *Land Use/Noise Compatibility Matrix*, all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (15) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (16) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (17)

6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

The proposed Project is anticipated to generate a total of 834 actual vehicle trip-ends per day with 20 truck trip-ends per day. This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network. Table 6-1 presents the roadway parameters used to assess the Project's off-site dBA CNEL transportation noise impacts. Table 6-1 identifies the 4 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Jurupa Valley General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the *Industrial Outdoor Ventures Focused Traffic Assessment*, prepared by Urban Crossroads, Inc. for Existing and Existing with Project conditions. (18)

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Receiving Land Use[1]	Distance from Centerline to Receiving Land Use (Feet)[2]	Vehicle Speed (mph)[3]
1	Wineville Rd.	n/o Riverside Dr.	Non-Sensitive	59'	50
2	Wineville Rd.	s/o Riverside Dr.	Non-Sensitive	59'	50
3	Riverside Dr.	w/o Wineville Rd.	Non-Sensitive	59'	50
4	Riverside Dr.	e/o Wineville Rd.	Non-Sensitive	59'	50

[1] Noise sensitive uses limited to noise sensitive residential land uses.
[2] Distance to receiving land use is based upon the right-of-way distances.
[3] Industrial Outdoor Ventures Focused Traffic Assessment, Urban Crossroads, Inc.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]	
			Existing Without Project	Existing With Project
1	Wineville Rd.	n/o Riverside Dr.	5,741	5,948
2	Wineville Rd.	s/o Riverside Dr.	5,741	5,944
3	Riverside Dr.	w/o Wineville Rd.	5,741	6,364
4	Riverside Dr.	e/o Wineville Rd.	5,741	5,954

[1] Industrial Outdoor Ventures Focused Traffic Assessment, Urban Crossroads, Inc.

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix.

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Focused Traffic Assessment*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for the without Project traffic scenarios, and Table 6-5 shows the vehicle mix used for the with Project traffic scenarios.

Due to the added Project truck trips, the increase in Project traffic volumes and the distributions of trucks on the study area road segments, the percentage of autos, medium trucks and heavy trucks will vary for each of the traffic scenarios. This explains why the existing and future traffic volumes and vehicle mixes vary between seemingly identical study area roadway segments.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits[1]			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	66.50%	8.46%	25.04%	100.00%
Medium Trucks	77.92%	5.19%	16.88%	100.00%
Heavy Trucks	56.76%	10.14%	33.10%	100.00%

[1] Based on the November 30, 2022, 24 -hour directional count collected on Riverside Dr. west of Wineville Road (Industrial Outdoor Ventures Focused Traffic Assessment, Urban Crossroads, Inc.)
"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	60.74%	2.68%	36.58%	100.00%

1 Based on the November 30, 2022, 24 -hour directional count collected on Riverside Dr. west of Wineville Road (Industrial Outdoor Ventures Focused Traffic Assessment, Urban Crossroads, Inc.)

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	Wineville Rd.	n/o Riverside Dr.	62.04%	2.60%	35.36%	100.00%
2	Wineville Rd.	s/o Riverside Dr.	62.08%	2.59%	35.33%	100.00%
3	Riverside Dr.	w/o Wineville Rd.	64.38%	2.46%	33.16%	100.00%
4	Riverside Dr.	e/o Wineville Rd.	61.99%	2.62%	35.39%	100.00%

[1] Industrial Outdoor Ventures Focused Traffic Assessment, Urban Crossroads, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

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7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *Industrial Outdoor Ventures Focused Traffic Assessment*. (18) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental 24-hour dBA CNEL traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA CNEL noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area.

Tables 7-1 through 7-2 present a summary of the exterior dBA CNEL traffic noise levels without barrier attenuation for the proposed Project. Roadway segments are analyzed from the existing without Project and the existing with Project conditions. Appendix 7.1 includes a summary of the dBA CNEL traffic noise level contours for each of the traffic scenarios.

TABLE 7-1: EXISTING WITHOUT PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Wineville Rd.	n/o Riverside Dr.	Non-Sensitive	77.9	198	427	921
2	Wineville Rd.	s/o Riverside Dr.	Non-Sensitive	77.9	198	427	921
3	Riverside Dr.	w/o Wineville Rd.	Non-Sensitive	77.9	198	427	921
4	Riverside Dr.	e/o Wineville Rd.	Non-Sensitive	77.9	198	427	921

[1] Noise sensitive uses limited to noise sensitive residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

TABLE 7-2: EXISTING WITH PROJECT NOISE CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Wineville Rd.	n/o Riverside Dr.	Non-Sensitive	77.9	199	428	923
2	Wineville Rd.	s/o Riverside Dr.	Non-Sensitive	77.9	199	428	922
3	Riverside Dr.	w/o Wineville Rd.	Non-Sensitive	78.0	200	431	928
4	Riverside Dr.	e/o Wineville Rd.	Non-Sensitive	77.9	199	429	924

[1] Noise sensitive uses limited to noise sensitive residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report to fully analyze all the existing traffic scenarios identified in the *Industrial Outdoor Ventures Focused Traffic Assessment* prepared by Urban Crossroads, Inc. Table 7-1 shows the Existing without Project CNEL noise levels. The Existing without Project exterior noise levels are calculated at 77.9 CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project traffic noise levels will range from 77.9 to 78.0 dBA CNEL. Table 7-3 shows that the Project off-site traffic noise level increases will range from 0.0 to 0.1 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level increases due to unmitigated Project-related traffic noise levels.

TABLE 7-3: EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Noise Sensitive Land Use?	Exterior Noise Standard	Incremental Noise Level Increase Threshold[3]	
				No Project	With Project	Project Addition			Limit	Exceeded?
1	Wineville Rd.	n/o Riverside Dr.	Non-Sensitive	77.9	77.9	0.0	No	70	3	No
2	Wineville Rd.	s/o Riverside Dr.	Non-Sensitive	77.9	77.9	0.0	No	70	3	No
3	Riverside Dr.	w/o Wineville Rd.	Non-Sensitive	77.9	78.0	0.1	No	70	3	No
4	Riverside Dr.	e/o Wineville Rd.	Non-Sensitive	77.9	77.9	0.0	No	70	3	No

[1] Noise sensitive uses limited to noise sensitive residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

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8 RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, two receiver locations in the vicinity of the Project site were identified. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

R1: Location R1 represents the existing noise sensitive residence at 2965 McCloud River Lane, approximately 4,338 feet west of the Project site. Receiver R1 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.

R2: Location R2 represents the existing noise sensitive residence at 11021 Green Meadows Lane, approximately 5,421 feet southeast of the Project site. Receiver R2 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

EXHIBIT 8-A: RECEIVER LOCATIONS

9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearby receiver locations, identified in Section 8, resulting from the operation of the proposed Industrial Outdoor Ventures Project. Exhibit 9-A identifies the representative receiver locations and noise source locations used to assess the hourly average L_{eq} operational noise levels consistent with the City of Jurupa Valley CEQA thresholds guidance provided in Appendix 4.1.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. To present the potential worst-case noise conditions, this analysis assumes the Project would be operational 24 hours per day, seven days per week. Consistent with similar industrial uses, the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: outdoor sales/loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements.

9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the outdoor sales/loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements all operating continuously. These sources of noise activity will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (14)

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source[1]	Noise Source Height (Feet)	Min./ Hour[2]		Reference Noise Level (dBA L_{eq}) @ 50 Feet	Sound Power Level (dBA)[3]
		Day	Night		
Outdoor Sales/Loading Dock Activity	8'	60	60	65.7	111.5
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	60	30	57.3	89.0
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1

[1] As measured by Urban Crossroads, Inc.
[2] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.
[3] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

9.2.2 OUTDOOR SALES/LOADING DOCK ACTIVITY

The reference outdoor sales/loading dock activities are intended to describe the typical operational noise source levels associated with the Project. This includes truck idling, deliveries, backup alarms, unloading/loading, docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and forklift operations. At a uniform reference distance of 50 feet, Urban Crossroads collected a reference noise level of 65.7 dBA L_{eq}. Outdoor sales/loading dock activity is estimated during all the daytime, and nighttime hours.

9.2.3 ROOF-TOP AIR CONDITIONING UNITS

The noise level measurements describe a single mechanical roof-top air conditioning unit. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. At the uniform reference distance of 50 feet, the reference noise levels are 57.2 dBA L_{eq}. Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for and average 39 minutes per hour during the daytime hours, and 28 minutes per hour during the nighttime hours. These operating conditions reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project building.

9.2.4 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure activity, Urban Crossroads collected a reference noise level measurement at an existing trash enclosure containing two dumpster bins. The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, and trash dropping into the metal dumpster. The reference noise levels describe trash enclosure noise activities when trash is dropped into an empty metal dumpster, as would occur at the Project Site. The measured reference noise level at the uniform 50-foot reference distance is 57.3 dBA L_{eq} for the trash

enclosure activity. The reference noise level describes the expected noise source activities associated with the trash enclosures for the Project's proposed building.

