

# Birtcher Logistics Center Rialto (MC2020-0031)

# NOISE IMPACT ANALYSIS CITY OF RIALTO

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13681-08 Noise Study

Birtcher Logistics Center Rialto Noise Impact Analysis



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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 <sub>eq</sub>	Equivalent continuous (average) sound level
L <sub>max</sub>	Maximum level measured over the time interval
L <sub>min</sub>	Minimum level measured over the time interval
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Birtcher Logistics Center Rialto
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 Birtcher Logistics Center Rialto development ("Project"). The Project is proposed to consist of a single 492,410 square foot warehouse building. This study has been prepared to satisfy applicable City of Rialto 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 Birtcher Logistics Center Rialto Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report. 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.

Analysia	Report	rt Significance Findings		
Analysis	Section	Unmitigated	Mitigated	
Off-Site Traffic Noise	7	Less Than Significant	-	
Operational Noise	9	Less Than Significant	-	
Construction Noise		Less Than Significant	-	
Construction Vibration		Less Than Significant	-	
Concrete Crushing Noise	10	Less Than Significant	-	
Concrete Crushing Vibration		Less Than Significant	-	
Concrete Pour Noise		Less Than Significant	-	

#### TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

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# 1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of Birtcher Logistics Center Rialto ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents 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 and vibration impacts.

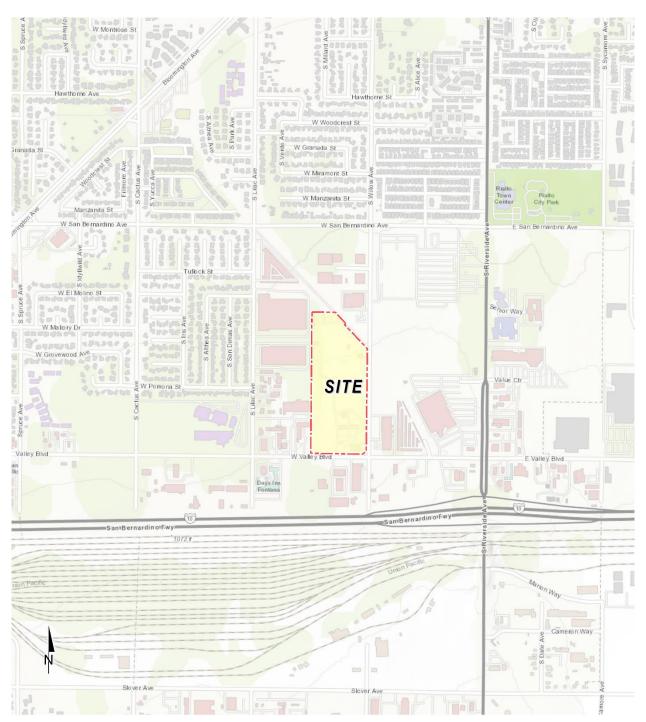
## **1.1** SITE LOCATION

The Birtcher Logistics Center Rialto Project is located at the northwest corner of Valley Boulevard and Willow Avenue in the City of Rialto, as shown on Exhibit 1-A. The nearest sensitive residential land use is located west of the project site.

#### **1.2 PROJECT DESCRIPTION**

The Project is proposed to consist of a single 492,410 square foot warehouse building. It is anticipated that the Project would be developed in a single phase with an anticipated Opening Year of 2023. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, parking lot vehicle movements, trash enclosure activity, and truck movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.

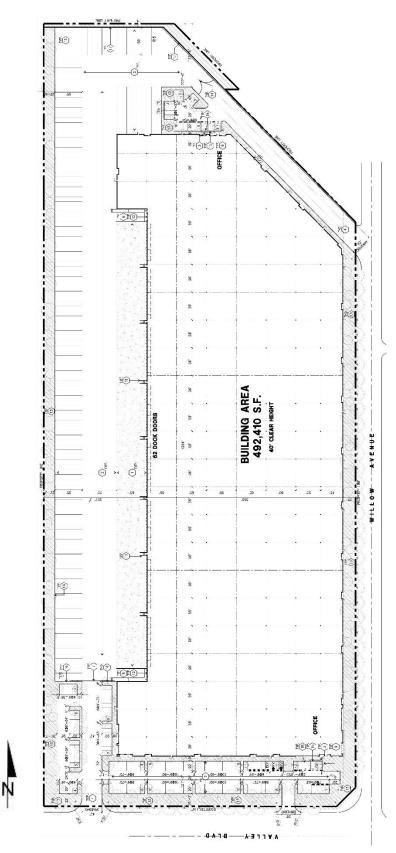




#### **EXHIBIT 1-A: LOCATION MAP**



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.

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

#### EXHIBIT 2-A: TYPICAL NOISE LEVELS

## 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 100 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 figure 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 (typically one hour) and is commonly used to describe the "average" noise levels within the environment.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors  $L_{50}$ ,  $L_{25}$ ,  $L_8$  and  $L_2$ , are commonly used. The percentile noise descriptors are the noise levels equaled or exceeded during 50 percent, 25 percent, 8 percent and 2 percent of a stated time. Sound levels associated with the  $L_2$  and  $L_8$  typically describe transient or short-term events, while levels associated with the  $L_{50}$  describe the steady state (or median) noise conditions. The relies on the percentile noise levels to describe the stationary source noise level limits. While the  $L_{50}$  describes the noise levels occurring 50 percent of the time, the  $L_{eq}$  accounts for the total energy (average) observed for the entire hour.

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<sub>eq</sub> sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L<sub>eq</sub> 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 sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Rialto 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 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 nearest 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. (4)

#### 2.3.5 REFLECTION

Field studies conducted by the FHWA have shown that the reflection from barriers and buildings does not substantially increase noise levels. (4) If all the noise striking a structure was reflected back to a given receiving point, the increase would be theoretically limited to 3 dBA. Further, not all the acoustical energy is reflected back to same point. Some of the energy would go over the structure, some is reflected to points other than the given receiving point, some is scattered by ground coverings (e.g., grass and other plants), and some is blocked by intervening structures and/or obstacles (e.g., the noise source itself). Additionally, some of the reflected energy is lost due to the longer path that the noise must travel. FHWA measurements made to quantify



reflective increases in traffic noise have not shown an increase of greater than 1-2 dBA; an increase that is not perceptible to the average human ear.

## 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 up to 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 be high enough and long enough to block the path of the noise source. (4)

## 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. (5)

## 2.7 COMMUNITY RESPONSE TO NOISE

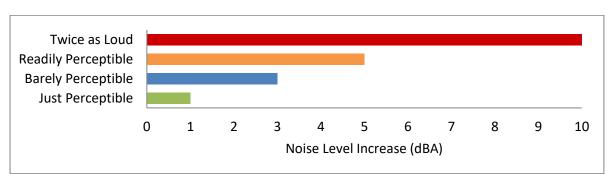
Community responses to noise may range from registering a complaint by telephone or letter, to initiating court action, depending upon everyone's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

- Fear associated with noise producing activities;
- Socio-economic status and educational level;
- Perception that those affected are being unfairly treated;
- Attitudes regarding the usefulness of the noise-producing activity;
- Belief that the noise source can be controlled.

Approximately ten 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 will occur. Twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (6) Surveys have shown that about ten percent of the people exposed to



traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (6) 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)





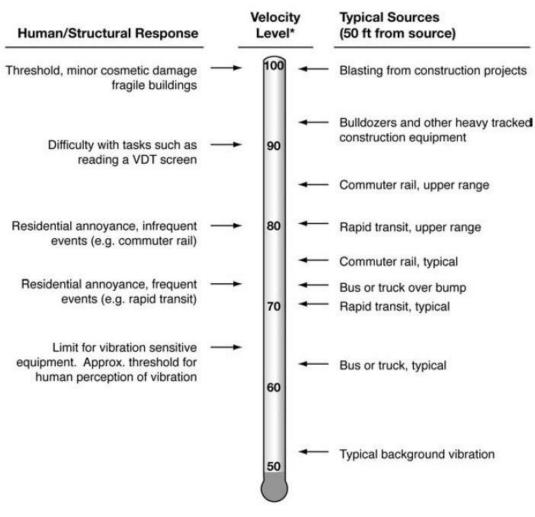
## 2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (7), 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<sup>-6</sup> 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). (8) The purpose of the Noise and safety 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 RIALTO GENERAL PLAN SAFETY & NOISE ELEMENT

The City of Rialto *General Plan Safety* & *Noise Element* establishes policies to guard against the creation of any new noise and land use conflicts, and to minimize the impact of existing noise sources on the community. (9) The *Noise Element* does not contain specific transportation-related noise standards, however, it does provide land use compatibility guidelines for future development and the future noise contour boundaries for major roadways in the City of Rialto.

#### LAND USE COMPATIBILITY

The noise criteria identified in the City of Rialto Safety & Noise Element (Exhibit 5.5) are guidelines to evaluate the land use compatibility of transportation-related noise. The compatibility criteria, shown on Exhibit 3-A, provides the City of Rialto with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels.

The *Rialto Noise Guidelines for Land Use Planning* matrix indicates that industrial land uses, such as the Project site, are considered *normally acceptable* with exterior noise levels below 70 dBA CNEL, and *conditionally acceptable* with noise levels below 75 dBA CNEL. Noise-sensitive residential land uses are considered *normally acceptable* with exterior noise levels below 60 dBA CNEL, and *conditionally acceptable* with noise levels below 65 dBA CNEL. For *conditionally acceptable* with noise levels below 65 dBA CNEL. For *conditionally acceptable* land uses, *new development should be undertaken only after detailed analysis of noise reduction requirements are made.* (9)



Land Use Category		Community Noise	e Equivalent 70	Level (CNEL)	<b>, dB</b> 80	OE
R2 - Residential 2, R6 - Residential 6			70	75	80	85
R12 - Residential 12						
R21 - Residential 21, R45 - Residential 45						
DMU - Downtown Mixed-Use						
CC - Community Commercial						
GC - General Commercial						
BP - Business Park, O - Office						
LI - Light Industrial						
GI - General Industrial						
P - Public Facility, P - School Facility						
OSRC Open Space - Recreation						
OSRS - Open Space - Resources						
Normally Acceptable	Conditionally Acceptable	Normally Una	acceptable	Clearly Unac	cceptable	
Specified land use is satisfactory, assuming buildings are of conventional construction	New development should be undertaken only after detailed analysis of noise reduction requirement are made.	New develop should be ger discouraged, detailed analy s noise reductio requirements made.	nerally if not, a ysis of on	New develog should gene undertaken		

#### EXHIBIT 3-A: RIALTO NOISE GUIDELINES FOR LAND USE PLANNING

Source: City of Rialto General Plan Safety & Noise Element, Exhibit 5.5.

## **3.3** OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Birtcher Logistics Center Rialto Project, stationary-source (operational) noise such as the expected loading dock activity, roof-top air conditioning units, parking lot vehicle movements, trash enclosure activity, and truck movements are typically evaluated against standards established under a jurisdiction's Municipal Code. Section 9.50.050[B] of the City Rialto Municipal Code included in Appendix 3.2 restricts loading/unloading, the use of dollies, carts, forklifts, or wheeled equipment that causes any unnecessary noise within one thousand feet of a residence between the hours of 8:00 p.m. and 7:00 a.m. However, the City of Rialto Municipal Code does not identify specific exterior noise level standards. (10) Therefore, the County of San Bernardino Development Code standards are used in this noise study to assess the potential impacts at adjacent sensitive receiver locations consistent with Section 9.50.050[B] of the City Rialto Municipal Code. The operational noise level standards used in this noise study are summarized on Table 3-1.

The San Bernardino County Code, Title 8 Development Code, Section 83.01.080(c) establishes the noise level standards for stationary noise sources. Since the Project's industrial land use will potentially impact adjacent noise-sensitive uses in the Project study area, this noise study relies on the more conservative residential noise level standards to describe potential operational noise impacts. For residential properties, the exterior noise level shall not exceed 55 dBA L<sub>eq</sub> during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA L<sub>eq</sub> during the nighttime hours (10:00 p.m.) for both the whole hour, and for not more than 30 minutes in any hour. (11)

The exterior noise level standards shall apply for a cumulative period of 30 minutes in any hour, as well as the standard plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time. Further, Section 83.01.080(e) indicates that if the existing ambient noise level already exceeds any of the exterior noise level limit categories, then the standard shall be adjusted to reflect the ambient conditions. The County of San Bernardino operational noise level standards are shown on Table 3-1 and included in Appendix 3.1.

		Exterior Noi	se Level Stand	dards (dBA) <sup>1</sup>	
Time Period	L <sub>50</sub> (30 mins)	L <sub>25</sub> (15 mins)	L <sub>8</sub> (5 mins)	L <sub>2</sub> (1 min)	L <sub>max</sub> (Anytime)
Daytime (7:00 a.m. to 10:00 p.m.)	55	60	65	70	75
Nighttime (10:00 p.m. to 7:00 a.m.)	45	50	55	60	65

TABLE 3-1: OPERATIONAL NOISE LEVEL STANDARDS

<sup>1</sup> County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1). The percent noise level is the level exceeded "n" percent of the time during the measurement period. L<sub>50</sub> is the noise level exceeded 50% of the time.



The percentile noise descriptors are provided to ensure that the duration of the noise source is fully considered. However, due to the relatively constant intensity of the Project operational activities, the  $L_{50}$  or average  $L_{eq}$  noise level metrics best describe the loading dock activity, roof-top air conditioning units, parking lot vehicle movements, trash enclosure activity, and truck movements. In addition, the  $L_{eq}$  noise level metric accounts for noise fluctuations over time by averaging the louder and quieter events and giving more weight to the louder events. In addition, due to the mathematical relationship between the median ( $L_{50}$ ) and the mean ( $L_{eq}$ ), the  $L_{eq}$  will always be larger than or equal to the  $L_{50}$ . The more variable the noise becomes, the larger the  $L_{eq}$  becomes in comparison to the  $L_{50}$ . Therefore, this noise study conservatively relies on the average  $L_{eq}$  sound level limits to describe the Project operational noise levels.

#### **3.4 CONSTRUCTION NOISE STANDARDS**

Section 9.50.050[F] of the City Rialto Municipal Code included in Appendix 3.2 restricts the use pile driver, steam or gasoline shovel, pneumatic hammer, steam or electric hoist or other similar devices and 9.50.050[G] electrically operated compressor, fan or other similar devices between the hours of 8:00 p.m. and 7:00 a.m. In addition, , Section 9.50.070 of the City of Rialto Municipal Code, states that construction activities are permitted between the hours of 7:00 a.m. to 5:30 p.m. Monday through Friday from October 1<sup>st</sup> to April 30<sup>th</sup>, 6:00 a.m. to 7:00 p.m. Monday through Friday from May 1<sup>st</sup> to September 30<sup>th</sup>, and 8:00 a.m. to 5:00 p.m. on Saturdays any time of year; with no activity allowed on Sundays or state holidays. (10) While the City establishes limits to the hours during which construction activity may take place, neither the City of Rialto or County of San Bernardino General Plans or Municipal Codes establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* is used for analysis of daytime construction impacts, as discussed below.

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 residential land use with a nighttime exterior construction noise level of 70 dBA  $L_{eq}$ . (7 p. 179)



#### **3.5 CONSTRUCTION VIBRATION STANDARDS**

To analyze vibration impacts originating from the operation and construction of the Birtcher Logistics Center Rialto, vibration-generating activities are typically evaluated against standards established under a jurisdiction's Municipal Code. Since the City of Rialto Municipal Code does not identify specific vibration level standards, the County Development Code vibration level standards are used in this analysis to assess potential impacts at nearby sensitive receiver locations.

The County Development Code, Section 83.01.090(a) states that vibration shall be no *greater than or equal to two-tenths inches per second measured at or beyond the lot line*. (11) Therefore, to determine if the vibration levels due to the operation and construction of the Project, the peak particle velocity (PPV) vibration level standard of 0.2 inches per second (in/sec) is used.



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# 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. (8) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

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

While the City of Rialto General Plan Guidelines provide direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts, they do not define the levels at which increases are considered substantial for use under Guideline A. CEQA Appendix G Guideline C applies to nearby public and private airports, if any, and the Project's land use compatibility.

## 4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is not located within two miles of a public airport or within an airport land use plan. The closest airport is the San Bernardino International Airport located roughly 6.6 miles northeast of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to CEQA Appendix G Guideline C.

## 4.2 NOISE-SENSITIVE NOISE LEVEL INCREASES

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. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (12)

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (13) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L<sub>eq</sub>).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (12) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance.

The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (14 p. 2\_48).

## 4.3 NON-NOISE-SENSITIVE NOISE LEVEL INCREASES

The City of Rialto General Plan Safety & Noise Element, Exhibit 5.5, *Noise Compatibility Guidelines* was used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, non-noise-sensitive land uses such as office, commercial, and industrial uses with exterior noise levels approaching 70 dBA CNEL are considered *normally acceptable* per the City of Rialto exterior transportation-related noise level criteria. To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a *readily perceptible* 5 dBA and *barely perceptible* 3 dBA criteria were used. When the without Project noise levels at the non-noise-sensitive land uses are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a *readily perceptible* 5 dBA or greater noise level increase is considered a significant impact. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact.



level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses rely on the City of Rialto General Plan Safety & Noise Element, Exhibit 5.5 *normally acceptable* 70 dBA CNEL exterior noise level criteria.

#### 4.3 SIGNIFICANCE CRITERIA SUMMARY

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

			Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase		
	Noise- Sensitive <sup>1</sup>	if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase		
Off-Site		if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase		
	Non-Noise Sensitive <sup>1,2</sup>	if ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase		
		if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase		
	Residential	Exterior Noise Level Limit <sup>3</sup>	55 dBA L <sub>eq</sub>	45 dBA L <sub>eq</sub>	
Operational		if ambient is < 60 dBA L <sub>eq</sub>	≥ 5 dBA L <sub>eq</sub> Project increase		
Operational	Noise- Sensitive <sup>1</sup>	if ambient is 60 - 65 dBA L <sub>eq</sub>	≥ 3 dBA L <sub>eq</sub> Project increase		
		if ambient is > 65 dBA L <sub>eq</sub>	≥ 1.5 dBA L <sub>eq</sub> Project increase		
Construction	Noise-	Noise Level Threshold <sup>4</sup>	80 dBA L <sub>eq</sub>	70 dBA L <sub>eq</sub>	
Construction	Sensitive	Vibration Level Threshold <sup>5</sup>	0.2 PPV in/sec n/a		

#### TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

<sup>1</sup> FICON, 1992.

2 The City of Rialto General Plan Safety & Noise Element, Exhibit 5.5.

<sup>3</sup> County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1)

<sup>4</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

 $^{\scriptscriptstyle 5}$  Section 83.01.090(a) of the County of San Bernardino County Code.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m. "n/a" = construction activities are not planned during the nighttime hours; "PPV" = peak particle velocity.



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# 5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at four 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, June 9<sup>th</sup>, 2021. 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 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. (15)

## 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, that 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. (7)* 

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. (7) 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 average or equivalent 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.

Location <sup>1</sup>	Description	Energy Average Noise Level (dBA L <sub>eq</sub> ) <sup>2</sup>		
		Daytime	Nighttime	
L1	North of the Project site on West Tullock Street L1 near the House of Hope Church located at 327 West Tullock Street.		53.4	
L2	East of the Project site on Senior Way near the Rialto Senior Center located at 1401 South Riverside Avenue.	60.7	57.2	
L3	West of the Project site on Lilac Avenue near Joe Baca Middle School located at 1640 South Lilac Avenue.	61.6	59.5	
L4	West of the Project site on Lilac Avenue near a single-family residence located at 1480 South Lilac Avenue.	60.6	56.6	

 TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

 $^{\rm 1}$  See Exhibit 5-A for the noise level measurement locations.

<sup>2</sup> 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 (energy average) 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<sub>1</sub>, L<sub>2</sub>, L<sub>5</sub>, L<sub>8</sub>, L<sub>25</sub>, L<sub>50</sub>, L<sub>90</sub>, L<sub>95</sub>, and L<sub>99</sub> percentile noise levels observed during the daytime and nighttime periods.





#### **EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS**

LEGEND: N 🔺 Measurement Locations



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# 6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with City of Rialto Noise Guidelines for Land Use Planning (see Exhibit 3-A), all transportation related noise levels are presented in terms of the 24-hour CNEL's.

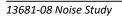
## 6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

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. (16) 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. (17) 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. (18)

#### 6.1.1 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the five off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Rialto General Plan Circulation Element, and the posted vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on *Birtcher Logistics Center Rialto Traffic Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios. (19)

- Existing 2021 Traffic Conditions
- Existing Plus Project Traffic Conditions
- Existing Plus Ambient Growth (EA) 2023 Traffic Conditions
- Existing Plus Ambient Growth (EAP) 2023 Plus Project Traffic Conditions
- Existing Plus Ambient Growth Plus Cumulative (EAC) 2023 Traffic Conditions
- Existing Plus Ambient Growth Plus Cumulative (EAPC) 2023 Plus Project Traffic Conditions
- Horizon Year (HY) 2040 Traffic Conditions
- Horizon Year Plus Project (HYP) 2040 Traffic Conditions





The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent land use, without and with project ADT traffic volumes from the Project traffic study.

ID	Roadway	Segment	Receiving Land Use <sup>1</sup>	Distance from Centerline to Receiving Land Use (Feet) <sup>2</sup>	Vehicle Speed (mph) <sup>3</sup>
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	32'	40
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	60'	40
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	60'	40
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	60'	40
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	60'	40

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> Distance to receiving land use is based upon the right-of-way distances.

<sup>3</sup> Birtcher Logistics Center Rialto (MC2020-0031) Traffic Analysis, 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 *Traffic Analysis*. 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 all without Project traffic scenarios, and Tables 6-5 to 6-8 show the vehicle mixes used for the with Project traffic scenarios.



ID	Roadway	Segment	Average Daily Traffic Volumes <sup>1</sup>								
			Existing		Existing Plus Ambient Growth		Existing Plus Ambient Growth Plus Cumulative		Horizon Year		
			Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project	
1	Willow Av.	n/o Valley Bl.	4,523	4,995	4,706	5,177	6,320	6,791	6,952	7,423	
2	Riverside Av.	s/o Valley Bl.	44,904	46,156	46,718	47,970	50,492	51,744	55,541	56,794	
3	Valley Bl.	w/o Dwy. 1	20,733	20,823	21,571	21,661	23,179	23,269	25,497	25,587	
4	Valley Bl.	e/o Willow Av.	23,304	24,602	24,246	25,543	26,340	27,637	28,974	30,271	
5	Valley Bl.	e/o Riverside Av.	15,536	15,581	16,164	16,209	16,578	16,623	18,236	18,281	

#### TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

<sup>1</sup> Birtcher Logistics Center Rialto (MC2020-0031) Traffic Analysis, Urban Crossroads, Inc.

#### TABLE 6-3: TIME OF DAY VEHICLE SPLITS

		Total of Time of		
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	77.50%	12.90%	9.60%	100.00%
Medium Trucks	84.80%	4.90%	10.30%	100.00%
Heavy Trucks	86.50%	2.70%	10.80%	100.00%

<sup>1</sup> Typical Southern California vehicle mix.

"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.



Classification		Total % Traffic Flow		
Classification	Autos	Medium Trucks	Heavy Trucks	Total
All Segments	96.78%	1.77%	1.45%	100.00%

#### TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Based on an existing vehicle count taken at Willow Avenue and Valley Boulevard (Birtcher Logistics Center Rialto (MC2020-0031) Traffic Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth.

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 6-5: EXISTING (2021) WITH PROJECT VEHICLE MIX

	Roadway	Segment	With Project <sup>1</sup>					
ID			Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>		
1	Willow Av.	n/o Valley Bl.	93.94%	1.66%	4.39%	100.00%		
2	Riverside Av.	s/o Valley Bl.	95.52%	1.75%	2.74%	100.00%		
3	Valley Bl.	w/o Dwy. 1	96.80%	1.76%	1.44%	100.00%		
4	Valley Bl.	e/o Willow Av.	94.42%	1.72%	3.87%	100.00%		
5	Valley Bl.	e/o Riverside Av.	96.79%	1.77%	1.44%	100.00%		

<sup>1</sup> Birtcher Logistics Center Rialto (MC2020-0031) Traffic Analysis, Urban Crossroads, Inc.

<sup>2</sup> Total of vehicle mix percentage values rounded to the nearest one-hundredth.

#### TABLE 6-6: EA (2023) WITH PROJECT VEHICLE MIX

	Roadway	Segment	With Project <sup>1</sup>					
ID			Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>		
1	Willow Av.	n/o Valley Bl.	94.04%	1.67%	4.29%	100.00%		
2	Riverside Av.	s/o Valley Bl.	95.57%	1.75%	2.69%	100.00%		
3	Valley Bl.	w/o Dwy. 1	96.80%	1.76%	1.44%	100.00%		
4	Valley Bl.	e/o Willow Av.	94.50%	1.72%	3.78%	100.00%		
5	Valley Bl.	e/o Riverside Av.	96.79%	1.77%	1.44%	100.00%		

<sup>1</sup> Birtcher Logistics Center Rialto (MC2020-0031) Traffic Analysis, Urban Crossroads, Inc.

<sup>2</sup> Total of vehicle mix percentage values rounded to the nearest one-hundredth.

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				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>
1	Willow Av.	n/o Valley Bl.	94.69%	1.69%	3.61%	100.00%
2	Riverside Av.	s/o Valley Bl.	95.65%	1.75%	2.60%	100.00%
3	Valley Bl.	w/o Dwy. 1	96.79%	1.76%	1.44%	100.00%
4	Valley Bl.	e/o Willow Av.	94.68%	1.72%	3.60%	100.00%
5	Valley Bl.	e/o Riverside Av.	96.79%	1.77%	1.44%	100.00%

### TABLE 6-7: EAC (2023) WITH PROJECT VEHICLE MIX

<sup>1</sup> Birtcher Logistics Center Rialto (MC2020-0031) Traffic Analysis, Urban Crossroads, Inc. <sup>2</sup> Total of vehicle mix percentage values rounded to the nearest one-hundredth.

r venicle mix percentage values rounded to the hearest one-hundredth.

#### TABLE 6-8: HY (2040) WITH PROJECT VEHICLE MIX

				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Segment Autos		Heavy Trucks	Total <sup>2</sup>
1	Willow Av.	n/o Valley Bl.	94.87%	1.70%	3.43%	100.00%
2	Riverside Av.	s/o Valley Bl.	95.75%	1.75%	2.50%	100.00%
3	Valley Bl.	w/o Dwy. 1	96.79%	1.77%	1.44%	100.00%
4	Valley Bl.	e/o Willow Av.	94.86%	1.73%	3.41%	100.00%
5	Valley Bl.	e/o Riverside Av.	96.79%	1.77%	1.44%	100.00%

<sup>1</sup> Birtcher Logistics Center Rialto (MC2020-0031) Traffic Analysis, Urban Crossroads, Inc.

 $^{\rm 2}$  Total of vehicle mix percentage values rounded to the nearest one-hundredth.

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# 7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on the Birtcher Logistics Center Rialto Traffic Analysis prepared by Urban Crossroads, Inc. (19) 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 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 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 to 7-8 present a summary of the exterior traffic noise levels for each traffic condition.

	Road	Segment	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID			Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	65.5	RW	34	74
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	72.9	94	202	436
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	69.9	RW	128	276
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	70.4	64	138	298
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	68.7	RW	106	228

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.

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ID	Road	Segment	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
U			Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	68.1	RW	52	111
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	74.2	114	245	527
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.0	60	128	276
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	72.6	89	192	415
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	68.7	RW	106	228

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.

	Road	Garmant	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID	коаа	Segment	Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	65.6	RW	35	76	
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	73.1	96	208	448	
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.1	61	132	283	
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	70.6	66	142	306	
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	68.9	RW	108	234	

### TABLE 7-3: EA WITHOUT PROJECT CONTOURS

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.