9.2.5 PARKING LOT VEHICLE MOVEMENTS

To describe the on-site parking lot activity, a long-term 29-hour reference noise level measurement was collected in the center of activity within the staff parking lot of an Amazon distribution center. At 50 feet from the center of activity, the parking lot produced a reference noise level of 52.6 dBA L_{eq}. Parking activities are expected to take place during the full hour (60 minutes) throughout the daytime and evening hours. The parking lot noise levels are mainly due cars pulling in and out of parking spaces in combination with car doors opening and closing.

9.3 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels.

Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the CadnaA noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include outdoor sales/loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver

locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 37.2 to 40.0 dBA L_{eq}.

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)	
	R1	R2
Loading Dock Activity	40.0	37.2
Roof-Top Air Conditioning Units	13.5	13.5
Trash Enclosure Activity	10.5	8.7
Parking Lot Vehicle Movements	16.1	13.9
Total (All Noise Sources)	**40.0**	**37.2**

[1] See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

Table 9-3 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 37.2 to 40.0 dBA L_{eq}. The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1 and Appendix 9.1.

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)	
	R1	R2
Loading Dock Activity	40.0	37.2
Roof-Top Air Conditioning Units	11.1	11.1
Trash Enclosure Activity	6.5	4.7
Parking Lot Vehicle Movements	16.1	13.9
Total (All Noise Sources)	**40.0**	**37.2**

[1] See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Jurupa Valley exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with Industrial Outdoor Ventures Project will not exceed the City of Jurupa Valley daytime and nighttime operational noise criteria outlined in Appendix 4.1. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location[1]	Project Operational Noise Levels (dBA Leq)[2]		Noise Level Standards (dBA Leq)[3]		Noise Level Standards Exceeded?[4]	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	40.0	40.0	65	45	No	No
R2	37.2	37.2	65	45	No	No

[1] See Exhibit 8-A for the receiver locations.
[2] Proposed Project operational noise levels as shown on Tables 9-2 and 9-3.
[3] Exterior noise level standards for residential land use, as shown on Table 4-1.
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

To describe the Project operational noise level increases, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (2) Instead, they must be logarithmically added using the following base equation:

$$SPL_{Total} = 10\log_{10}[10^{SPL1/10} + 10^{SPL2/10} + \ldots 10^{SPLn/10}]$$

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-5 and 9-6, respectively. As indicated on Tables 9-5 and 9-6, the Project will not create a measurable noise level increases at the nearest receiver locations. Project-related operational noise level increases will not exceed the operational noise level increase significance criteria presented in Table 4-1, and the increases at the sensitive receiver locations will be *less than significant.*

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
R1	40.0	L1	70.0	70.0	0.0	3	No
R2	37.2	L2	72.5	72.5	0.0	3	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project daytime operational noise levels as shown on Table 9-2.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
R1	40.0	L1	67.9	67.9	0.0	3	No
R2	37.2	L2	71.4	71.4	0.0	3	No

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project nighttime operational noise levels as shown on Table 9-3.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed nighttime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-1.

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10 CONSTRUCTION IMPACTS

This section analyzes potential equivalent dBA L_{eq} impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearby sensitive receiver locations previously described in Section 8. To prevent high levels of construction noise from impacting noise-sensitive land uses, City of Jurupa Valley General Plan Noise Element Policy NE 3.5 limits construction activities within 200 feet of residential uses to weekdays, between 7:00 a.m. and 6:00 p.m., and limit high-noise-generating construction activities (e.g., grading, demolition, pile driving) near sensitive receptors to weekdays between 9:00 a.m. and 3:00 p.m.

10.1 CONSTRUCTION NOISE LEVELS

The FTA *Transit Noise and Vibration Impact Assessment Manual* recognizes that construction projects are accomplished in several different stages and outlines the procedures for assessing noise impacts during construction. Each stage has a specific equipment mix, depending on the work to be completed during that stage. As a result of the equipment mix, each stage has its own noise characteristics; some stages have higher continuous noise levels than others, and some have higher impact noise levels than others. The Project construction activities are expected to occur in the following stages:

- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (22) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS

10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming they operate at the same time. As shown on Table 10-2, the construction noise levels are expected to range from 29.9 to 37.4 dBA L_{eq} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Activity	Reference Noise Level @ 50 Feet (dBA L_{eq})[1]	Combined Noise Level (dBA L_{eq})[2]	Combined Sound Power Level (PWL)[3]
Site Preparation	Crawler Tractors	78	80	112
	Hauling Trucks	72		
	Rubber Tired Dozers	75		
Grading	Graders	81	83	115
	Excavators	77		
	Compactors	76		
Building Construction	Cranes	73	81	113
	Tractors	80		
	Welders	70		
Paving	Pavers	74	83	115
	Paving Equipment	82		
	Rollers	73		
Architectural Coating	Cranes	73	77	109
	Air Compressors	74		
	Generator Sets	70		

[1] FHWA Roadway Construction Noise Model (RCNM).

[2] Represents the combined noise level for all equipment assuming they operate at the same time consistent with FTA Transit Noise and Vibration Impact Assessment guidance.

[3] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calibrated using the CadnaA noise model at the reference distance to the noise source.

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
R1	34.4	37.4	35.4	37.4	31.4	37.4
R2	32.9	35.9	33.9	35.9	29.9	35.9

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-3. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	37.4	80	No
R2	35.9	80	No

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 10-2.
[3] Construction noise level thresholds as shown on Table 4-1.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.5 CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-4. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential for human response (annoyance) and building damage using the following vibration assessment methods defined by the FTA. To describe the vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

TABLE 10-4: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089
Vibratory Roller	0.210

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-5 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 4,338 to 5,421 feet from Project construction activities, construction vibration velocity levels are estimated at 0.000 in/sec PPV. Based on maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec), the typical Project construction vibration levels will fall below the building damage thresholds at all the noise sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

TABLE 10-5: PROJECT CONSTRUCTION VIBRATION LEVELS

Location[1]	Distance to Const. Activity (Feet)[2]	Typical Construction Vibration Levels PPV (in/sec)[3]						Thresholds PPV (in/sec)[4]	Thresholds Exceeded?[5]
		Small bulldozer	Jackhammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level		
R1	4,338'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R2	5,421'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Distance from receiver building facade to Project construction boundary (Project site boundary).
[3] Based on the Vibration Source Levels of Construction Equipment (Table 10-4).
[4] Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19, p. 38.
[5] Does the peak vibration exceed the acceptable vibration thresholds?
"PPV" = Peak Particle Velocity

Moreover, the vibration levels reported at the sensitive receiver locations are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site perimeter.

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11 REFERENCES

1. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
2. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
3. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
4. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch.** *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* December 2011.
5. **U.S. Department of Transportation Federal Highway Administration.** *Highway Noise Barrier Design Handbook.* 2001.
6. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
7. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
8. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
9. **Office of Planning and Research.** *State of California General Plan Guidelines.* 2019.
10. **City of Jurupa Valley.** *General Plan Noise Element.* September 2017.
11. —. *Municipal Code, Chapter 11.05 - Noise Regulations.*
12. **City of Jurupa Valley Planning Department.** *Noise Thresholds of Significance Guidance (MA16170, Project: Agua Mansa Commerce Park Specific Plan, Noise Comment 2).* December 19, 2018.
13. **City of Ontario.** *Ontario International Airport Land Use Compatibility Plan.* July 2018.
14. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*
15. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.
16. **California Department of Transportation Environmental Program, Office of Environmental Engineering.** *Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction.* September 1995. TAN 95-03.
17. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
18. **Urban Crossroads, Inc.** *Industrial Outdoor Ventures (MA2123) Focused Traffic Assessment.* March, 2023.
19. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning.** *FHWA Roadway Construction Noise Model.* January, 2006.

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12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Industrial Outdoor Ventures Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 584-3148.

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EDUCATION

Master of Science in Civil and Environmental Engineering
California Polytechnic State University, San Luis Obispo • December, 1993

Bachelor of Science in City and Regional Planning
California Polytechnic State University, San Luis Obispo • June, 1992

PROFESSIONAL REGISTRATIONS

PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009
AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012
PTP – Professional Transportation Planner • May, 2007 – May, 2013
INCE – Institute of Noise Control Engineering • March, 2004

PROFESSIONAL AFFILIATIONS

ASA – Acoustical Society of America
ITE – Institute of Transportation Engineers

PROFESSIONAL CERTIFICATIONS

Certified Acoustical Consultant – County of Orange • February, 2011
FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013

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APPENDIX 3.1:

CITY OF JURUPA VALLEY MUNICIPAL CODE

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CHAPTER 11.05. - NOISE REGULATIONS

Sec. 11.05.010. - Intent.