	ID Road	Segment	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
			Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	68.2	RW	52	113
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	74.3	116	250	538
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.1	61	132	284
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	72.7	91	196	421
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	68.9	RW	109	234

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing 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 nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.



	Road	Segment	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID			Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	66.9	RW	43	93
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	73.4	102	219	471
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.4	64	138	297
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	71.0	70	150	324
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	69.0	RW	110	238

#### TABLE 7-5: EAC WITHOUT PROJECT CONTOURS

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.

ID	Road	Sogmont	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
		Segment	Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	69.0	RW	59	127
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	74.5	121	260	560
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.4	64	138	298
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	72.9	94	202	436
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	69.0	RW	110	238

#### TABLE 7-6: EAC WITH PROJECT CONTOURS

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.

#### TABLE 7-7: HY WITHOUT PROJECT CONTOURS

	D Road Segment Receiving Land Use <sup>1</sup>	Sogment	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
		Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL			
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	67.3	RW	46	99	
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	73.8	108	233	502	
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.8	68	147	317	
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	71.4	74	160	345	
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	69.4	RW	118	253	

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing 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 nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.



ID	Road	Segment	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
	коаа		Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	69.2	RW	61	132
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	74.9	127	273	588
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.8	68	147	317
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	73.2	98	211	455
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	69.4	RW	118	254

### TABLE 7-8: HY WITH PROJECT CONTOURS

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road.

## 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 for informational purposes and to fully analyze all the existing traffic scenarios identified in the Traffic Analysis prepared by Urban Crossroads, Inc. However, the analysis of existing off-site traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2023 conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 65.5 to 72.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions ranging from 68.1 to 74.2 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 2.6 dBA CNEL on the study area roadway segments. 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 on receiving land uses due to the Project-related traffic.

## 7.3 EA TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Existing plus Ambient Growth without Project conditions CNEL noise levels. The Existing plus Ambient Growth without Project exterior noise levels range from 65.6 to 73.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the Existing plus Ambient Growth with Project conditions will range from 68.2 to 74.3 dBA CNEL. Table 7-10 shows that the Project off-site traffic noise level increases range from 0.0 to 2.6 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 on receiving land uses due to the Project-related traffic.



# 7.4 EAC TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the EAC without Project conditions CNEL noise levels. The EAC without Project exterior noise levels range from 66.9 to 73.4 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the EAC with Project conditions will range from 69.0 to 74.5 dBA CNEL. Table 7-11 shows that the Project off-site traffic noise level increases range from 0.0 to 2.1 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 on receiving land uses due to the Project-related traffic.

# 7.5 HY TRAFFIC NOISE LEVEL INCREASES

Table 7-7 presents the HY without Project conditions CNEL noise levels. The HY without Project exterior noise levels range from 67.3 to 73.8 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-8 shows that the HY with Project conditions range from 69.2 to 74.9 dBA CNEL. Table 7-12 shows that the Project off-site traffic noise level increases range from 0.0 to 1.9 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 on receiving land uses due to the Project-related traffic.



ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Incremental Noise Level Increase Threshold <sup>3</sup>	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	65.5	68.1	2.6	5.0	No
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	72.9	74.2	1.3	3.0	No
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	69.9	70.0	0.1	5.0	No
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	70.4	72.6	2.2	3.0	No
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	68.7	68.7	0.0	5.0	No

 TABLE 7-9: EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

<b>TABLE 7-10:</b>	EA WITH PROJECT	TRAFFIC NOISE LEVEL INCREASE	S
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ID	D Road Segment Receiving			EL at Receivi and Use (dBA	Incremental Noise Level Increase Threshold <sup>3</sup>			
			Land Use <sup>1</sup>		With Project	Project Addition	Limit	Exceeded?
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	65.6	68.2	2.6	5.0	No
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	73.1	74.3	1.2	3.0	No
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.1	70.1	0.0	3.0	No
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	70.6	72.7	2.1	3.0	No
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	68.9	68.9	0.0	5.0	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?



ID	ID Road	D Road Segment Receiving			EL at Receiv and Use (dBA	Incremental Noise Level Increase Threshold <sup>3</sup>		
			Land Use <sup>1</sup>	No Project	With Project	Project Addition	Limit	Exceeded?
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	66.9	69.0	2.1	5.0	No
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	73.4	74.5	1.1	3.0	No
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.4	70.4	0.0	3.0	No
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	71.0	72.9	1.9	3.0	No
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	69.0	69.0	0.0	5.0	No

TABLE 7-11: EAC WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

#### TABLE 7-12: HY WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road Segment Receiving			EL at Receiv and Use (dBA	Incremental Noise Level Increase Threshold <sup>3</sup>			
		oog.no.n	Land Use <sup>1</sup>	No Project	With Project	Project Addition	Limit	Exceeded?
1	Willow Av.	n/o Valley Bl.	Non-Sensitive	67.3	69.2	1.9	5.0	No
2	Riverside Av.	s/o Valley Bl.	Non-Sensitive	73.8	74.9	1.1	3.0	No
3	Valley Bl.	w/o Dwy. 1	Non-Sensitive	70.8	70.8	0.0	3.0	No
4	Valley Bl.	e/o Willow Av.	Non-Sensitive	71.4	73.2	1.8	3.0	No
5	Valley Bl.	e/o Riverside Av.	Non-Sensitive	69.4	69.4	0.0	5.0	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?



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# 8 SENSITIVE 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, outpatient 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, receiver locations in the vicinity of the Project site were identified. All distances are measured from the Project site boundary to the outdoor living areas (e.g., private backyards) or at the building façade, whichever is closer to the Project site. 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 House of Hope Church at 372 W Tullock Street, approximately 535 feet north of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R1 is placed at the building façade. 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 Rialto Senior Center at 1401 S Riverside Avenue, approximately 1,556 feet northeast of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R2 is placed at the building façade. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive Days Inn by Wyndham Fontana/ Rialto hotel at 475 W Valley Boulevard, approximately 399 feet southwest of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R3 is placed at the building façade. A 24-hour noise measurement was taken, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive Joe Baca Middle School at 1640 S Lilac Avenue, approximately 846 feet west of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R4 is placed at the



building façade. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.

R5: Location R5 represents the existing noise sensitive residence at 1492 S Lilac Avenue, approximately 713 feet west of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R5 is placed at the building façade. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.

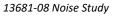


#### **EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS**

LEGEND:

Receiver Locations

Distance from receiver to Project site boundary (in feet)



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# 9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the Birtcher Logistics Center Rialto Project. Exhibit 9-A identifies the representative noise source activities used to assess the operational noise levels.

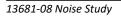
## 9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the typical daytime and nighttime activities at the Project site. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, parking lot vehicle movements, trash enclosure activity, 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. 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 reference project operational noise levels are based on the Project related noise sources shown on Exhibit 9-A. The reference project operational sound power levels are summarized below:

- <u>Loading Dock Activity</u>: 112 dBA L<sub>w</sub> based on reference noise level measurements describing cold collected by Urban Crossroads, Inc. This includes truck idling, deliveries, backup alarms, trailer docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background operation activities.
- <u>A/C Condenser Units</u>: Represents a Lennox SCA120 series 10-ton model packaged air conditioning unit with a reference sound power level of 89 dBA L<sub>w</sub>.
- <u>Parking Lot Vehicle Movements</u>: 79 dBA L<sub>w</sub> based on reference noise level measurements describing warehouse parking lot vehicle activity collected by Urban Crossroads, Inc.
- <u>Trash Enclosure Activity</u>: 89 dBA L<sub>w</sub> based on reference noise level measurements describing trash enclosure event activity collected by Urban Crossroads, Inc.
- <u>Truck Movements</u>: 93 dBA L<sub>w</sub> based on reference noise level measurements describing truck movements collected by Urban Crossroads, Inc. This includes trucks entering and existing the Project driveways and maneuvering in and out of the outdoor loading dock activity area.





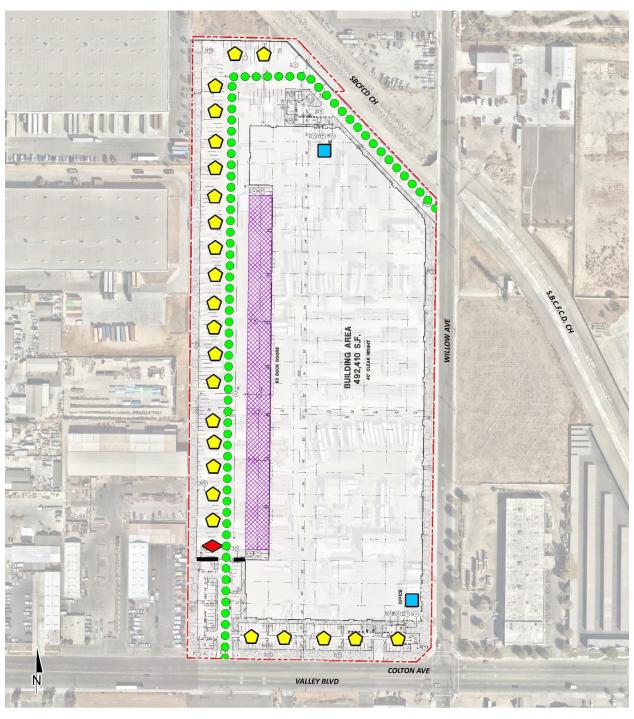


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

#### **LEGEND:**

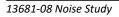
Site Boundary

Trash Enclosure Activity

Roof-Top Air Conditioning Unit 🕜 Parking Lot Vehicle Movements 💻 Planned 14-Foot High Noise Barrier

🔵 🔵 Truck Movements







# 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 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 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 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 including the planned noise barriers.

# 9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning units, parking lot vehicle movements, trash enclosure activity, 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 9-1 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 26.8 to 45.6 dBA Leq.

Table 9-2 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 25.6 to 44.6 dBA  $L_{eq}$ . The differences between the daytime and nighttime noise levels are largely related to the duration of noise activity.



Noise Source <sup>1</sup>	Operational Noise Levels by Receiver Location (dBA Leq)						
Noise Source-	R1	R2	R3	R4	R5		
Loading Dock Activity	37.2	20.5	45.2	45.5	44.9		
Roof-Top Air Conditioning Units	23.7	20.8	20.3	20.6	22.0		
Parking Lot Vehicle Movements	29.6	16.4	25.4	24.7	25.7		
Trash Enclosure Activity	13.0	0.0	14.4	3.9	0.0		
Truck Movements	32.5	23.0	27.8	25.1	27.5		
Total (All Noise Sources)	39.1	26.8	45.3	45.6	45.1		

#### TABLE 9-1: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

<sup>1</sup> See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

Noise Source <sup>1</sup>	Operation	Operational Noise Levels by Receiver Location (dBA Leq)						
Noise Source	R1	R2	R3	R4	R5			
Loading Dock Activity	36.3	19.6	44.2	44.5	43.9			
Roof-Top Air Conditioning Units	21.3	18.4	17.9	18.2	19.6			
Parking Lot Vehicle Movements	28.6	15.5	24.4	23.7	24.7			
Trash Enclosure Activity	12.0	0.0	13.4	2.9	0.0			
Truck Movements	31.5	22.1	26.8	24.2	26.5			
Total (All Noise Sources)	38.2	25.6	44.3	44.6	44.0			

## TABLE 9-2: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

<sup>1</sup> 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 County of San Bernardino exterior noise level standards at nearest noise-sensitive receiver locations. Table 9-3 shows the operational noise levels associated with Birtcher Logistics Center Rialto Project will satisfy the Section 9.50.050[B] of the City Rialto Municipal Code and the County of San Bernardino exterior noise level standards at the nearest receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearest noise-sensitive receiver locations.



Receiver Location <sup>1</sup>	Project Oj Noise Level	perational s (dBA Leq) <sup>2</sup>		l Standards Leq) <sup>3</sup>	Threshold I	Exceeded? <sup>4</sup>
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	39.1	38.2	55	45	No	No
R2	26.8	25.6	55	45	No	No
R3	45.3	44.3	55	45	No	No
R4	45.6	44.6	55	45	No	No
R5	45.1	44.0	55	45	No	No

TABLE 9-3: OPERATIONAL NOISE LEVEL COMPLIANCE

<sup>1</sup> See Exhibit 8-A for receiver locations.

 $^{\rm 2}$  Proposed Project operational noise levels as shown on Tables 9-1 and 9-2.

 $^{\rm 3}$  County of San Bernardino Development Code, Title 8, Section 83.01.080.

<sup>4</sup> 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 nearest 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:

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

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. As indicated on Tables 9-4 and 9-5, the Project will generate daytime and nighttime operational noise level increases ranging from 0.0 to 0.3 dBA L<sub>eq</sub> at the nearest receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented on Table 4-1. Therefore, the incremental Project operational noise level increase is considered *less than significant* at all receiver locations.



Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels⁴	Combined Project and Ambient <sup>5</sup>	Project Increase <sup>6</sup>	Increase Criteria <sup>7</sup>	Increase Criteria Exceeded? <sup>7</sup>
R1	39.1	L1	57.6	57.7	0.1	5.0	No
R2	26.8	L2	60.7	60.7	0.0	3.0	No
R3	45.3	L3	61.6	61.7	0.1	3.0	No
R4	45.6	L4	60.6	60.7	0.1	3.0	No
R5	45.1	L4	60.6	60.7	0.1	3.0	No

TABLE 9-4: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

<sup>1</sup> See Exhibit 8-A for receiver locations.

<sup>2</sup> Total Project daytime operational noise levels as shown on Table 9-3.

<sup>3</sup> Reference noise level measurement locations as shown on Exhibit 5-A.

<sup>4</sup> Observed daytime ambient noise levels as shown on Table 5-1.

<sup>5</sup> Represents the combined ambient conditions plus the Project activities.

<sup>6</sup> The noise level increase expected with the addition of the proposed Project activities.

<sup>7</sup> Significance Criteria as shown on Table 4-1.



Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels⁴	Combined Project and Ambient <sup>5</sup>	Project Increase <sup>6</sup>	Increase Criteria <sup>7</sup>	Increase Criteria Exceeded? <sup>7</sup>
R1	38.2	L1	53.4	53.5	0.1	5.0	No
R2	25.6	L2	57.2	57.2	0.0	5.0	No
R3	44.3	L3	59.5	59.6	0.1	5.0	No
R4	44.6	L4	56.6	56.9	0.3	5.0	No
R5	44.0	L4	56.6	56.8	0.2	5.0	No

TABLE 9-5: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

<sup>1</sup> See Exhibit 8-A for receiver locations.

<sup>2</sup> Total Project nighttime operational noise levels as shown on Table 9-3.

<sup>3</sup> Reference noise level measurement locations as shown on Exhibit 5-A.

<sup>4</sup> Observed nighttime ambient noise levels as shown on Table 5-1.

<sup>5</sup> Represents the combined ambient conditions plus the Project activities.

<sup>6</sup> The noise level increase expected with the addition of the proposed Project activities.

<sup>7</sup> Significance Criteria as shown on Table 4-1.



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# **10 CONSTRUCTION IMPACTS**

This section analyzes potential 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 nearest sensitive receiver locations previously described in Section 8. According to Section 9.50.050[F] of the City Rialto Municipal Code the use pile driver, steam or gasoline shovel, pneumatic hammer, steam or electric hoist or other similar devices and 9.50.050[G] electrically operated compressor, fan or other similar devices are restricted between the hours of 8:00 p.m. and 7:00 a.m. Section 9.50.070 of the City of Rialto Municipal Code, states that construction activities are permitted between the hours of 7:00 a.m. to 5:30 p.m. Monday through Friday from October 1<sup>st</sup> to April 30<sup>th</sup>, 6:00 a.m. to 7:00 p.m. Monday through Friday from May 1<sup>st</sup> to September 30<sup>th</sup>, and 8:00 a.m. to 5:00 p.m. on Saturdays any time of year; with no activity allowed on Sundays or state holidays. (10)

In addition, since neither the City of Rialto General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts. The FTA considers a daytime exterior construction noise level of 80 dBA Leq as a reasonable threshold for noise sensitive residential land use. (7 p. 179)

# **10.1** CONSTRUCTION NOISE LEVELS

Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high levels. The number and mix of construction equipment are expected to occur in the following stages:

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

# **10.2** CONSTRUCTION REFERENCE NOISE LEVELS

To describe peak construction noise activities, this construction noise analysis was prepared using reference noise level measurements published in the Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA). (20). The DEFRA database provides the most recent and comprehensive source of reference construction noise levels. Table 10-1 provides a summary of the DEFRA construction reference noise level measurements expressed in hourly average dBA Leq using the estimated FHWA Roadway Construction Noise Model (RCNM) usage factors (21) to describe the construction activities for each stage of Project construction.



EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE AND RECEIVER LOCATIONS

### LEGEND:

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13681-08 Noise Study

Construction Activity — Distance from receiver to construction activity (in feet)
Receiver Locations

Construction Stage	Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> ) <sup>1</sup>	Combined Noise Level (dBA L <sub>eq</sub> ) <sup>2</sup>
	Demolition Equipment	69	
Demolition	Backhoes	61	73
	Hauling Trucks	71	
	Crawler Tractors	77	
Site Preparation	Hauling Trucks	71	79
Freparation	Rubber Tired Dozers	71	
	Graders	79	
Grading	Excavators	64	79
	Compactors	67	
	Cranes	67	
Building Construction	Tractors	72	74
construction	Welders	65	
	Pavers	70	
Paving	Paving Equipment	69	74
	Rollers	69	
	Cranes	67	
Architectural	Air Compressors	67	72
Coating	Generator Sets	67	

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

 $^{1}$  Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA) expressed in hourly average L<sub>eq</sub> based on estimated usage factors from the FHWA Roadway Construction Noise Model (RCNM).

<sup>2</sup> 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 for general construction noise assessment.

# **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 nearest sensitive receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when multiple pieces of equipment with the highest reference noise level are operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise level for all equipment, assuming they operate at the same time. As shown on Table 10-2, the construction noise levels are expected to range from 53.2 to 66.6 dBA L<sub>eq</sub>, and the highest construction levels are expected to range from 60.2 to 66.6 dBA L<sub>eq</sub> at the nearest receiver locations from the property line. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.



_			Construct	ion Noise Leve	ls (dBA L <sub>eq</sub> )		
Receiver Location <sup>1</sup>	Demolition	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels <sup>2</sup>
R1	59.2	65.2	65.2	60.2	60.2	58.2	65.2
R2	54.2	60.2	60.2	55.2	55.2	53.2	60.2
R3	60.6	66.6	66.6	61.6	61.6	59.6	66.6
R4	58.9	64.9	64.9	59.9	59.9	57.9	64.9
R5	59.5	65.5	65.5	60.5	60.5	58.5	65.5

#### TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

<sup>1</sup>Noise receiver locations are shown on Exhibit 10-A.

<sup>2</sup> 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 is considered *less than significant* at all receiver locations.

<b>.</b> .	Construction Noise Levels (dBA Leq)					
Receiver Location <sup>1</sup>	Highest Construction Noise Levels <sup>2</sup>	Threshold <sup>3</sup>	Threshold Exceeded? <sup>4</sup>			
R1	65.2	80	No			
R2	60.2	80	No			
R3	66.6	80	No			
R4	64.9	80	No			
R5	65.5	80	No			

<sup>1</sup>Noise receiver locations are shown on Exhibit 10-A.

<sup>2</sup> 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.

<sup>3</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

<sup>4</sup> Do the estimated Project construction noise levels exceed the construction noise level threshold?



# **10.5** CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. Ground-borne vibration levels resulting from typical construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA) (7). However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used.

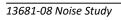
Ground vibration levels associated with various types of construction equipment are summarized on Table 10-4. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by the FTA. The FTA provides the following equation:  $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$ 

Equipment	PPV (in/sec) at 25 feet		
Small bulldozer	0.003		
Jackhammer	0.035		
Loaded Trucks	0.076		
Large bulldozer	0.089		
Hoe Ram (Breaker)	0.089		

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 399 feet to 1,556 feet from Project construction activities (at the Project site boundary), construction vibration levels are estimated to range from 0.000 to 0.001 PPV in/sec and will remain below the County of San Bernardino 0.2 PPV in/sec threshold for vibration at all receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.

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





	Distance	Receiver PPV Levels (in/sec) <sup>2</sup>					Threshold	
<b>Receiver</b> <sup>1</sup>	to Const. Activity (Feet)	Small Bulldozer	Jack- hammer	Loaded Trucks	Large Bulldozer	Peak Vibration	PPV (in/sec) <sup>3</sup>	Threshold Exceeded? <sup>4</sup>
R1	535'	0.000	0.000	0.001	0.001	0.001	0.2	No
R2	1,556'	0.000	0.000	0.000	0.000	0.000	0.2	No
R3	399'	0.000	0.001	0.001	0.001	0.001	0.2	No
R4	846'	0.000	0.000	0.000	0.000	0.000	0.2	No
R5	713'	0.000	0.000	0.000	0.001	0.001	0.2	No

TABLE 10-5: PROJECT CONSTRUCTION VIBRATION LEVELS

<sup>1</sup>Receiver locations are shown on Exhibit 10-A.

<sup>2</sup> Based on the Vibration Source Levels of Construction Equipment included on Table 10-4.

<sup>3</sup> County of San Bernardino Development Code, Section 83.01.090(a) (Appendix 3.1)

 $^{\rm 4}\,{\rm Does}$  the vibration level exceed the maximum acceptable vibration threshold?

### **10.6** CONCRETE CRUSHING CONSTRUCTION REFERENCE NOISE LEVELS

An additional analysis was completed to assess potential noise level impacts due to concrete crushing activities planned near the eastern project site boundary on Willow Avenue. Exhibit 10-B shows the location of the planned concrete crushing activity area in relation to the nearest receiver locations. The concrete crushing construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published in the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels (22). Table 10-6 provides a summary of the reference average  $L_{eq}$  noise levels used to describe concrete crushing construction activities. The reference noise level summary describes construction activity noise levels with multiple pieces of concrete construction equipment operating simultaneously and includes source noise levels for a hoe ram or breaker representing a percussion hammer fitted to an excavator for breaking concrete. A default ground attenuation factor of 0.5 was used in the CadnaA noise prediction model to account for mixed ground representing a combination of hard and soft surfaces.

Construction Stage	Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> ) <sup>1</sup>	Combined Noise Level (dBA L <sub>eq</sub> ) <sup>2</sup>	
Concrete Crushing	Impact Hammer (hoe ram)	83		
	Front End Loader	75	84	
	Dump Truck			

TABLE 10-6: CONCRETE CRUSHING CONSTRUCTION REFERENCE NOISE LEVELS

<sup>1</sup> FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> 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 for general construction noise assessment.



# **10.7** CONCRETE CRUSHING CONSTRUCTION NOISE ANALYSIS AND COMPLIANCE

Using the reference RCNM concrete crushing construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at nearest sensitive receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when multiple pieces of equipment with the highest reference noise level are operating at the closest point from the edge of primary construction activity (as shown on Exhibit 10-B) to each receiver location.

As shown on Table 10-7, the concrete crushing construction noise levels are estimated to range from 48.8 to 53.0 dBA  $L_{eq}$  at the nearest receiver locations. The concrete crushing construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA  $L_{eq}$  significance threshold. Therefore, the noise impacts due to the Project concrete crushing noise is considered *less than significant* at all receiver locations. Appendix 10.2 includes the detailed CadnaA concrete crushing construction equipment noise model inputs.

	Construction Noise Levels (dBA Leq)					
Receiver Location <sup>1</sup>	Concrete Crushing <sup>2</sup>	Daytime Threshold <sup>3</sup>	Threshold Exceeded? <sup>4</sup>			
R1	50.5	80	No			
R2	48.8	80	No			
R3	53.0	80	No			
R4	51.5	80	No			
R5	51.3	80	No			

TABLE 10-7: CONCRETE CRUSHING CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

<sup>1</sup>Noise receiver locations are shown on Exhibit 10-B.

<sup>2</sup> Concrete crushing noise level calculations provided in Appendix 10.2

<sup>3</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

<sup>4</sup> Do the estimated Project construction noise levels exceed the daytime construction noise level threshold?







#### LEGEND:

Concrete Crushing — Distance from receiver to concrete crushing activity (in feet)

Receiver Locations

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# 10.8 CONCRETE CRUSHING CONSTRUCTION VIBRATION ANALYSIS AND COMPLIANCE

Using the vibration source level of construction equipment list provided on Table 10-4 that includes source levels for a hoe ram or breaker representing a percussion hammer fitted to an excavator for breaking concrete and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project concrete crushing construction vibration impacts. Table 10-8 presents the expected concrete crushing construction equipment vibration levels when the equipment with the highest reference vibration activity operating at the closest point from the edge of concrete crushing activity to each receiver location.

At distances ranging from 1,094 feet to 1,788 feet from the Project concrete crushing construction activities as shown on Exhibit 10-B, construction vibration levels are estimated at 0.000 PPV (in/sec) and will remain below the County of San Bernardino 0.2 in/sec PPV threshold for vibration at all receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during Project concrete crushing construction activities at the Project site.

	Distance to	Receiver PPV Levels (in/sec) <sup>2</sup>					Threshold	Thursday
Receiver <sup>1</sup>	er <sup>1</sup> Concrete Crushing Activity (Feet)	Hoe Ram (Breaker)	Jack- hammer	Loaded Trucks	Large Bulldozer	Peak Vibration	PPV (in/sec) <sup>3</sup>	Threshold Exceeded? <sup>4</sup>
R1	1,447'	0.000	0.000	0.000	0.000	0.000	0.2	No
R2	1,788'	0.000	0.000	0.000	0.000	0.000	0.2	No
R3	1,094'	0.000	0.000	0.000	0.000	0.000	0.2	No
R4	1,380'	0.000	0.000	0.000	0.000	0.000	0.2	No
R5	1,397'	0.000	0.000	0.000	0.000	0.000	0.2	No

<sup>1</sup>Concrete Crushing receiver locations are shown on Exhibit 10-B

<sup>2</sup> Based on the Vibration Source Levels of Construction Equipment included on Table 10-4.

 $^{\rm 3}$  County of San Bernardino Development Code, Section 83.01.090(a) (Appendix 3.1)

<sup>4</sup> Does the vibration level exceed the maximum acceptable vibration threshold?

# 10.9 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities will occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours and are generally limited to the actual building area as shown on Exhibit 10-C. Since the nighttime concrete pours will take place outside the permitted City of Rialto Development Code, Section 9.50.070 hours of 7:00 a.m. to 5:30 p.m. Monday through Friday from October 1<sup>st</sup> to April 30<sup>th</sup>, 6:00 a.m. to 7:00 p.m. Monday through Friday from May 1<sup>st</sup> to September 30<sup>th</sup>, and 8:00 a.m. to 5:00 p.m. on Saturdays any time of year, the Project Applicant shall be required to obtain authorization for nighttime work from the City of Rialto. Any nighttime construction noise activities shall satisfy the FTA residential 70 dBA Leq noise limit outlined in Table 4-1. The



reference concrete pour noise levels are expected to occur during the building construction stage and range from 65 to 72 dBA  $L_{eq}$  at 50 feet with a combined noise level of 74 dBA  $L_{eq}$  as previously shown on Table 10.1.

As shown on Table 10-9, the noise levels associated with the nighttime concrete pour activities (paving) are estimated to range from 48.6 to 52.2 dBA  $L_{eq}$  and will satisfy the FTA 70 dBA  $L_{eq}$  nighttime residential noise level threshold at all the receiver locations. Based on the results of this analysis, all nearest noise receiver locations will experience *less than significant* impacts due to the Project related nighttime concrete pour activities. Appendix 10.3 includes the CadnaA nighttime concrete pour noise model inputs.