At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of City of Jurupa Valley residents and degrade their quality of life. Pursuant to its police power, the City Council declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish city-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act (Pub. Resources Code Section 21000 *et seq.*) and no such thresholds are established.

(Ord. No. 2012-01, § 1(11.10.010), 2-16-2012)

Sec. 11.05.020. - Exemptions.

Sound emanating from the following sources is exempt from the provisions of this chapter:

(1) Facilities owned or operated by or for a governmental agency;

(2) Capital improvement projects of a governmental agency;

(3) The maintenance or repair of public properties;

(4) Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile;

(5) Public or private schools and school-sponsored activities;

(6) Agricultural operations on land designated "agriculture" in the Jurupa Valley General Plan, or land zoned A-1 (light agriculture), A-P (light agriculture with poultry), A-2 (heavy agriculture), or A-D (agriculture-dairy), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile;

(7) Wind energy conversion systems (WECS), provided such systems comply with the WECS noise provisions of Jurupa Valley Municipal Code or Title 9;

(8) Private construction projects located one-quarter (¼) of a mile or more from an inhabited dwelling;

(9) Private construction projects located within one-quarter (¼) of a mile from an inhabited dwelling, provided that:

(a) Construction does not occur between the hours of six (6:00) p.m. and six (6:00) a.m. during the months of June through September; and

(b) Construction does not occur between the hours of six (6:00) p.m. and seven (7:00) a.m. during the months of October through May;

(10) Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of seven (7:00) a.m. and eight (8:00) p.m.;

(11) Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;

(12) Heating and air conditioning equipment;

(13) Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety, and welfare; or

(14) The discharge of firearms consistent with all state laws.

(Ord. No. 2012-01, § 1(11.10.020), 2-16-2012)

Sec. 11.05.030. - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Audio equipment means a television, stereo, radio, tape player, compact disc player, mp3 player, iPod or other similar device.

Decibel (dB) means a unit for measuring the relative amplitude of a sound equal approximately to the smallest difference normally detectable by the human ear, the range of which includes approximately one hundred and thirty (130) decibels on a scale beginning with zero decibels for the faintest detectable sound. Decibels are measured with a sound level meter using different methodologies as defined below:

(1) "A-weighting (dBA)" means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.

(2) "Maximum sound level (Lmax)" means the maximum sound level measured on a sound level meter.

Governmental agency means the United States, the State of California, Riverside County, City of Jurupa Valley, any city within Riverside County, any special district within Riverside County or any combination of these agencies.

Land use permit means a discretionary permit issued by Jurupa Valley pursuant to Jurupa Valley Municipal Code or Title 9.

Motor vehicle means a vehicle that is self-propelled.

Motor vehicle sound system means a stereo, radio, tape player, compact disc player, mp3 player, iPod or other similar device.

Noise means any loud, discordant or disagreeable sound.

Occupied property means property upon which is located a residence, business or industrial or manufacturing use.

Off-highway vehicle means a motor vehicle designed to travel over any terrain.

Public or private school means an institution conducting academic instruction at the preschool, elementary school, junior high school, high school, or college level.

Public property means property owned by a governmental agency or held open to the public, including, but not limited to, parks, streets, sidewalks, and alleys.

Sensitive receptor means a land use that is identified as sensitive to noise in the noise element of the Jurupa Valley General Plan, as applicable to the City of Jurupa Valley by Chapter 1.35, including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries or public libraries.

Sound-amplifying equipment means a loudspeaker, microphone, megaphone or other similar device.

Sound level meter means an instrument meeting the standards of the American National Standards Institute for Type 1 or Type 2 sound level meters or an instrument that provides equivalent data.

(Ord. No. 2012-01, § 1(11.10.040), 2-16-2012)

Sec. 11.05.040. - General sound level standards.

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1 of this section or that violates the special sound source standards set forth in Section 11.05.060.

Table 1
Sound Level Standards (Db Lmax)

General Plan Foundation Component	*General Plan Land Use Designation*	*General Plan Land Use Designation Name*	*Density*	*Maximum Decibel Level*	
				7 a.m.—10 p.m.	*10 p.m.—7 a.m.*
Community Development	EDR	Estate density residential	2 AC	55	45
	VLDR	Very low density residential	1 AC	55	45
	LDR	Low density residential	1/2 AC	55	45
	MDR	Medium density residential	2—5	55	45
	MHDR	Medium high density residential	5—8	55	45
	HDR	High density residential	8—14	55	45
	VHDR	Very high density residential	14—20	55	45
	HTDR	Highest density residential	20+	55	45
	CR	Retail commercial		65	55
	CO	Office commercial		65	55
	CT	Tourist commercial		65	55
	CC	Community center		65	55
	I	Light industrial		75	55
	HI	Heavy industrial		75	75

	BP	Business park		65	45
	PF	Public facility		65	45
	SP	Specific plan—Residential		55	45
		Specific plan—Commercial		65	55
		Specific plan—Light Industrial		75	55
		Specific plan—Heavy Industrial		75	75
Rural Community	EDR	Estate density residential	2 AC	55	45
	VLDR	Very low density residential	AC	55	45
	LDR	Low density residential	1/2 AC	55	45
Rural	RR	Rural residential	5 AC	45	45
	RM	Rural mountainous	10 AC	45	45
	RD	Rural desert	0 AC	45	45
Agriculture	AG	Agriculture	10 AC	45	45
Open Space	C	Conservation		45	45
	CH	Conservation habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 AC	45	45
	W	Watershed		45	45
	MR	Mineral resources		75	45

(Ord. No. 2012-01, § 1(11.10.040), 2-16-2012)

Sec. 11.05.050. - Sound level measurement methodology.

If the sound standard being applied is measured in decibels, then sound level measurements pursuant to this section shall be required to establish a violation of this chapter. If the sound standard being applied is not measured in decibels, then sound level measurements are not required to establish a violation of this chapter. Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the Enforcement Officials identified in Section 11.05.080. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be re-verified. Sound level meters and calibration equipment shall be certified annually.

(Ord. No. 2012-01, § 1(11.10.050), 2-16-2012)

Sec. 11.05.060. - Special sound sources standards.

The general sound level standards set forth in Section 11.05.040 apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards, the failure to comply with which constitute separate violations of this chapter:

(1) *Motor vehicles.*

(a) *Off-highway vehicles.*

(i) No person shall operate an off-highway vehicle unless it is equipped with a USDA-qualified spark arrester and a constantly operating and properly maintained muffler. A muffler is not considered constantly operating and properly maintained if it is equipped with a cutout, bypass or similar device.

(ii) No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than ninety-six (96) dBA if the vehicle was manufactured on or after January 1, 1986, or is not more than one hundred and one (101) dBA if the vehicle was manufactured before January 1, 1986. For purposes of this subsection, emitted noise shall be measured a distance of twenty (20) inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.

(b) *Sound systems.* No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of ten (10:00) p.m. and eight (8:00) a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than one hundred (100) feet from the vehicle. Sound level measurements may be used, but are not required to establish a violation of this subsection.

(2) *Power tools and equipment.* No person shall operate any power tools or equipment between the hours of ten (10:00) p.m. and eight (8:00) a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a

distance greater than one hundred (100) feet from the power tools or equipment. Sound level measurements may be used, but are not required to establish a violation of this subsection.

(3) *Audio equipment.* No person shall operate any audio equipment, whether portable or not, such that the equipment is audible to the human ear at a distance greater than one hundred (100) feet from the equipment. Sound level measurements may be used, but are not required to establish a violation of this subsection.

(4) *Sound-amplifying equipment and live music.* No person shall install, use or operate sound-amplifying equipment, or perform, or allow to be performed, live music if the sound emanating from sound-amplifying equipment or live music is audible to the human ear at a distance greater than one hundred (100) feet from the equipment or music. To the extent that these requirements conflict with any conditions of approval attached to an underlying land use permit, these requirements shall control. Sound level measurements may be used, but are not required to establish a violation of this subsection.

(Ord. No. 2012-01, § 1(11.10.060), 2-16-2012; Ord. No. 2015-08, § 1, 6-18-2015)

Sec. 11.05.070. - Exceptions.

Exceptions may be requested from the standards set forth in Section 11.10.040 or 11.10.060 of this chapter and may be characterized as construction-related or continuous-events exceptions.

(1) *Application and processing.*

(a) *Construction-related exceptions.* An application for a construction-related exception shall be made to and considered by the Building Official of the city on forms provided by the Building and Safety Division and shall be accompanied by the appropriate filing fee. No public hearing is required.