	Construction Noise Levels (dBA Leq)					
Receiver Location <sup>1</sup>	Paving Construction <sup>2</sup>	Nighttime Threshold <sup>3</sup>	Threshold Exceeded? <sup>4</sup>			
R1	52.5	70	No			
R2	48.7	70	No			
R3	51.2	70	No			
R4	48.6	70	No			
R5	49.5	70	No			

### TABLE 10-9: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

<sup>1</sup> Noise receiver locations are shown on Exhibit 8-B.

<sup>2</sup> Paving construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations.

<sup>3</sup> Exterior noise level standards as shown on Table 4-1.

<sup>4</sup> Do the estimated Project construction noise levels exceed the nighttime construction noise level threshold?



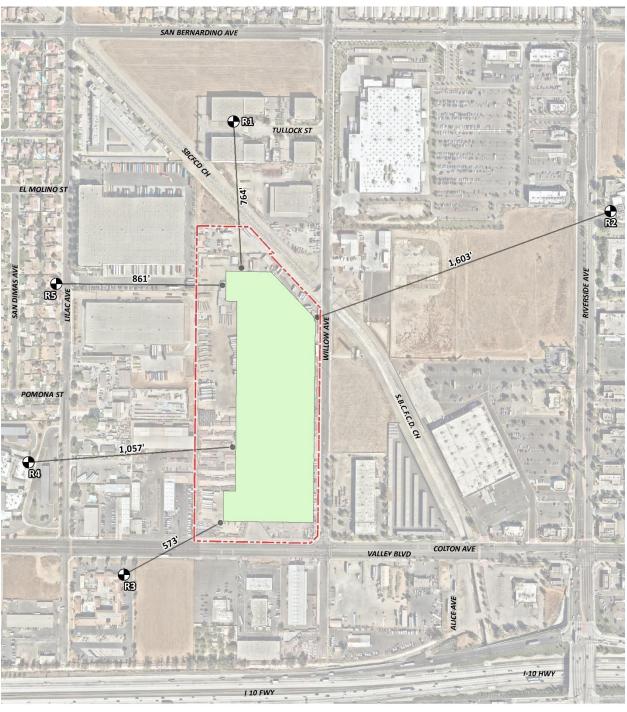


EXHIBIT 10-C: NIGHTTIME CONCRETE POUR NOISE SOURCE AND RECEIVER LOCATIONS



Nighttime Concrete Pour Activity (Building Area) — Distance from receiver to construction activity (in feet)

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# **11 REFERENCES**

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- 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.
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- 19. Urban Crossroads. Birtcher Logistics Center Rialto (MC2020-0031). June 2021.
- 20. **Department of Environment, Food and Rural Affiars (Defra).** Update of Noise Database for Prediction of Noise on Construction and Open Sites. 2004.
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22. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning. *FHWA Roadway Construction Noise Model*. January, 2006.



# **12 CERTIFICATION**

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Birtcher Logistics Center Rialto 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.

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 1133 Camelback #8329 Newport Beach, CA 92658 (949) 581-3148 blawson@urbanxroads.com



# 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**

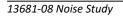
PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009 AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012 PTP – Professional Transportation Planner • May, 2007 – May, 2013 INCE – Institute of Noise Control Engineering • March, 2004

# **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:

COUNTY OF SAN BERNARDINO DEVELOPMENT CODE



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# § 83.01.080 Noise.

This Section establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses.

(a) Noise Measurement. Noise shall be measured:

(1) At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise-sensitive land uses;

(2) With a sound level meter that meets the standards of the American National Standards Institute (ANSI § SI4 1979, Type 1 or Type 2);

(3) Using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).

(b) Noise Impacted Areas. Areas within the County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Subdivision (d) (Noise Standards for Stationary Noise Sources) and Subdivision (e) (Noise Standards for Adjacent Mobile Noise Sources), below. New development of residential or other noise-sensitive land uses shall not be allowed in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise-sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.

### (c) Noise Standards for Stationary Noise Sources.

(1) *Noise Standards*. Table 83-2 (Noise Standards for Stationary Noise Sources) describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

	Table 83-2												
Noise	Noise Standards for Stationary Noise Sources												
Affected Land Uses (Receiving Noise)	7:00 a.m 10:00 p.m. Leq	10:00 p.m 7:00 a.m. Leq											
Residential	55 dB(A)	45 dB(A)											
Professional Services	55 dB(A)	55 dB(A)											
Other Commercial	60 dB(A)	60 dB(A)											
Industrial	70 dB(A)	70 dB(A)											
	el). The sound level corresponding gy as a time-varying signal over a	· · · · · · · · · · · · · · · · · · ·											
measured on a sound level me emphasizes the very low and v	essure Level). The sound pressur eter using the A-weighting filter net very high frequency components o s within the sensitivity range of the	twork. The A-weighting filter de- if the sound, placing greater											
day obtained by adding 10 dec	. The average equivalent A-weigh ibels to the hourly noise levels me s way Ldn takes into account the l	easured during the night (from											

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(2) *Noise Limit Categories.* No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:

(A) The noise standard for the receiving land use as specified in Subdivision (b) (Noise-Impacted Areas), above, for a cumulative period of more than 30 minutes in any hour.

(B) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour.

(C) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour.

(D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.

(E) The noise standard plus 20 dB(A) for any period of time.

(d) *Noise Standards for Adjacent Mobile Noise Sources.* Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 83-3 (Noise Standards for Adjacent Mobile Noise Sources).

	Table 83-3		
	Noise Standards for Adjacent Mobile Noise	e Sources	
	Land Use	Ldn (or Cl	NEL) dB(A)
Categories	Uses	Interior <sup>(1)</sup>	Exterior <sup>(2)</sup>
Residential	Single and multi-family, duplex, mobile homes	45	60 <sup>(3)</sup>
Commercial	Hotel, motel, transient housing	45	60 <sup>(3)</sup>
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65
Notes:			
(1) The indoor en	vironment shall exclude bathrooms, kitchens, toi	lets, closets an	d corridors.
· Hospital/offic	environment shall be limited to: e building patios tel recreation areas parks		

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- Multi-family private patios or balconies
- Park picnic areas
- Private yard of single-family dwellings
- School playgrounds

(3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

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

(e) Increases in Allowable Noise Levels. If the measured ambient level exceeds any of the first four noise limit categories in Subdivision (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in Subdivision (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

(f) *Reductions in Allowable Noise Levels.* If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 83-2 (Noise Standards for Stationary Noise Sources) shall be reduced by five dB(A).

(g) *Exempt Noise*. The following sources of noise shall be exempt from the regulations of this Section:

(1) Motor vehicles not under the control of the commercial or industrial use.

(2) Emergency equipment, vehicles, and devices.

(3) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(h) *Noise Standards for Other Structures.* All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Table 83-4	
Noise Standards for Other Stru	ictures
Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA Ldn
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

(Ord. 4011, passed - -2007; Am. Ord. 4245, passed - -2014)

APPENDIX 3.2:

CITY OF RIALTO MUNICIPAL CODE



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Chapter 9.50 - NOISE CONTROL

#### Sections:

9.50.010 - Purpose and intent.

- A. It is the purpose of these regulations to implement the goals and objectives of the noise element of the city's general plan to establish community-wide noise standards and to serve as a reference for locating other city regulations relating to noise in the community. It is further the purpose of these regulations to recognize that the existence of excessive noise within the city is a condition that is detrimental to the health, safety, welfare and quality of life of the citizens and shall be regulated in the public interest.
- B. In furtherance of the foregoing purpose, it is found and declared as follows:
  - The making, creation or maintenance of such loud, unnecessary, unnatural or unusual noises that are prolonged, unusual, annoying, disturbing and unnatural in their time, place and use are a detriment to public health, comfort, convenience, safety, general welfare and the peace and quiet of the city and its inhabitants; and
  - 2. The public necessity for the provisions and prohibitions contained in and enacted by this chapter is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions set forth in and enacted by this chapter are in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, general welfare and property and the peace and quiet of the city and its inhabitants.

(Ord. 1417 § 1 (part), 2008)

#### 9.50.020 - 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:

"Construction equipment" means tools, machinery or equipment used in connection with construction operations, including all types of "special construction" equipment as defined in the pertinent sections of California Vehicle Code when used in the construction process on any construction site, home improvement site or property maintenance site, regardless of whether such site be located on highway or off highway.

"Enforcement officer" means a city code enforcement officer or peace officer authorized to enforce the provisions and prohibitions of this chapter pursuant to <u>Section 9.50.080</u>.

"Plainly audible" means any sound that can be detected by a person using his or her unaided hearing faculties. As an example, if the sound source under investigation is a portable or personal vehicular sound amplification or reproduction device, the investigating enforcement officer need not determine the title of a song, specific words, or the artist performing the song. The detection of the vibration from the rhythmic bass component of the music is sufficient to constitute a plainly audible sound.

"Public right-of-way" means any street, avenue, boulevard, highway, sidewalk, alley or similar place, owned or controlled by a government entity.

"Public space" means any real property or structures on real property, owned by a government entity and normally accessible to the public, including but not limited to parks and other recreation areas.

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"Responsible person" means:

- 1. Any person who owns, leases or is lawfully in charge of the property or motor vehicle where the noise violation takes place; or
- 2. Any person who owns or controls the source of the noise or violation. If the responsible person is a minor, then the parent or guardian who has custody of the child at the time of the violation shall be the responsible person who is liable under this chapter.

(Ord. 1417 § 1 (part), 2008)

#### 9.50.030 - Prohibited acts.

- A. It is unlawful for any person to engage in the following activities:
  - 1. Sounding any horn or signal device on any automobile, motorcycle, bus or other motor vehicle in any other manner or circumstances or for any other purpose than required or permitted by the Vehicle Code or other California laws.
  - 2. Racing the engine of any motor vehicle while the vehicle is not in motion, except when necessary to do so in the course of repairing, adjusting or testing the same.
  - 3. Operating or permitting the use of any motor vehicle on any public right-of-way or public place or on private property within a residential zone for which the exhaust muffler, intake muffler or any other noise abatement device has been modified or changed in a manner such that the noise emitted by the motor vehicle is increased above that emitted by the vehicle as originally manufactured.
  - 4. Operating or permitting the use or operation of personal or commercial music or sound amplification or production equipment that is:
    - a. Plainly audible across property boundaries;
    - b. Plainly audible through partitions common to two residences within a building;
    - c. Plainly audible at a distance of fifty feet in any direction from the source of music or sound between the hours of eight a.m. and ten p.m.; or
    - d. Plainly audible at a distance of twenty-five feet in any direction from the source of music or sound between the hours of ten p.m. and eight a.m.
  - 5. The intentional sounding or permitting the sounding outdoors of any fire, burglar, or civil defense alarm, siren, whistle, or any motor vehicle burglar alarm, except for emergency purposes or for testing, unless such alarm is terminated within fifteen minutes of activation.
  - 6. Creating excessive noise adjacent to any school, church, court or library while the same is in use, or adjacent to any hospital or care facility, which unreasonably interferes with the workings of such institution, or which disturbs or unduly annoys patients in the hospital, students in the school, users of the court or library, provided conspicuous signs are displayed in such streets indicating the presence of a school, institution of learning, church, court or hospital.
  - 7. Making or knowingly and unreasonably permitting to be made any unreasonably loud, unnecessary or unusual noise that disturbs the comfort, repose, health, peace and quiet or which causes discomfort or annoyance to any reasonable person of normal sensitivity. The characteristics and conditions that may be considered in determining whether this section has been violated, include, but are not limited to, the following:
    - a. The level of noise;

- b. Whether the nature of the noise is usual or unusual;
- c. Whether the origin of the noise is natural or unnatural;
- d. The level of the background noise;
- e. The proximity of the noise to sleeping facilities;
- f. The nature and zoning of the areas within which the noise emanates;
- g. The density of the inhabitation of the area within which the noise emanates;
- h. The time of day or night the noise occurs;
- i. The duration of the noise;
- j. Whether the noise is recurrent, intermittent or constant; and
- k. Whether the noise is produced by a commercial or noncommercial activity.
- B. A violation of this section is an infraction and a public nuisance.
- C. A violation of this section may result in the following:
  - 1. Issuance of an infraction citation;
  - 2. Issuance of a notice of public nuisance;
  - 3. Imposition of criminal and civil penalties; and
  - 4. Confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise.
- D. An enforcement officer who encounters a violation of this section may issue a written notice to the responsible person demanding immediate abatement of the violation (written notice). The written notice shall inform the recipient that a second violation of the same provision within a seventy-two-hour period may result in the issuance of a criminal citation and/or notice of public nuisance, the imposition of criminal and civil penalties, and confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise.
- E. Any peace officer who encounters a second violation of this section within a seventy-two-hour period following issuance of a written notice is empowered to confiscate and impound as evidence, any or all of the components amplifying or transmitting the sound.
- F. Any person claiming legal ownership of the items confiscated and impounded under this section may request the return of the item by filing a written request with the police department within seven calendar days of the confiscation. Such requests shall be processed in accordance with the procedures adopted by the department.

(Ord. 1417 § 1 (part), 2008)

9.50.040 - Excessive noise and vibration emanating from a motor vehicle.

- A. No person shall operating or occupy a motor vehicle on any public right-of-way, public place or private property, while operating or permitting the use or operation of any radio, stereo receiver, musical instrument, television, computer, compact disc player, tape recorder, cassette player or any other device for the production or reproduction of sound from within the motor vehicle so that the sound is plainly audible at a distance of fifty feet from such vehicle, or in the case of a motor vehicle on private property, beyond the property line.
- B. Pursuant to <u>Section 9.50.130</u>, a violation of this section is a misdemeanor offense and a public nuisance.
- C. A violation of this section may result in the following:
  - 1. Issuance of a misdemeanor citation;

- 2. Issuance of a notice of public nuisance;
- 3. Imposition of criminal and civil penalties; and
- 4. Immediate confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise or the immediate confiscation and impoundment of the motor vehicle to which the component is attached if the same may not be removed without causing harm to the vehicle or the component.
- D. Any person claiming legal ownership of a motor vehicle confiscated and impounded under this section may request the return of the vehicle by filing a written request with the police department within seven calendar days of the confiscation. Such requests shall be processed in accordance with the procedures adopted by the department.
- E. Any person claiming legal ownership of the items confiscated and impounded under this section, other than a motor vehicle, may request the return of the item by filing a written request with the police department, which shall be processed in accordance with the procedures adopted by the department.

(Ord. 1417 § 1 (part), 2008)

#### 9.50.050 - Controlled hours of operation.

It is unlawful for any person to engage in the following activities other than between the hours of seven a.m. and eight p.m. in all zones:

- A. Operate or permit the use of powered model vehicles and planes;
- B. Load or unload any vehicle, or operate or permit the use of dollies, carts, forklifts, or other wheeled
   equipment that causes any impulsive sound, raucous or unnecessary noise within one thousand feet of a residence;
- C. Operate or permit the use of domestic power tools, or machinery or any other equipment or tool in any garage, workshop, house or any other structure;
- D. Operate or permit the use of gasoline or electric powered leaf blowers, such as commonly used by gardeners and other persons for cleaning lawns, yards, driveways, gutters and other property;
- E. Operate or permit the use of privately operated street/parking lot sweepers or vacuums, except that emergency work and/or work necessitated by unusual conditions may be performed with the written consent of the city manager;
- F. Operate or permit the use of pile driver, steam or gasoline shovel, pneumatic hammer, steam or electric hoist or other similar devices;
- G. Operate or permit the use of electrically operated compressor, fan, and other similar devices;
- H. Perform ground maintenance on golf course grounds and tennis courts contiguous to golf courses that creates a noise disturbance across a residential or commercial property line;
- I. Operate or permit the use of any motor vehicle with a gross vehicle weight rating in excess of ten thousand pounds, or of any auxiliary equipment attached to such a vehicle, including but not limited to refrigerated truck compressors, for a period longer than fifteen minutes in any hour while the vehicle is stationary and on a public right-of-way or public space except when movement of the vehicle is restricted by other traffic;
- J. Repair, rebuild, reconstruct or dismantle any motor vehicle or other mechanical equipment or devices in a manner so as to be plainly audible across property lines.

#### 9.50.060 - Exemptions.

The following activities and noise sources shall be exempt from the provisions of this chapter:

- A. Those noise events in the community (e.g., airport noise, arterial traffic noise, railroad noise) that are more accurately measured by application of the general plan noise element policy, utilizing the community noise equivalent level (CNEL) method;
- B. Activities conducted on the grounds of any public or private school during regular hours of operation;
- C. Outdoor gatherings, public dances, shows and sporting and entertainment events provided the events are authorized by the city;
- D. Activities conducted at public spaces during regular hours of operation;
- E. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work;
- F. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions;
- G. Mobile noise sounds associated with agricultural operations provided such operations do not take place between the hours of eight p.m. and seven a.m. on weekdays, including Saturdays, or at any time on Sunday or a state holiday;
- H. Mobile noise sources associated with agricultural pest control through pesticide application;
- Warning devices necessary for the protection of the public safety, including, but not limited to, police, fire and ambulance sirens and train horns and sounds for the purpose of alerting persons to the existence of an emergency;
- J. Construction, repair or excavation necessary for the immediate preservation of life or property;
- K. Construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public work projects or essential public services and facilities, including trash collection and those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission;
- L. Construction, repair or excavation work performed pursuant to a valid written agreement with the city or any of its political subdivisions which agreement provides for noise mitigation measures;
- M. Any activity to the extent regulation thereof has been preempted by state or federal law;
- N. Any activity or noise source governed elsewhere in this code. Such activities include but are not limited to:
  - 1. Security alarm systems (see <u>Chapter 7.01</u> of this code),
  - 2. Animal noise (see <u>Title 6</u> of this code),
  - 3. Sound trucks and advertising by sound (see <u>Chapter 9</u> of this code),
  - 4. Performance standards for various commercial and industrial uses (see Title 18 of this code);
- O. Sounds generated in commercial and industrial zones that are necessary and incidental to the uses permitted therein;
- P. Sounds generated from or incidental to emergency repairs to any public works function; and
- Q. Sounds generated in connection with speech or communication protected by the U.S. Constitution or the California Constitution, expect to the extent such sounds are subject to permissible time, manner and place restrictions.

(Ord. 1417 § 1 (part), 2008)

9.50.070 - Disturbances from construction activity.

- A. No person shall be engaged or employed, or cause any other person to be engaged or employed, in any work of construction, erection, alteration, repair, addition, movement, demolition, or improvement to any building or structure except within the hours provided for by subsection B of this section.
- B. The permitted hours for such construction work are as follows:
  - 1. October 1st through April 30th.

Monday—Friday	7:00 a.m. to 5:30 p.m.
Saturday	8:00 a.m. to 5:00 p.m.
Sunday	No permissible hours
State holidays	No permissible hours

#### 2. May 1st through September 30th.

Monday—Friday	6:00 a.m. to 7:00 p.m.
Saturday	8:00 a.m. to 5:00 p.m.
Sunday	No permissible hours
State holidays	No permissible hours

- C. For purposes of this section, the following definitions shall apply:
  - 1. "Building" means any structure used or intended for supporting or sheltering any use or occupancy.
  - 2. "Structure" means that which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.
- D. For purposes of this section, the following exceptions shall apply:
  - 1. Emergency repair of existing installations, equipment, or appliances; and
  - 2. Such work that complies with the terms and conditions of a written early work permit issued by the city manager or his or her designee upon a showing of a sufficient need and justification for the permit due to hot or inclement weather, the use of an unusually long process material, or other circumstances of an unusual and compelling nature.

(Ord. 1417 § 1 (part), 2008)

9.50.080 - Administration.

Except as otherwise provided, the provisions and prohibitions of this chapter shall be jointly administered by and the responsibility of the city's police department and department of development services, code enforcement division. The chief of police may adopt administrative rules and regulations which are consistent with the provisions of this chapter for the purpose of implementing the same.

(Ord. 1417 § 1 (part), 2008)

9.50.090 - Cost recovery for second response.

- A. Any and all personnel who may be deployed by the city pursuant to this chapter shall be deemed to be on regular duty under the general supervision of the chief of police, fire chief, the director of development services or other city department director, and any officer or employee in charge under their respective commands and shall be entitled to any and all benefits provided by law or ordinance for such personnel as employees of the city, except that the rate of pay for such special security services shall be set forth herein. The pay for each employee thus employed during such employment shall be at his or her actual rate of pay. The chief of police or other department director, as the case may be, shall report to the chief financial officer the name of the person, firm, organization or corporation requiring such personnel, the names of the employees so employed and the number of hours of employment of each. The chief financial officer shall thereupon bill the person.
- B. Whenever any enforcement officer issues a written warning to a responsible person to discontinue a noise violation, the responsible person shall be liable for the actual cost of each subsequent response required to abate the violation within seventy-two hours of the issuance of the written warning (response charge).
- C. The bill for the response charge shall be served upon the responsible person within thirty days after the violation. If the responsible person has no last known business or residence address, the location of the violation shall be deemed to be the proper address for service. The bill shall include a notice of the right of the person being charged to request a hearing to dispute the imposition of the response charge or the amount of the charge.
- D. The response charge shall be deemed to be a civil debt to the city.
- E. All responsible persons shall be jointly and severally liable for the response charge regardless of whether or not they received a written notice.

(Ord. 1417 § 1 (part), 2008)

#### 9.50.100 - Public nuisance.

A violation of this chapter by any person responsible for committing, causing or maintaining such violation shall constitute a public nuisance that shall be subject to the provisions of Chapters <u>9.39</u> and <u>9.42</u> of this title.

(Ord. 1417 § 1 (part), 2008)

#### 9.50.110 - Infraction violation.

A violation of <u>Section 9.50.030, 9.50.050</u> or <u>9.50.070</u> of this chapter by any person responsible for committing, causing or maintaining such violation shall constitute an infraction violation and the violator shall be subject to the provisions set forth in <u>Section 1.16.010</u> of this code, including but not limited to the imposition of any and all criminal penalties set forth therein.

(Ord. 1417 § 1 (part), 2008)

9.50.120 - Misdemeanor violation.

A violation of <u>Section 9.50.040</u> of this chapter by any person responsible for committing, causing or maintaining such violation shall constitute a misdemeanor violation which shall be subject to the provisions set forth in <u>Section 1.16.010</u> of this code, including but not limited to the imposition of any and all criminal penalties set forth therein.

(Ord. 1417 § 1 (part), 2008)

9.50.130 - Civil fines.

Any person convicted of an infraction or misdemeanor violation under this chapter shall, for each separate violation, be subject to: (A) a fine in an amount not to exceed two hundred fifty dollars for a first conviction of an offense; (B) a fine in an amount not to exceed five hundred dollars for a second conviction of the same offense within a twelve-month period from the date of the first offense; and (C) a fine in an amount not to exceed seven hundred fifty dollars for the third conviction of the same offense within a twelve-month period from the same offense within a twelve-month period from the date of the first offense shall be one thousand dollars.

(Ord. 1417 § 1 (part), 2008)

9.50.140 - Additional penalties.

Nothing in this chapter shall preclude the city from pursuing any other legal remedies provided by this code or otherwise available to the city at law or in equity.

(Ord. 1417 § 1 (part), 2008)

APPENDIX 5.1:

**STUDY AREA PHOTOS** 

13681-08 Noise Study



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### **JN: 13681 Study Area Photos**



L1\_E 34, 4' 34.990000"117, 22' 33.460000"



L1\_N 34, 4' 35.080000"117, 22' 33.460000"



L1\_S 34, 4' 35.000000"117, 22' 33.460000"



L1\_W 34, 4' 35.030000"117, 22' 33.460000"



L2\_E 34, 4' 30.720000"117, 22' 11.080000"



L2\_N 34, 4' 30.630000"117, 22' 11.100000"

## JN: 13681 Study Area Photos



L2\_S 34, 4' 30.690000"117, 22' 11.100000"



L2\_W 34, 4' 30.630000"117, 22' 11.080000"



L3\_E 34, 4' 20.160000"117, 22' 44.720000"



L3\_N 34, 4' 20.120000"117, 22' 44.500000"



L3\_S 34, 4' 20.200000"117, 22' 44.720000"



L3\_W 34, 4' 20.160000"117, 22' 44.580000"

## JN: 13681 Study Area Photos



L4\_E 34, 4' 26.970000"117, 22' 43.980000"



L4\_N 34, 4' 26.790000"117, 22' 43.950000"



L4\_S 34, 4' 26.950000"117, 22' 43.980000"



L4\_W 34, 4' 26.890000"117, 22' 43.950000"

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13681-04 Noise Study

APPENDIX 5.2:

**NOISE LEVEL MEASUREMENT WORKSHEETS** 



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						24-Ho	ur Noise Le	evel Meas	urement S	ummary						
		y, June 9, 20	21 /illow Avenue		Location:	L1 - North of	the Project s pe Church loc				Meter	: Piccolo II				13681 N. Boykc
FT0JECI.	valley boun		Milow Avenue			House of Ho			(unadjusted)						Anuiyst.	N. DOYK
							Houriy L <sub>eq</sub> C	iba keuuliigs	(unuujusteu)							
85.0 - 80.0	<u>}</u>															
<b>(Vap)</b> 75.0 75.0 70.0 65.0																
- 05.0																
60.0 <b>ٿ</b> 55.0 <u>ح</u>	5				- m -	- <mark></mark>		<mark>ں ب</mark>	- <u>m</u>							
<b>A</b> 55.0 50.0 45.0 40.0		<u>m</u> r	48.2	56.1	29.3	61.1 60.3	<mark>- 8</mark> - 6	6.09 58.6	× ×	4. <u>.</u> .	55.4	<mark>55.6</mark>	54.7	<u>6.</u>	54.6	47.5
99 45.0 40.0 35.0		43.	4	G						<mark>50.</mark>	<u> </u>			23	54 51.	41
55.0	0	1 2	2 3	4 5	6	7 8	9 1	.0 11	12 1	.3 14	15	16 17	18 19	20	21 22	23
	-		-	_	-	-	-		eginning	-	-	-		-		-
meframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. I
	0	46.0	53.3	43.4	52.8	52.0	49.7	48.1	46.0	44.9	43.8	43.7	43.5	46.0	10.0	56.
	1	43.3 46.2	53.1 53.5	40.9 42.4	51.7 53.3	48.6 53.0	46.4 51.7	45.2 50.0	43.0 46.0	42.2 44.4	41.3 42.8	41.2 42.7	41.0 42.5	43.3 46.2	10.0 10.0	53. 56.
Night	2	48.2	56.3	42.4	55.8	54.9	52.6	51.6	48.5	44.4	42.8	42.7	42.5	40.2	10.0	58.
	4	56.1	65.0	47.0	64.9	64.5	63.0	61.4	55.7	52.8	47.6	47.4	47.1	56.1	10.0	66
	5	55.6	76.1	60.2	75.8	75.0	71.7	69.2	64.2	62.2	60.7	60.5	60.3	55.6	10.0	65.
	6	59.3	76.4	62.4	76.1	75.9	73.7	72.1	66.9	64.4	62.9	62.8	62.6	59.3	10.0	69.
	7	61.1	73.4	56.3	73.1	72.7	70.6	68.6	63.2	61.5	57.7	57.0	56.5	61.1	0.0	61.
	8 9	60.3 60.5	77.2 64.4	62.4 56.6	76.8 64.0	76.6 63.5	74.6 62.7	73.2 62.4	65.6 61.2	64.3 60.2	63.0 58.0	62.8 57.5	62.5 56.8	60.3 60.5	0.0 0.0	60. 60.
	10	60.5	67.8	59.1	67.0	66.4	64.9	64.4	63.1	62.2	60.1	59.8	59.3	60.5	0.0	60.
	11	58.6	62.2	54.5	61.9	61.5	60.7	60.4	59.6	58.4	55.7	55.0	54.6	58.6	0.0	58.
	12	58.3	68.6	57.8	67.8	67.0	65.6	65.0	62.8	61.2	59.1	58.7	58.0	58.3	0.0	58.
_	13	52.4	59.4	48.0	58.9	58.2	56.8	56.1	52.8	50.7	48.7	48.4	48.1	52.4	0.0	52.
Day	14 15	50.5 55.4	55.7 65.4	47.6 51.2	55.3 64.1	54.9 63.0	53.8 60.2	53.2 58.9	51.1 54.5	49.5 53.1	48.2 51.8	47.9 51.6	47.6 51.3	50.5 55.4	0.0 0.0	50.
	15	55.4 55.8	65.4 64.0	51.2	64.1 63.6	63.0	60.2	58.9 59.4	54.5 55.4	53.1 54.0	51.8	51.6	51.3	55.4	0.0	55. 55.
	17	55.6	68.7	63.5	68.0	67.2	66.3	66.0	65.1	64.6	63.9	63.8	63.6	55.6	0.0	55.
	18	54.7	61.7	51.1	60.8	60.1	58.2	57.3	55.1	53.5	51.9	51.6	51.2	54.7	0.0	54.
	19	55.1	63.8	50.3	63.3	62.7	61.2	59.8	54.8	52.9	51.0	50.7	50.4	55.1	5.0	60
	20	53.9	63.9	49.1	63.4 61.7	62.0	58.5 59.9	56.4	53.6 55.0	51.8 52.7	49.9	49.6	49.2	53.9 54.6	5.0	58.
	21 22	54.6 51.3	62.0 58.1	49.1 45.5	57.5	61.3 57.0	55.8	58.4 54.9	52.3	52.7 49.7	49.9 46.5	49.6 46.1	49.2 45.7	54.6	5.0 10.0	59. 61.
Night	23	47.5	56.0	43.6	55.3	54.4	51.9	50.4	47.4	45.8	44.3	44.0	43.8	47.5	10.0	57.
meframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min	50.5	55.7	47.6	55.3	54.9	53.8	53.2	51.1	49.5	48.2	47.9	47.6	24-Hour	Daytime	Nighti
, Energy A	Max Average	61.1 57.6	77.2	63.5 erage:	76.8 64.7	76.6 64.0	74.6 62.4	73.2 61.3	65.6 58.2	64.6 56.7	63.9 54.8	63.8 54.4	63.6 54.0		(7am-10pm)	(10pm-
	Min	43.3	53.1	40.9	<u>64.7</u> 51.7	48.6	46.4	45.2	43.0	42.2	41.3	41.2	41.0	56.4	57.6	53
Night	Max	59.3	76.4	62.4	76.1	75.9	73.7	72.1	66.9	64.4	62.9	62.8	62.6		57.0	
Energy A		53.4		erage:	60.3	59.5	57.4	55.9	52.2	50.3	48.2	48.0	47.7			