(b) *Continuous events exceptions.* An application for a continuous events exception shall be made to the Planning Director on forms provided by the Planning Department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous events exception, the Planning Director shall set the matter for public hearing before the Planning Commission, notice of which shall be given as provided in Section 9.240.250 of this Code. Notwithstanding the above, an application for a continuous events exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.

(2) *Requirements for approval.* The appropriate decision-making body or officer shall not approve an exception application unless the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decision-making body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.

(3) *Appeals.* The Building Official's decision on an application for a construction-relation exception is considered final. After making a decision on an application for a continuous-events exception, the appropriate decision-making body or officer shall mail notice of the decision to the applicant. Within ten (10) calendar days after the mailing of such notice, the applicant or interested person may appeal the decision pursuant to and in accordance with the provisions of Chapter 2.40 of this Code.

(Ord. No. 2012-01, § 1(11.10.070), 2-16-2012; Ord. No. 2015-08, § 2, 6-18-2015; Ord. No. 2016-04, § 11(11.10.070), 4-7-2016)

Sec. 11.05.080. - Violations and penalties.

A. Violation of the provisions of this chapter may be enforced pursuant to the enforcement provisions set forth in Title 1 of this Code, including Chapter 1.10, Code Enforcement Generally, Chapter 1.15, Criminal Prosecution, Chapter 1.20, Administrative Penalties, or Chapter 1.25, Public Nuisance Injunctions.

B. The fine schedule for a violation of this chapter enforced pursuant to Chapter 1.20, shall be in the amount of:

(1) Two hundred dollars ($200) for the first violation occurring within a three hundred and sixty-six (366) day period;

(2) Five hundred dollars ($500) for a second violation occurring within three hundred and sixty-six (366) days of the first violation;

(3) Seven hundred and fifty dollars ($750) for a third violation occurring within three hundred and sixty-six (366) days of the first violation; or

(4) One thousand dollars ($1,000) for a fourth violation and each subsequent violation occurring within three hundred and sixty-six (366) days of the first violation.

C. The fines set forth in subsection (B) of this section may be modified by a resolution of the City Council establishing an administrative citation schedule not to exceed one thousand dollars ($1,000) per violation and which may include increased fines for repeat violations and penalties.

D. The City Manager or his designee may reduce the fines set forth in subsections (B) or (C) of this section in the event he or she finds that the violation is not likely to reoccur, the violator cooperated with Enforcement Officials in attempting to enforce the provisions of this chapter and resolve the issues giving rise to the violation, the actions of the violator giving rise to the violation were not malicious and were not taken in deliberate disregard of the provisions of this chapter, and the ends of justice would not be served by imposing the full fine.

(Ord. No. 2012-01, § 1(11.10.080), 2-16-2012)

Sec. 11.05.090. - Duty to cooperate.

No person shall refuse to cooperate with, or obstruct, the Enforcement Officials identified in Section 11.05.080 when they are engaged in the process of enforcing the provisions of this chapter. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this chapter.

(Ord. No. 2012-01, § 1(11.10.090), 2-16-2012)

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APPENDIX 4.1:

CITY OF JURUPA VALLEY CEQA THRESHOLDS

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Noise Impact Analysis October 30, 2018		Comment
		increase and, if appropriate, the project's contribution to a potentially significant cumulative traffic noise increase.
2	Global	Sec. 11.05.010 of the Municipal Code states in part: "*...This chapter is intended to establish city-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act (Pub. Resources Code Section 21000 et seq.) and no such thresholds are established...*" **Please use the following standards for CEQA significance thresholds and revise report throughout:** • Construction Noise: For sensitive residential land uses nearby, the daytime and nighttime 8-hour standards are 80 dBA Leq and 70 dBA Leq, respectively (FTA Transit Noise and Vibration Impact Assessment). • Operational Noise (stationary): During operation of the Project, a significant noise-related impact would occur if Project operational noise at a noise-sensitive receptor exceeds: o 65 dBA Leq (10 minutes) between 7:00 a.m. and 10:00 p.m., or o 45 dBA Leq (10 min) between 10:00 p.m. and 7:00 a.m. • Operational Noise (traffic): Project-related traffic increases the noise level at a: o Residential land use by 3 dBA or more to 65 dBA CNEL or above; or o Commercial land use by 3 dBA or more to 70 dBA CNEL or above. • Vibration: A significant vibration-related impact would occur if the Project would expose a vibration-sensitive receptor to vibration levels that exceed 0.2 in/sec PPV during either long-term operation or construction of the Project *Note: The Municipal Code noise standards may be used for planning purposes only (i.e. to demonstrate that the project meets the City code requirements for site plan approval).*
3	Page 23	Construction exemptions for San Bernardino County are not discussed and are contained in Section 83.01.080(g) (3), i.e., 7 am – 7pm, except Sundays and federal holidays.
4	Page 24 and global	Policy NE 4.4 is intended for train operation but is being used to assess projects. Please convert this RMS level to VdB so that it can

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APPENDIX 5.1:

STUDY AREA PHOTOS

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15021_L1_H 1.North
34, 1' 8.460000"117, 33' 42.780000"

15021_L1_H 2.South
34, 1' 8.380000"117, 33' 42.780000"

15021_L1_H 3.East
34, 1' 8.380000"117, 33' 42.780000"

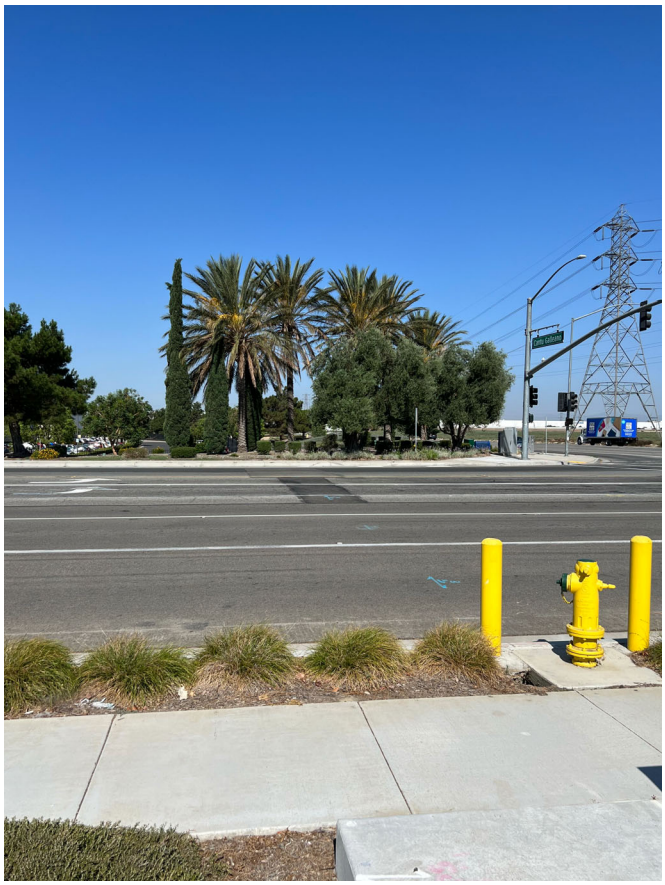
15021_L1_H 4.West
34, 1' 8.390000"117, 33' 42.910000"

JN:15021

15021_L2_I 1.North
34, 0' 13.990000"117, 32' 30.320000"

15021_L2_I 2.South
34, 0' 14.020000"117, 32' 30.350000"

15021_L2_I 3.East
34, 0' 14.010000"117, 32' 30.350000"



15021_L2_I 4.West
34, 0' 14.090000"117, 32' 30.430000"

JN:15021

15021_L3_W 1.North
34, 1' 7.760000"117, 32' 45.920000"

15021_L3_W 2.South
34, 1' 7.720000"117, 32' 46.360000"

15021_L3_W 3.East
34, 1' 7.730000"117, 32' 46.310000"

15021_L3_W 4.West
34, 1' 7.700000"117, 32' 46.200000"

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APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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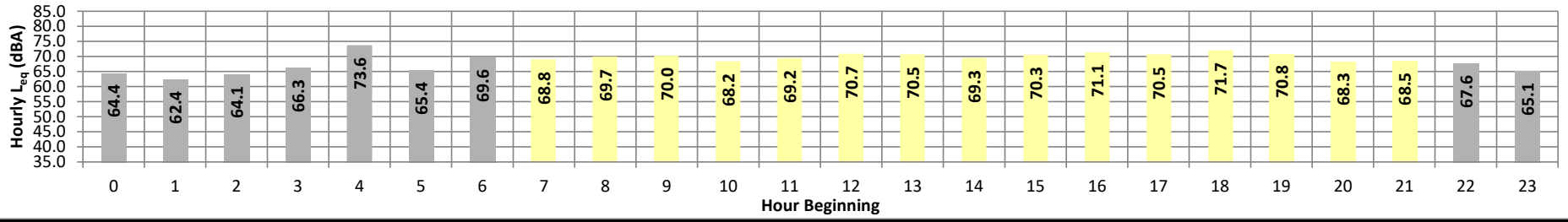
24-Hour Noise Level Measurement Summary