						24-Ho	ur Noise Le	evel Measu	urement Su	ummary						
		/, June 9, 202			Location:	L2 - East of t					Meter:	Piccolo II				13681
Project:	Valley Boul	evard and W	/illow Avenue	5		Senior Cente	er located at 2			nue.					Analyst:	N. Boyko
							Hourly L <sub>eq</sub> d	dBA Readings	(unadjusted)							
85.																
( <b>Vap</b> ) 80. 75. 70.																
√ <b>8</b> p) 5. 65. 60. ∧ 55.	0															
-00. -00.	ŏ					<u>о</u> и				<mark>,</mark>	u	<b>9</b> 0	<mark>б 4</mark>	<u>ь</u>		
<b>J</b> 50.	0 — m —	55.3	55.9	58.8	58.5	<mark>59.0</mark>	20.1	60.7			59.7	<mark></mark>	62.	<mark></mark>	59.5 59.1	57.4
<b>1 /Jun of</b> 55. 50. 45. 40.	0 –			5								+ +		$\mp$ $\mp$		- v -
35.	0 + 0	1 2	3	4 5	6	7 8	9 1	.0 11	12 1	3 14	15 1	6 17	18 19	20	21 22	23
			_		-				eginning							
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	55.3	63.1	51.8	62.6	62.0	60.7	59.2	55.0	53.3	52.1	52.0	51.8	55.3	10.0	65.3
	1 2	55.3 55.6	63.5 68.6	51.4 51.1	63.1 68.0	62.7 67.0	61.1 64.3	59.4 61.5	54.7 54.7	52.8 52.9	51.7 51.5	51.6 51.3	51.5 51.2	55.3 55.6	10.0 10.0	65.3 65.6
Night	3	55.9	63.6	50.9	63.1	62.7	61.7	60.5	56.0	53.4	51.3	51.5	51.0	55.9	10.0	65.9
Ū	4	57.0	68.8	50.7	68.0	67.1	64.6	62.3	57.0	54.2	51.3	51.0	50.8	57.0	10.0	67.0
	5	58.8	67.1	52.8	66.8	66.3	64.8	63.4	58.5	56.1	53.6	53.3	53.0	58.8	10.0	68.8
	6	58.5 59.0	67.1 68.2	52.3	66.6 67.7	65.7	63.9 65.5	62.9 63.9	58.7 58.4	56.0	53.1	52.8	52.4 51.4	58.5 59.0	10.0 0.0	68.5
	8	60.5	73.9	51.2 52.4	73.4	67.1 72.7	70.4	68.2	58.4 60.5	55.8 56.3	52.3 53.5	51.9 52.9	51.4	60.5	0.0	59.0 60.5
	9	59.6	69.2	51.3	68.8	68.1	65.8	64.2	59.3	56.1	52.5	51.9	51.4	59.6	0.0	59.6
	10	60.7	69.8	55.0	69.4	68.8	66.8	65.0	60.5	57.5	55.7	55.4	55.1	60.7	0.0	60.7
	11	59.0	72.5	51.7	71.6	70.5	67.8	65.6	60.5	56.1	53.0	52.6	51.9	59.0	0.0	59.0
	12 13	58.6 59.9	67.8 69.9	51.7 52.6	67.4 69.4	66.7 68.8	64.9 66.8	63.1 65.3	58.1 60.7	55.3 56.7	52.6 53.7	52.2 53.3	51.9 52.8	58.6 59.9	0.0 0.0	58.6 59.9
Day	13	61.1	70.9	52.5	70.4	69.9	67.9	66.2	60.3	56.7	53.4	53.0	52.8	61.1	0.0	61.1
,	15	59.7	70.1	53.4	69.3	68.5	66.6	64.7	60.2	57.5	54.4	53.9	53.5	59.7	0.0	59.7
	16	62.5	72.4	55.2	71.8	70.8	68.5	66.7	62.0	59.5	56.2	55.8	55.4	62.5	0.0	62.5
	17	62.6	71.8	56.2	71.1	70.3	68.5	66.8	62.1	59.9	57.1	56.7	56.3	62.6	0.0	62.6
	18 19	61.9 62.4	71.6 73.1	55.7 55.6	71.2 72.5	70.6 71.9	68.3 69.7	66.9 67.7	61.9 61.7	59.5 59.0	56.7 56.6	56.3 56.2	55.9 55.7	61.9 62.4	0.0 5.0	61.9 67.4
	20	60.5	70.7	55.0	72.3	69.6	68.0	66.4	61.4	58.3	55.9	55.5	55.2	60.5	5.0	65.5
	21	59.5	67.8	54.2	67.3	66.7	64.9	63.3	59.6	57.2	55.0	54.6	54.3	59.5	5.0	64.5
Night	22	59.1	68.1	53.1	67.6	67.1	64.9	62.9	58.9	56.5	53.8	53.5	53.1	59.1	10.0	69.1
Timeframe	23 <b>Hour</b>	57.4 L <sub>eg</sub>	67.6 L <sub>max</sub>	50.9 L <sub>min</sub>	67.2 <b>L1%</b>	66.6 <b>L2%</b>	64.4 <b>L5%</b>	62.2 <b>L8%</b>	55.9 <b>L25%</b>	53.3 <b>L50%</b>	51.4 <b>L90%</b>	51.2 <b>L95%</b>	50.9 <b>L99%</b>	57.4	10.0 L <sub>eg</sub> (dBA)	67.4
-	Min	58.6	67.8	51.2	67.3	66.7	64.9	63.1	58.1	55.3	52.3	51.9	51.4	24.11	Daytime	Nighttime
Day	Max	62.6	73.9	56.2	73.4	72.7	70.4	68.2	62.1	59.9	57.1	56.7	56.3	24-Hour	(7am-10pm)	(10pm-7am
Energy	Average	60.7		erage:	70.1	69.4	67.4	65.6	60.5	57.4	54.6	54.1	53.7	F0 7	<u> </u>	<b>F7 2</b>
Night	Min Max	55.3 59.1	63.1 68.8	50.7 53.1	62.6 68.0	62.0 67.1	60.7 64.9	59.2 63.4	54.7 58.9	52.8 56.5	51.3 53.8	51.0 53.5	50.8 53.1	59.7	60.7	57.2
Energy	Average	59.1		53.1 erage:	68.0	65.3	63.4	63.4	58.9	56.5	53.8	53.5	53.1			



						24-Ho	our Noise Le	evel Meas	urement S	ummary						
	Wednesday				Location:	: L3 - West of	-			oe Baca	Meter:	Piccolo II				13681
Project:	Valley Boul	evard and W	illow Avenue			Middle Scho									Analyst:	N. Boyko
							Hourly L <sub>eq</sub> (	dBA Readings	(unadjusted)							
85.0	0															
<b>2</b> 80.0	0															
( <b>Ygp</b> ) 70.0 65.0 <b>0</b> 65.0 <b>0</b> 65.0	0															
۔00.0 0.00 تے	ŏ – – –				~~~~~	<b>N</b>	- <mark>.</mark>				u	<mark>، – ب</mark>	4. – <u>–</u>		<b>4</b>	
<b>A</b> 55.0 <b>In</b> 50.0 <b>OH</b> 45.0 40.0	2.8		5	59.6	61.2	61. 62.	61.0	60.2 60.0	59.6	61.0	59.9		<mark></mark>	<mark></mark>	61.4 59.7	57.1
우 45.0 40.0	0 <u> </u>	52.9	, <u> </u>									<b></b>		<b>+</b> +		- is -
35.0	0 + 0	1 2	3	4 5	6	7 8	9 1	.0 11	12 1	.3 14	15 1	5 17	18 19	20	21 22	23
	0	1 2	. 5	4 5	0	/ 0	9 1		eginning	.5 14	15 1	5 17	10 19	20	21 22	23
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	55.8	66.4	50.1	65.9	65.0	61.7	59.2	54.6	52.8	50.8	50.5	50.2	55.8	10.0	65.8
	1 2	52.9 57.9	62.9 70.6	46.6 47.9	62.5 70.2	61.8 69.3	59.4 64.7	57.2 61.3	51.8 53.4	49.7 51.0	47.5 48.9	47.1 48.5	46.8 48.1	52.9 57.9	10.0 10.0	62.9 67.9
Night	3	57.9	67.4	47.9	66.8	65.9	62.8	60.2	53.4	51.6	48.9	46.9	46.5	55.8	10.0	65.8
	4	59.6	71.1	47.2	70.8	70.1	67.2	64.7	57.6	52.6	48.3	47.7	47.4	59.6	10.0	69.6
	5	64.3	75.2	52.2	74.9	74.4	72.1	69.9	62.3	57.3	53.2	52.7	52.4	64.3	10.0	74.3
	6	61.2	76.8	50.3	76.4	75.8	73.1	70.9	63.2	57.3	51.2	50.8	50.4	61.2	10.0	71.2
	7 8	61.7 62.1	74.9 74.4	50.4 52.9	74.4 73.9	73.7 73.1	71.8 69.2	69.6 67.2	61.4 61.9	56.6 57.4	51.6 53.7	51.1 53.4	50.6 53.1	61.7 62.1	0.0 0.0	61.7 62.1
	9	61.0	72.5	52.5	73.5	73.1	68.1	65.8	60.8	57.1	53.2	52.8	52.3	61.0	0.0	61.0
	10	60.2	74.4	50.0	73.9	72.9	69.2	66.3	58.9	54.2	50.9	50.5	50.1	60.2	0.0	60.2
	11	60.0	72.8	51.0	72.4	71.4	68.0	65.5	59.6	55.2	52.0	51.5	51.1	60.0	0.0	60.0
	12	59.6	71.4	49.9	71.0	70.4	67.9	65.5	59.5	54.8	50.8	50.4	50.0	59.6	0.0	59.6
Day	13 14	60.4 61.0	74.1 72.3	54.2 54.1	73.6 71.5	72.8 70.2	70.0 67.3	67.5 65.2	60.4 60.1	57.8 57.1	55.1 54.9	54.7 54.6	54.4 54.2	60.4 61.0	0.0 0.0	60.4 61.0
Duy	15	59.9	70.6	54.2	70.2	69.5	67.1	64.8	59.7	57.1	55.0	54.7	54.3	59.9	0.0	59.9
	16	62.5	72.5	57.9	72.0	71.0	68.1	66.3	62.3	60.4	58.6	58.3	58.0	62.5	0.0	62.5
	17	63.6	72.8	58.3	72.0	71.1	68.4	67.0	63.6	61.3	59.1	58.8	58.4	63.6	0.0	63.6
	18	63.4	71.7	58.8	71.2	70.6	68.3	67.1	63.6	61.3	59.5	59.2	58.8	63.4	0.0	63.4
	19 20	63.1 62.0	76.1 72.3	58.2 55.9	75.5 71.9	74.7 71.2	71.6 68.3	68.5 66.2	62.9 61.3	60.8 58.8	59.0 56.8	58.6 56.4	58.3 56.0	63.1 62.0	5.0 5.0	68.1 67.0
	20	61.4	73.8	54.4	73.2	72.3	68.9	66.1	60.4	57.9	55.3	54.9	54.5	61.4	5.0	66.4
Night	22	59.7	70.8	50.7	70.5	69.9	67.1	64.4	59.0	55.3	51.7	51.3	50.9	59.7	10.0	69.7
-	23	57.1	71.8	49.3	71.2	70.5	67.1	63.4	55.3	52.6	50.2	49.8	49.4	57.1	10.0	67.1
Timeframe	Hour Min	L <sub>eq</sub> 59.6	L <sub>max</sub> 70.6	L <sub>min</sub> 49.9	L1% 70.2	<b>L2%</b>	L5% 67.1	<b>L8%</b> 64.8	<b>L25%</b> 58.9	<b>L50%</b> 54.2	<i>L90%</i> 50.8	<i>L95%</i> 50.4	<i>L99%</i> 50.0		L <sub>eq</sub> (dBA) Daytime	Nighttime
Day	Max	63.6	76.1	58.8	75.5	74.7	71.8	69.6	63.6	61.3	59.5	59.2	58.8	24-Hour	(7am-10pm)	(10pm-7am)
Energy	Average	61.6		rage:	72.6	71.8	68.8	66.6	61.1	57.9	55.0	54.7	54.3			
Night	Min	52.9	62.9	46.4	62.5	61.8	59.4	57.2	51.8	49.7	47.4	46.9	46.5	61.0	61.6	59.5
_	Max Average	64.3 59.5	76.8	52.2	76.4 69.9	75.8 69.2	73.1 66.1	70.9 63.5	63.2 56.9	57.3 53.4	53.2 49.9	52.7 49.5	52.4 49.1			
Energy	Average	59.5	AVE	erage:	09.9	09.2	00.1	03.5	50.9	53.4	49.9	49.5	49.1			