Date: Wednesday, August 3, 2022 | *Location:* L2 - Located West of the Project site near the residence at | *Meter:* Piccolo II | *JN:* 15021

Project: Industrial Outdoor Ventures | *Source:* 2965 McCloud River Lane | *Analyst:* B. Lawson

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	64.4	76.3	47.6	75.7	74.8	72.1	70.0	62.1	54.3	48.5	48.1	47.7	64.4	10.0	74.4
	1	62.4	74.0	47.1	73.5	72.6	69.8	67.6	60.9	54.2	48.0	47.6	47.3	62.4	10.0	72.4
	2	64.1	74.8	50.3	74.3	73.4	71.0	69.3	63.3	58.6	51.9	51.1	50.4	64.1	10.0	74.1
	3	66.3	78.8	51.2	78.2	76.8	73.7	71.2	63.8	57.5	52.3	51.8	51.3	66.3	10.0	76.3
	4	73.6	84.6	62.4	83.8	82.6	80.0	78.7	73.3	69.4	63.2	62.9	62.6	73.6	10.0	83.6
	5	65.4	76.7	52.6	76.2	75.1	72.4	70.4	64.5	59.5	53.9	53.4	52.8	65.4	10.0	75.4
	6	69.6	79.4	58.0	79.1	78.5	76.5	74.8	69.3	65.0	59.4	58.8	58.2	69.6	10.0	79.6
Day	7	68.8	78.8	57.0	78.3	77.5	75.4	73.9	69.0	63.7	58.4	57.7	57.2	68.8	0.0	68.8
	8	69.7	80.1	56.9	79.5	78.6	76.1	74.6	70.0	64.5	58.4	57.6	57.1	69.7	0.0	69.7
	9	70.0	79.7	58.9	79.4	78.6	76.4	74.8	70.2	65.9	60.2	59.7	59.1	70.0	0.0	70.0
	10	68.2	78.6	52.6	78.2	77.3	75.0	73.4	68.1	62.5	54.7	53.5	52.8	68.2	0.0	68.2
	11	69.2	79.2	58.7	78.8	78.1	75.8	73.9	69.2	64.8	60.1	59.5	58.9	69.2	0.0	69.2
	12	70.7	82.1	58.5	81.1	80.0	77.1	75.1	70.7	65.4	59.8	59.1	58.6	70.7	0.0	70.7
	13	70.5	80.5	58.0	80.1	79.3	77.3	75.5	70.6	66.0	59.4	58.7	58.1	70.5	0.0	70.5
	14	69.3	78.8	55.0	78.3	77.5	75.2	74.1	70.3	65.4	57.0	56.1	55.2	69.3	0.0	69.3
	15	70.3	80.9	53.9	80.4	79.5	76.7	75.0	70.5	65.4	56.4	55.2	54.1	70.3	0.0	70.3
	16	71.1	82.4	53.6	81.7	80.7	77.3	75.4	71.1	66.5	56.6	55.3	53.9	71.1	0.0	71.1
	17	70.5	80.4	53.9	79.8	78.8	76.2	74.9	71.3	67.1	57.3	55.3	54.1	70.5	0.0	70.5
	18	71.7	83.0	53.9	82.6	81.7	78.4	76.2	71.1	66.5	56.9	55.3	54.0	71.7	0.0	71.7
	19	70.8	84.0	52.5	82.6	81.4	77.6	75.0	69.7	63.6	54.4	53.5	52.7	70.8	5.0	75.8
	20	68.3	78.2	54.1	77.7	76.8	74.8	73.5	69.0	63.0	55.3	54.7	54.2	68.3	5.0	73.3
	21	68.5	77.5	53.2	77.1	76.3	74.9	73.9	69.4	63.6	55.1	54.1	53.4	68.5	5.0	73.5
Night	22	67.6	78.9	52.8	78.4	77.5	74.5	72.7	67.0	60.8	54.0	53.4	52.9	67.6	10.0	77.6
	23	65.1	76.3	49.4	75.7	74.7	72.5	70.8	64.3	57.0	50.2	49.8	49.5	65.1	10.0	75.1

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	68.2	77.5	52.5	77.1	76.3	74.8	73.4	68.1	62.5	54.4	53.5	52.7
	Max	71.7	84.0	58.9	82.6	81.7	78.4	76.2	71.3	67.1	60.2	59.7	59.1
Energy Average		70.0	Average:		79.7	78.8	76.3	74.6	70.0	64.9	57.3	56.3	55.6
Night	Min	62.4	74.0	47.1	73.5	72.6	69.8	67.6	60.9	54.2	48.0	47.6	47.3
	Max	73.6	84.6	62.4	83.8	82.6	80.0	78.7	73.3	69.4	63.2	62.9	62.6
Energy Average		67.9	Average:		77.2	76.2	73.6	71.7	65.4	59.6	53.5	53.0	52.5

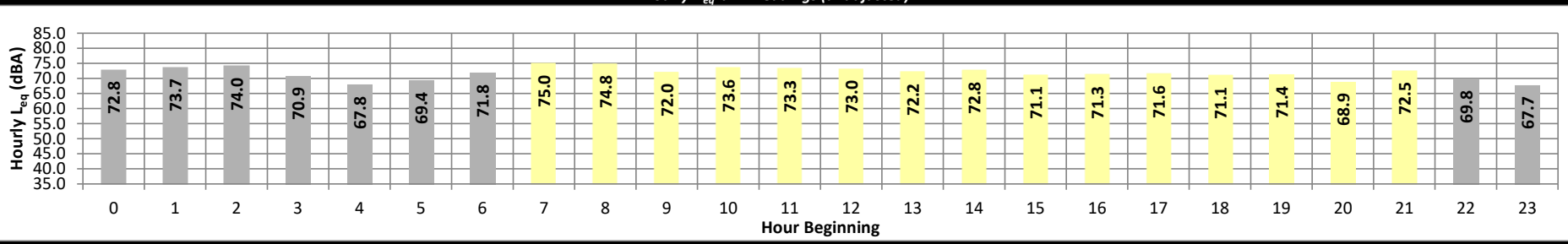
24-Hour CNEL	Leq (dBA) Daytime (7am-10pm)	Leq (dBA) Nighttime (10pm-7am)
75.0	**70.0**	**67.9**

24-Hour Noise Level Measurement Summary

Date: Wednesday, August 3, 2022 *Location:* L2 - Located southeast of the Project site near the residence at *Meter:* Piccolo II *JN:* 15021

Project: Industrial Outdoor Ventures *Source:* 11021 Green Meadows Lane. *Analyst:* B. Lawson

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	72.8	77.0	69.5	76.7	76.4	75.3	74.8	74.0	72.2	69.8	69.7	69.5	72.8	10.0	82.8
	1	73.7	79.3	70.3	78.8	78.2	76.0	75.5	75.0	73.0	70.6	70.5	70.4	73.7	10.0	83.7
	2	74.0	78.4	70.4	78.2	77.8	76.9	76.3	75.2	73.5	70.7	70.6	70.5	74.0	10.0	84.0
	3	70.9	77.4	66.7	77.0	76.6	75.0	74.0	71.7	69.6	67.1	67.0	66.8	70.9	10.0	80.9
	4	67.8	75.8	62.6	75.4	74.8	73.1	71.8	68.0	65.4	63.4	63.1	62.7	67.8	10.0	77.8
	5	69.4	77.2	63.7	76.8	76.2	74.6	73.6	69.8	66.7	64.4	64.1	63.8	69.4	10.0	79.4
	6	71.8	81.2	64.0	80.8	80.2	78.2	76.7	71.6	67.4	64.7	64.4	64.1	71.8	10.0	81.8
Day	7	75.0	81.6	71.7	81.3	80.8	79.2	78.2	75.1	73.5	72.0	71.9	71.7	75.0	0.0	75.0
	8	74.8	85.8	70.3	85.0	83.6	79.9	77.5	73.8	71.8	70.8	70.5	70.4	74.8	0.0	74.8
	9	72.0	82.0	60.9	81.5	80.9	78.7	77.2	71.7	66.7	62.4	61.5	61.0	72.0	0.0	72.0
	10	73.6	83.0	67.0	82.6	81.9	79.6	78.1	73.4	69.7	67.4	67.2	67.0	73.6	0.0	73.6
	11	73.3	81.6	68.4	81.2	80.6	78.7	77.5	73.3	70.6	68.7	68.6	68.4	73.3	0.0	73.3
	12	73.0	82.2	61.8	81.7	81.1	79.1	77.8	73.7	69.3	63.3	62.6	61.9	73.0	0.0	73.0
	13	72.2	81.2	63.0	80.8	80.2	78.6	77.3	72.6	68.0	63.9	63.5	63.1	72.2	0.0	72.2
	14	72.8	83.0	62.0	82.4	81.6	79.0	77.4	73.0	68.4	63.2	62.6	62.1	72.8	0.0	72.8
	15	71.1	80.7	61.7	80.3	79.7	77.5	76.2	71.2	66.5	62.8	62.3	61.8	71.1	0.0	71.1
	16	71.3	81.4	62.8	80.8	79.9	77.5	76.2	71.2	66.7	63.5	63.2	62.9	71.3	0.0	71.3
	17	71.6	81.4	63.2	81.0	80.4	78.2	76.6	71.2	66.7	64.0	63.6	63.3	71.6	0.0	71.6
	18	71.1	81.0	63.3	80.6	79.8	77.6	76.1	70.5	66.6	64.0	63.7	63.4	71.1	0.0	71.1
	19	71.4	82.0	63.2	81.6	80.7	78.0	76.3	70.3	66.2	63.9	63.6	63.3	71.4	5.0	76.4
	20	68.9	78.7	62.8	78.5	77.9	75.3	73.4	67.6	65.0	63.5	63.2	62.9	68.9	5.0	73.9
	21	72.5	86.3	62.2	85.5	83.9	78.9	75.6	69.3	65.0	62.9	62.6	62.3	72.5	5.0	77.5
Night	22	69.8	81.2	61.5	80.7	80.1	76.5	73.8	68.2	64.5	62.3	61.9	61.6	69.8	10.0	79.8
	23	67.7	78.0	59.4	77.6	76.9	74.4	72.9	66.8	62.6	60.1	59.8	59.5	67.7	10.0	77.7

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	68.9	78.7	60.9	78.5	77.9	75.3	73.4	67.6	65.0	62.4	61.5	61.0
	Max	75.0	86.3	71.7	85.5	83.9	79.9	78.2	75.1	73.5	72.0	71.9	71.7
Energy Average		72.5	Average:		81.6	80.9	78.4	76.8	71.9	68.1	65.1	64.7	64.4
Night	Min	67.7	75.8	59.4	75.4	74.8	73.1	71.8	66.8	62.6	60.1	59.8	59.5
	Max	74.0	81.2	70.4	80.8	80.2	78.2	76.7	75.2	73.5	70.7	70.6	70.5
Energy Average		71.4	Average:		78.0	77.5	75.6	74.4	71.1	68.3	65.9	65.7	65.4

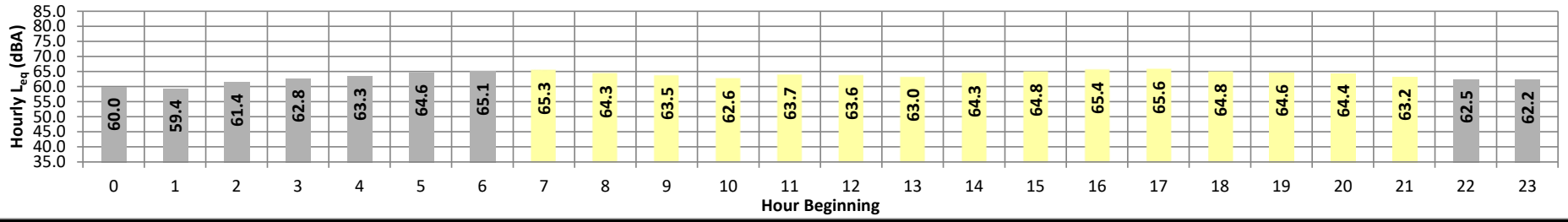
24-Hour CNEL	*Leq (dBA) Daytime (7am-10pm)*	*Leq (dBA) Nighttime (10pm-7am)*
78.2	**72.5**	**71.4**

24-Hour Noise Level Measurement Summary

Date: Wednesday, August 3, 2022 | *Location:* L3 - Located at southern boundary of the Project site just | *Meter:* Piccolo II | *JN:* 15021

Project: Industrial Outdoor Ventures | *Source:* north of Riverside Drive. | *Analyst:* B. Lawson

Hourly L_{eq} dBA Readings (unadjusted)



Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L_{eq}	Adj.	Adj. L_{eq}
Night	0	60.0	69.3	53.2	68.8	68.2	66.4	64.8	59.6	56.5	54.0	53.6	53.3	60.0	10.0	70.0
	1	59.4	68.7	52.5	67.9	67.0	65.3	64.0	59.4	55.9	53.3	52.9	52.6	59.4	10.0	69.4
	2	61.4	69.8	53.3	69.5	69.1	67.9	66.7	61.3	57.8	54.2	53.9	53.4	61.4	10.0	71.4
	3	62.8	72.9	53.9	72.3	71.5	69.7	67.9	61.7	58.7	55.1	54.6	54.0	62.8	10.0	72.8
	4	63.3	72.3	56.6	71.7	71.1	68.9	67.5	63.4	60.7	57.7	57.2	56.7	63.3	10.0	73.3
	5	64.6	72.2	58.1	71.7	71.0	69.5	68.6	65.4	62.6	59.0	58.6	58.2	64.6	10.0	74.6
	6	65.1	72.6	59.3	72.2	71.8	70.1	68.8	65.4	63.4	60.4	59.9	59.4	65.1	10.0	75.1
Day	7	65.3	73.6	58.7	73.3	72.9	71.2	69.4	65.3	63.1	59.8	59.3	58.8	65.3	0.0	65.3
	8	64.3	71.2	58.5	70.7	70.2	68.9	68.0	65.0	62.7	59.6	59.1	58.7	64.3	0.0	64.3
	9	63.5	72.0	57.2	71.5	70.6	68.5	67.2	63.9	61.6	58.3	57.7	57.3	63.5	0.0	63.5
	10	62.6	70.0	56.5	69.6	69.0	67.5	66.3	63.2	60.8	57.7	57.0	56.6	62.6	0.0	62.6
	11	63.7	71.3	57.2	70.8	70.3	69.0	68.0	64.2	61.6	58.5	57.8	57.3	63.7	0.0	63.7
	12	63.6	71.2	56.9	70.7	70.1	68.7	67.6	64.4	61.6	58.2	57.6	57.0	63.6	0.0	63.6
	13	63.0	70.5	56.8	70.0	69.3	67.9	67.1	63.6	61.2	58.0	57.5	56.9	63.0	0.0	63.0
	14	64.3	71.9	58.7	71.4	70.7	69.2	68.1	64.9	62.5	59.7	59.2	58.9	64.3	0.0	64.3
	15	64.8	71.4	59.7	70.9	70.4	69.4	68.5	65.5	63.3	60.6	60.2	59.8	64.8	0.0	64.8
	16	65.4	71.7	60.9	71.4	71.0	69.7	68.9	66.0	64.2	61.8	61.4	61.0	65.4	0.0	65.4
	17	65.6	72.4	60.7	72.0	71.5	70.0	69.1	66.1	64.2	61.5	61.2	60.8	65.6	0.0	65.6
	18	64.8	72.4	60.2	72.0	71.1	69.3	68.0	65.1	63.2	61.0	60.6	60.3	64.8	0.0	64.8
	19	64.6	72.2	59.6	71.8	71.2	69.7	68.4	64.9	62.9	60.6	60.2	59.7	64.6	5.0	69.6
	20	64.4	73.1	58.9	72.4	71.6	69.8	68.6	64.1	62.1	59.9	59.5	59.0	64.4	5.0	69.4
	21	63.2	70.5	58.5	70.2	69.7	68.0	66.8	63.4	61.5	59.3	59.0	58.6	63.2	5.0	68.2
Night	22	62.5	70.8	57.4	70.3	69.6	67.9	66.3	62.4	60.3	58.2	57.9	57.5	62.5	10.0	72.5
	23	62.2	70.8	56.9	70.5	69.8	67.7	66.8	61.8	59.8	57.8	57.4	57.0	62.2	10.0	72.2

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	62.6	70.0	56.5	69.6	69.0	67.5	66.3	63.2	60.8	57.7	57.0	56.6
	Max	65.6	73.6	60.9	73.3	72.9	71.2	69.4	66.1	64.2	61.8	61.4	61.0
Energy Average		64.3	Average:		71.2	70.6	69.1	68.0	64.6	62.4	59.6	59.1	58.7
Night	Min	59.4	68.7	52.5	67.9	67.0	65.3	64.0	59.4	55.9	53.3	52.9	52.6
	Max	65.1	72.9	59.3	72.3	71.8	70.1	68.8	65.4	63.4	60.4	59.9	59.4
Energy Average		62.7	Average:		70.6	69.9	68.1	66.8	62.3	59.5	56.6	56.2	55.8

24-Hour CNEL	*Leq (dBA) Daytime (7am-10pm)*	*Leq (dBA) Nighttime (10pm-7am)*
69.7	**64.3**	**62.7**

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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Wineville Rd.
Road Segment: n/o Riverside Dr.

Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,741 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	574 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	60.74%
Medium Trucks:	77.9%	5.2%	16.9%	2.68%
Heavy Trucks:	56.8%	10.1%	33.1%	36.58%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.87	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.42	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.07	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.2	59.7	56.7	56.7	63.6	63.8
Medium Trucks:	59.5	57.6	51.9	52.2	59.7	59.9
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.5	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	191	412	888	1,914
CNEL:	198	427	921	1,983

Tuesday, March 7, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E+P
Road Name: Wineville Rd.
Road Segment: n/o Riverside Dr.

Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,949 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	595 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	62.04%
Medium Trucks:	77.9%	5.2%	16.9%	2.60%
Heavy Trucks:	56.8%	10.1%	33.1%	35.36%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.62	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.40	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.07	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.5	59.9	57.0	56.9	63.8	64.0
Medium Trucks:	59.5	57.6	51.9	52.3	59.7	59.9
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.6	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	192	413	891	1,919
CNEL:	199	428	923	1,988

Tuesday, March 7, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Wineville Rd.
Road Segment: s/o Riverside Dr.

Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,741 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	574 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	60.74%
Medium Trucks:	77.9%	5.2%	16.9%	2.68%
Heavy Trucks:	56.8%	10.1%	33.1%	36.58%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.87	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.42	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.07	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.2	59.7	56.7	56.7	63.6	63.8
Medium Trucks:	59.5	57.6	51.9	52.2	59.7	59.9
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.5	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	191	412	888	1,914
CNEL:	198	427	921	1,983

Tuesday, March 7, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E+P
Road Name: Wineville Rd.
Road Segment: s/o Riverside Dr.

Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,945 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	594 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	62.08%
Medium Trucks:	77.9%	5.2%	16.9%	2.59%
Heavy Trucks:	56.8%	10.1%	33.1%	35.33%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.62	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.42	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.07	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.5	59.9	57.0	56.9	63.8	64.0
Medium Trucks:	59.5	57.6	51.9	52.2	59.7	59.9
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.6	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	192	413	890	1,917
CNEL:	199	428	922	1,986

Tuesday, March 7, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Riverside Dr.
Road Segment: w/o Wineville Rd.
Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,741 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	574 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	60.74%
Medium Trucks:	77.9%	5.2%	16.9%	2.68%
Heavy Trucks:	56.8%	10.1%	33.1%	36.58%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.87	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.42	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.07	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.2	59.7	56.7	56.7	63.6	63.8
Medium Trucks:	59.5	57.6	51.9	52.2	59.7	59.9
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.5	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	191	412	888	1,914
CNEL:	198	427	921	1,983

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E+P
Road Name: Riverside Dr.
Road Segment: w/o Wineville Rd.
Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,365 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	636 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	64.38%
Medium Trucks:	77.9%	5.2%	16.9%	2.46%
Heavy Trucks:	56.8%	10.1%	33.1%	33.16%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.17	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.35	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.05	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.9	60.4	57.4	57.4	64.3	64.5
Medium Trucks:	59.6	57.7	52.0	52.3	59.8	60.0
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.6	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	193	416	895	1,929
CNEL:	200	431	928	1,999

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Riverside Dr.
Road Segment: e/o Wineville Rd.
Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,741 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	574 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	60.74%
Medium Trucks:	77.9%	5.2%	16.9%	2.68%
Heavy Trucks:	56.8%	10.1%	33.1%	36.58%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.87	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.42	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.07	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.2	59.7	56.7	56.7	63.6	63.8
Medium Trucks:	59.5	57.6	51.9	52.2	59.7	59.9
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.5	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	191	412	888	1,914
CNEL:	198	427	921	1,983

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E+P
Road Name: Riverside Dr.
Road Segment: e/o Wineville Rd.
Project Name: Industrial Outdoor Venture
Job Number: 15021

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	5,954 vehicles
Peak Hour Percentage:	10.00%
Peak Hour Volume:	595 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	68 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	59.0 feet
Centerline Dist. to Observer:	59.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
Pad Elevation:	0.0 feet
Road Elevation:	0.0 feet
Road Grade:	0.0%
Left View:	-90.0 degrees
Right View:	90.0 degrees

NOISE MODEL INPUTS

Site Conditions (Hard = 10, Soft = 15)

Autos:	15
Medium Trucks (2 Axles):	15
Heavy Trucks (3+ Axles):	15

Vehicle Mix

VehicleType	*Day*	*Evening*	*Night*	*Daily*
Autos:	66.5%	8.5%	25.0%	61.99%
Medium Trucks:	77.9%	5.2%	16.9%	2.62%
Heavy Trucks:	56.8%	10.1%	33.1%	35.39%

Noise Source Elevations (in feet)

Autos:	0.000		
Medium Trucks:	2.297		
Heavy Trucks:	8.004	*Grade Adjustment:*	0.0

Lane Equivalent Distance (in feet)

Autos:	48.477
Medium Trucks:	48.294
Heavy Trucks:	48.312

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	70.20	-6.62	0.10	-1.20	*-4.69*	0.000	0.000
Medium Trucks:	81.00	-20.37	0.12	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	85.38	-9.06	0.12	-1.20	*-5.35*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	62.5	59.9	57.0	56.9	63.8	64.0
Medium Trucks:	59.6	57.7	51.9	52.3	59.8	60.0
Heavy Trucks:	75.2	72.0	70.5	70.9	77.4	77.7
Vehicle Noise:	75.6	72.4	70.8	71.1	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	192	414	892	1,921
CNEL:	199	429	924	1,991

APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS

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15021 - Outdoor Industrial Ventures

CadnaA Noise Prediction Model: 15021-02.cna
Date: 09.03.23
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	**Value**
General	
Max. Error (dB)	**0.00**
Max. Search Radius (#(Unit,LEN))	**2000.01**
Min. Dist Src to Rcvr	**0.00**
Partition	
Raster Factor	**0.50**
Max. Length of Section (#(Unit,LEN))	**999.99**
Min. Length of Section (#(Unit,LEN))	**1.01**
Min. Length of Section (%)	**0.00**
Proj. Line Sources	**On**
Proj. Area Sources	**On**
Ref. Time	
Reference Time Day (min)	**960.00**
Reference Time Night (min)	**480.00**
Daytime Penalty (dB)	**0.00**
Recr. Time Penalty (dB)	**5.00**
Night-time Penalty (dB)	**10.00**
DTM	
Standard Height (m)	**0.00**
Model of Terrain	**Triangulation**
Reflection	
max. Order of Reflection	**2**
Search Radius Src	**100.00**
Search Radius Rcvr	**100.00**
Max. Distance Source - Rcvr	**1000.00 1000.00**
Min. Distance Rvcr - Reflector	**1.00 1.00**
Min. Distance Source - Reflector	**0.10**
Industrial (ISO 9613)	
Lateral Diffraction	**some Obj**
Obst. within Area Src do not shield	**On**
Screening	**Incl. Ground Att. over Barrier**
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	**3.0 20.0 0.0**
Temperature (#(Unit,TEMP))	**10**
rel. Humidity (%)	**70**
Ground Absorption G	**0.50**
Wind Speed for Dir. (#(Unit,SPEED))	**3.0**
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	40.9	40.9	47.5	65.0	45.0	0.0				5.00	a	6163860.04	2317010.62	5.00
RECEIVERS		R2	38.6	38.6	45.3	65.0	45.0	0.0				5.00	a	6170218.92	2311394.58	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6168708.61	2316909.61	35.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6168799.96	2316909.61	35.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6168801.98	2316954.02	35.00
POINTSOURCE		CAR01	81.1	81.1	81.1	Lw	81.1					5.00	a	6168796.79	2317068.55	5.00
POINTSOURCE		CAR02	81.1	81.1	81.1	Lw	81.1					5.00	a	6168763.45	2317076.19	5.00
POINTSOURCE		CAR03	81.1	81.1	81.1	Lw	81.1					5.00	a	6168728.04	2317083.82	5.00
POINTSOURCE		CAR04	81.1	81.1	81.1	Lw	81.1					5.00	a	6168691.23	2317089.38	5.00
POINTSOURCE		CAR05	81.1	81.1	81.1	Lw	81.1					5.00	a	6168655.81	2317091.46	5.00
POINTSOURCE		CAR06	81.1	81.1	81.1	Lw	81.1					5.00	a	6169017.97	2316839.47	5.00
POINTSOURCE		CAR07	81.1	81.1	81.1	Lw	81.1					5.00	a	6168980.12	2316840.98	5.00
POINTSOURCE		CAR08	81.1	81.1	81.1	Lw	81.1					5.00	a	6168943.28	2316843.00	5.00
POINTSOURCE		CAR09	81.1	81.1	81.1	Lw	81.1					5.00	a	6168903.41	2316843.50	5.00
POINTSOURCE		CAR10	81.1	81.1	81.1	Lw	81.1					5.00	a	6168833.77	2316898.01	5.00
POINTSOURCE		CAR11	81.1	81.1	81.1	Lw	81.1					5.00	a	6168833.26	2316922.23	5.00
POINTSOURCE		CAR12	81.1	81.1	81.1	Lw	81.1					5.00	a	6168834.78	2316952.00	5.00
POINTSOURCE		CAR13	81.1	81.1	81.1	Lw	81.1					5.00	a	6168654.62	2316916.68	5.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		CAR14	81.1	81.1	81.1	Lw	81.1					5.00	a	6168619.29	2316916.17	5.00
POINTSOURCE		CAR15	81.1	81.1	81.1	Lw	81.1					5.00	a	6168585.98	2316918.19	5.00
POINTSOURCE		CAR16	81.1	81.1	81.1	Lw	81.1					5.00	a	6168790.87	2316847.04	5.00
POINTSOURCE		CAR17	81.1	81.1	81.1	Lw	81.1					5.00	a	6168756.05	2316849.06	5.00
POINTSOURCE		CAR18	81.1	81.1	81.1	Lw	81.1					5.00	a	6168717.70	2316849.56	5.00
POINTSOURCE		CAR19	81.1	81.1	81.1	Lw	81.1					5.00	a	6168666.22	2316850.57	5.00
POINTSOURCE		CAR20	81.1	81.1	81.1	Lw	81.1					5.00	a	6168629.89	2316850.06	5.00
POINTSOURCE		CAR21	81.1	81.1	81.1	Lw	81.1					5.00	a	6168597.59	2316851.58	5.00
POINTSOURCE		CAR22	81.1	81.1	81.1	Lw	81.1					5.00	a	6168547.63	2316852.08	5.00
POINTSOURCE		CAR23	81.1	81.1	81.1	Lw	81.1					5.00	a	6168513.82	2316853.60	5.00
POINTSOURCE		CAR24	81.1	81.1	81.1	Lw	81.1					5.00	a	6168481.02	2316854.10	5.00
POINTSOURCE		CAR25	81.1	81.1	81.1	Lw	81.1					5.00	a	6168439.13	2316855.11	5.00
POINTSOURCE		CAR26	81.1	81.1	81.1	Lw	81.1					5.00	a	6168404.31	2316857.13	5.00
POINTSOURCE		CAR27	81.1	81.1	81.1	Lw	81.1					5.00	a	6168371.00	2316857.13	5.00
POINTSOURCE		CAR28	81.1	81.1	81.1	Lw	81.1					5.00	a	6168333.15	2316857.63	5.00
POINTSOURCE		DOCK01	111.5	111.5	111.5	Lw	111.5					8.00	a	6168514.83	2316991.37	8.00
POINTSOURCE		DOCK02	111.5	111.5	111.5	Lw	111.5					8.00	a	6168799.45	2316985.82	8.00
POINTSOURCE		DOCK03	111.5	111.5	111.5	Lw	111.5					8.00	a	6168542.58	2316917.69	8.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6168838.31	2317056.47	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE		DOCK11	111.5	111.5	111.5	78.9	78.9	78.9	Lw	111.5					8	a
AREASOURCE		DOCK12	111.5	111.5	111.5	75.1	75.1	75.1	Lw	111.5					8	a
AREASOURCE		DOC13	111.5	111.5	111.5	85.2	85.2	85.2	Lw	111.5					8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	DOCK11	8.00	a			6168316.93	2316933.82	8.00	0.00
						6168340.16	2316956.30	8.00	0.00
						6168364.98	2316977.00	8.00	0.00
						6168391.25	2316995.83	8.00	0.00
						6168418.84	2317012.68	8.00	0.00
						6168447.59	2317027.45	8.00	0.00
						6168477.34	2317040.07	8.00	0.00
						6168494.70	2317040.07	8.00	0.00
						6168489.84	2316885.91	8.00	0.00
						6168314.84	2316890.77	8.00	0.00
AREASOURCE	DOCK12	8.00	a			6168882.90	2317016.46	8.00	0.00
						6168951.65	2317016.46	8.00	0.00
						6169306.51	2316935.21	8.00	0.00
						6169305.81	2316867.85	8.00	0.00
						6168880.81	2316878.27	8.00	0.00
AREASOURCE	DOC13	8.00	a			6169040.54	2316849.10	8.00	0.00
						6169275.26	2316842.85	8.00	0.00
						6169276.65	2316824.10	8.00	0.00
						6169040.54	2316828.96	8.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00001	x	0		30.00	a	6168533.50	2317035.27	30.00	0.00
									6168783.30	2317029.22	30.00	0.00
									6168781.79	2316965.13	30.00	0.00
									6168818.12	2316963.61	30.00	0.00
									6168816.61	2316891.95	30.00	0.00
									6168696.50	2316895.99	30.00	0.00
									6168697.01	2316932.32	30.00	0.00
									6168529.97	2316936.87	30.00	0.00

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS

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15021 - Outdoor Industrial Ventures

CadnaA Noise Prediction Model: 15021-02_Construction.cna
Date: 09.03.23
Analyst: B. Lawson

Calculation Configuration

Configuration	
Parameter	**Value**
General	
Max. Error (dB)	**0.00**
Max. Search Radius (#(Unit,LEN))	**2000.01**
Min. Dist Src to Rcvr	**0.00**
Partition	
Raster Factor	**0.50**
Max. Length of Section (#(Unit,LEN))	**999.99**
Min. Length of Section (#(Unit,LEN))	**1.01**
Min. Length of Section (%)	**0.00**
Proj. Line Sources	**On**
Proj. Area Sources	**On**
Ref. Time	
Reference Time Day (min)	**960.00**
Reference Time Night (min)	**480.00**
Daytime Penalty (dB)	**0.00**
Recr. Time Penalty (dB)	**5.00**
Night-time Penalty (dB)	**10.00**
DTM	
Standard Height (m)	**0.00**
Model of Terrain	**Triangulation**
Reflection	
max. Order of Reflection	**2**
Search Radius Src	**100.00**
Search Radius Rcvr	**100.00**
Max. Distance Source - Rcvr	**1000.00 1000.00**
Min. Distance Rvcr - Reflector	**1.00 1.00**
Min. Distance Source - Reflector	**0.10**
Industrial (ISO 9613)	
Lateral Diffraction	**some Obj**
Obst. within Area Src do not shield	**On**
Screening	**Incl. Ground Att. over Barrier**
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	**3.0 20.0 0.0**
Temperature (#(Unit,TEMP))	**10**
rel. Humidity (%)	**70**
Ground Absorption G	**0.50**
Wind Speed for Dir. (#(Unit,SPEED))	**3.0**
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	37.4	37.4	44.1	65.0	45.0	0.0				5.00	a	6163860.04	2317010.62	5.00
RECEIVERS		R2	35.9	35.9	42.6	65.0	45.0	0.0				5.00	a	6170218.92	2311394.58	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
SITEBOUNDARY		CONSTRUCTION	115.0	115.0	115.0	70.5	70.5	70.5	Lw	115					8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	a			6168194.58	2316830.97	8.00	0.00
						6168212.63	2316863.03	8.00	0.00
						6168232.90	2316893.73	8.00	0.00
						6168255.30	2316922.92	8.00	0.00
						6168279.72	2316950.44	8.00	0.00
						6168306.03	2316976.16	8.00	0.00
						6168334.09	2316999.95	8.00	0.00
						6168363.77	2317021.68	8.00	0.00
						6168394.92	2317041.26	8.00	0.00
						6168427.38	2317058.58	8.00	0.00
						6168460.99	2317073.55	8.00	0.00

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6168495.58	2317086.10	8.00	0.00
				6168530.96	2317096.16	8.00	0.00
				6168567.52	2317102.48	8.00	0.00
				6168604.39	2317106.58	8.00	0.00
				6168641.44	2317108.42	8.00	0.00
				6168678.54	2317108.02	8.00	0.00
				6168715.54	2317105.36	8.00	0.00
				6168752.31	2317100.46	8.00	0.00
				6168788.72	2317093.34	8.00	0.00
				6168824.63	2317084.02	8.00	0.00
				6168859.90	2317072.54	8.00	0.00
				6169687.97	2316887.80	8.00	0.00
				6169684.61	2316788.95	8.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	Coordinates			
							Begin	x	y	z	Ground
							(ft)	(ft)	(ft)	(ft)	(ft)