						24-Ho	ur Noise Le	evel Measu	urement Si	ummary						
	Wednesday				Location:	L4 - West of	-			0	Meter:	Piccolo II				13681
Project:	Valley Boule	evard and W	illow Avenue			family reside				e.					Analyst:	N. Boyko
							Hourly L <sub>eq</sub> a	IBA Readings	(unadjusted)							
85.	0															
<b>a</b> 80.	0															
(Vap) 75.1 70.1 65.1 60.1	0															
.وي. 60. ي	ŏ – – –						+- <u>.</u> +-,	<b>ν</b> ω	<b>4 0</b>	<b></b>		, <u>o</u>	<u>ო თ</u>		-	
<b>∧</b> 55. <b>n</b> 50. <b>o</b> 45.	0 0 0 0			56.2	58.6	61.0 59.0		60.5	<mark></mark>	60.5	58.7 60.6	<b>61.</b>	60.9	<mark></mark>	60.0 58.1	57.0
<b>9</b> 45. 40.	0	49.9	52.0	_ <u>8</u>	<b>0</b>							# #			n	- is -
35.	0 ++															
	0	1 2	3	4 5	6	7 8	91		12 1 eginning	.3 14	15 1	6 17	18 19	20	21 22	23
Timoframo	llour	,	,	,	110/	1.3%	1 = 0/			150%	100%	105%	100%	,	Adi	Adi I
Timeframe	Hour 0	<b>L</b> <sub>eq</sub> 52.9	<b>L</b> <sub>max</sub> 65.0	L <sub>min</sub> 45.8	<b>L1%</b> 64.6	<b>L2%</b>	<b>L5%</b> 59.8	<b>L8%</b> 56.2	<b>L25%</b>	<b>L50%</b>	<b>L90%</b> 46.4	<b>L95%</b> 46.2	<b>L99%</b> 45.9	<b>L</b> <sub>eq</sub> 52.9	<b>Adj.</b> 10.0	<b>Adj. L</b> <sub>eq</sub> 62.9
	1	49.9	61.7	43.1	61.1	60.1	57.1	54.1	47.0	44.8	43.5	43.4	43.2	49.9	10.0	59.9
	2	55.3	71.1	45.5	70.3	69.4	66.0	62.1	55.0	48.6	46.1	45.9	45.6	55.3	10.0	65.3
Night	3	52.0	62.6	43.5	62.3	61.7	58.8	56.4	50.9	47.5	44.3	44.0	43.6	52.0	10.0	62.0
	4	56.2 60.0	68.1 75.0	45.5 49.8	67.6 74.7	66.8 74.0	63.9 71.4	61.0 69.0	53.6 62.9	49.7 56.2	46.4	46.0 50.6	45.6 50.0	56.2 60.0	10.0 10.0	66.2 70.0
	6	58.6	75.0	49.8	74.7	74.0	71.4	68.1	58.4	53.4	51.0 50.2	49.8	49.4	58.6	10.0	68.6
	7	61.0	72.2	49.9	71.6	70.8	68.3	66.6	60.7	55.6	51.3	50.6	50.0	61.0	0.0	61.0
	8	59.0	74.2	47.8	73.7	72.8	68.8	66.0	59.0	53.8	48.8	48.3	47.9	59.0	0.0	59.0
	9	60.1	74.6	47.4	74.1	73.3	69.9	66.9	60.1	54.5	48.7	48.1	47.6	60.1	0.0	60.1
	10 11	61.3 60.5	73.8 72.2	48.2 48.0	73.4 71.9	72.7 71.2	70.2 68.7	68.3 66.5	61.6 60.3	55.7 55.0	49.8 49.3	49.0 48.7	48.4 48.2	61.3 60.5	0.0 0.0	61.3 60.5
	12	61.4	74.4	49.2	73.9	73.0	69.5	67.6	62.4	57.2	50.5	50.0	49.4	61.4	0.0	61.4
	13	60.8	78.2	52.2	77.5	76.5	72.9	70.4	63.0	58.0	54.0	53.1	52.5	60.8	0.0	60.8
Day	14	60.5	75.6	51.1	74.8	73.8	69.2	66.9	60.7	55.9	51.9	51.5	51.2	60.5	0.0	60.5
	15 16	58.7 60.6	76.9 71.6	51.5 53.4	76.3 71.1	75.1 70.6	70.6 68.5	66.6 66.0	58.5 60.0	54.4 56.7	52.2 54.2	51.9 53.8	51.6 53.5	58.7 60.6	0.0 0.0	58.7 60.6
	10	61.8	71.0	54.0	71.1	70.8	68.1	66.3	61.3	57.4	54.2	53.8 54.5	55.5	61.8	0.0	61.8
	18	60.3	70.4	53.9	70.0	69.1	67.2	66.1	60.9	57.6	54.7	54.4	54.0	60.3	0.0	60.3
	19	60.9	72.9	53.3	72.4	71.4	67.6	65.0	59.6	56.7	54.2	53.8	53.5	60.9	5.0	65.9
	20	60.6 60.0	71.5	55.2	71.0	70.5 70.6	68.0 68.0	66.0	60.7	58.0	55.9	55.6	55.3	60.6	5.0	65.6 65.0
	21 22	58.1	71.8 69.0	51.5 48.2	71.4 68.7	68.1	65.3	65.5 63.0	59.1 56.6	55.9 53.0	52.4 49.4	52.0 48.8	51.6 48.3	60.0 58.1	5.0 10.0	65.0
Night	22	57.0	68.3	48.6	67.8	67.1	64.4	62.1	54.3	51.1	49.3	49.0	48.7	57.0	10.0	67.0
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min	58.7	70.4	47.4	70.0	69.1	67.2	65.0	58.5	53.8	48.7	48.1	47.6	24-Hour	Daytime	Nighttime
	Max Average	61.8 60.6	78.2 Ave	55.2 erage:	77.5 73.0	76.5 72.1	72.9 69.0	70.4 66.7	63.0 60.5	58.0 56.2	55.9 52.2	55.6 51.7	55.3 51.3		(7am-10pm)	(10pm-7am)
	Min	49.9	61.7	43.1	61.1	60.1	57.1	54.1	47.0	44.8	43.5	43.4	43.2	59.5	60.6	56.6
Night	Max	60.0	75.3	49.8	74.9	74.3	71.7	69.0	62.9	56.2	51.0	50.6	50.0			
Energy	Average	56.6	Ave	erage:	68.0	67.2	64.3	61.3	54.3	50.2	47.4	47.1	46.7			



APPENDIX 7.1:

**OFF-SITE TRAFFIC NOISE CONTOURS** 



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	FHV	VA-RD-77-108	HIGHWA	AY NO	ISE PF	REDICTI	ON MOI	DEL			
Road Nam	o: Existing Wi e: Willow Av. nt: n/o Valley E	,					Name: E Imber: 1		er Logistics	Center	R
SITE	SPECIFIC IN	IPUT DATA							L INPUTS	3	
Highway Data				Sit	e Con	ditions (	'Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	4,523 vehicle	s				,	Autos:	15		
Peak Hour	Percentage:	7.57%			Mee	dium Tru	cks (2 A	xles):	15		
Peak H	our Volume:	342 vehicles	5		Hea	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		Vo	hicle N	Niv					
Near/Far La	ne Distance:	12 feet		Ve		icleTvpe		Dav	Evening	Niaht	Dailv
Site Data								77.5%		9.6%	
Bai	rier Height:	0.0 feet			Me	edium Tri	ucks:	84.8%	4.9%	10.3%	1.779
Barrier Type (0-W	•	0.0			E	leavy Tr	ucks:	86.5%	2.7%	10.8%	1.45
Centerline Di	. ,	32.0 feet		No	ico So	ource Ele	wation	(in f	ootl		
Centerline Dist.	to Observer:	32.0 feet		140	136 30	Autos		000	el)		
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		297			
Observer Height (	Above Pad):	5.0 feet				v Trucks		004	Grade Adj	ustment	. 0 0
Pa	ad Elevation:	0.0 feet								aounom	. 0.0
Roa	ad Elevation:	0.0 feet		La	ne Equ	uivalent		e (in :	feet)		
1	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree	s	1		n Trucks					
	Right View:	90.0 degree	s		Heav	y Trucks	: 31.8	576			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atter
Autos:	66.51	-6.12		2.84		-1.20		-4.51	0.0	00	0.00
Medium Trucks:	77.72	-23.50		2.90		-1.20		-4.86	0.0		0.00
Heavy Trucks:	82.99	-24.38		2.89		-1.20		-5.72	0.0	00	0.00
Unmitigated Noise	Levels (with			ttenua	tion)						
VehicleType	Leq Peak Hou			q Eve	•	Leq I	•		Ldn		NEL
Autos:	62		61.3		59.6		53.5		62.1		62
Medium Trucks:	55		55.6		49.3		47.7		56.2		56
Heavy Trucks:	60		60.1		51.1		52.3		60.7		60.
	64	.9	64.4		60.5		56.6		65.1		65
Vehicle Noise:	04										
		ontour (in feet)									
Vehicle Noise:				70 dB,	· ·	65 a		é	60 dBA	55	dBA
Vehicle Noise:				70 dB,	4 15 16	65 a	IBA 32 34	é	60 dBA 70 74	55	dBA 150

Scenario: Existing Without Project Road Name: Valley BI.				······		er Logistics				
			Job Nu	mher <sup>.</sup>	13681					
Road Segment: w/o Dwy. 1										
SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS								
Highway Data		Site Con	ditions (	Hard =	10, Sc	oft = 15)				
Average Daily Traffic (Adt): 20,733 vehicles				,	Autos:	15				
Peak Hour Percentage: 7.57%		Med	dium Tru	cks (2 A	(xles)	15				
Peak Hour Volume: 1,570 vehicles		Hea	avy Truci	(S (3+ A	(xles):	15				
Vehicle Speed: 40 mph		Vehicle N	lix							
Near/Far Lane Distance: 82 feet		Vehi	cleType		Day	Evening	Night	Daily		
Site Data			A	utos:	77.5%	12.9%	9.6%	96.789		
Barrier Height: 0.0 feet		Me	dium Tru	icks:	84.8%		10.3%	1.779		
Barrier Type (0-Wall, 1-Berm): 0.0		h	leavy Tru	icks:	86.5%	2.7%	10.8%	1.45		
Centerline Dist. to Barrier: 60.0 feet		Noise So	urce Ele	vations	s (in fe	eet)				
Centerline Dist. to Observer: 60.0 feet			Autos		000					
Barrier Distance to Observer: 0.0 feet		Mediun	n Trucks		297					
Observer Height (Above Pad): 5.0 feet		Heav	y Trucks		004	Grade Ad	iustment	: 0.0		
Pad Elevation: 0.0 feet				D:		f 4)				
Road Elevation: 0.0 feet	-	Lane Equ	Autos			reet)				
Road Grade: 0.0% Left View: -90.0 degrees		Modium	Autos. n Trucks							
Right View: 90.0 degrees			y Trucks							
right view. 50.0 degrees		nour.	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10.1						
FHWA Noise Model Calculations										
	stance	Finite		Fresn	-	Barrier Att		m Atten		
Autos: 66.51 0.49	0.7	-	-1.20		-4.69		000	0.00		
Medium Trucks: 77.72 -16.88	0.7	-	-1.20		-4.88		000	0.00		
Heavy Trucks: 82.99 -17.76	0.7	4	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise Levels (without Topo and barrie		,								
VehicleType Leq Peak Hour Leq Day	Leq E	vening	Leq N			Ldn		NEL		
Autos: 66.5 65.8		64.1		58.0		66.0		67.		
Medium Trucks: 60.4 60.1		53.7		52.2		60.0	-	60.		
Heavy Trucks:         64.8         64.6           Vehicle Noise:         69.3         68.9		55.5 65.0		56.8 61.0		65. 69.		65. 69.		
		65.0		61.0		69.	)	69		
Centerline Distance to Noise Contour (in feet)			05					10.4		
L	70	dBA	65 d		6	50 dBA		dBA		
Ldn: CNEL:		56 59		121 128		260 276		56) 59		

Tuesday, June 15, 2021

	FHV	/A-RD-77-108 HI	GHWAY	NOISE PI	REDICT	ION MOD	DEL					
	<ul> <li>Existing Wit</li> <li>Riverside A</li> <li>s/o Valley B</li> </ul>	<i>.</i>		Project Name: Birtcher Logistics Center R Job Number: 13681								
SITE S	PECIFIC IN	PUT DATA						INPUTS	3			
Highway Data				Site Con	ditions	(Hard = 1	10, Sof	t = 15)				
Average Daily 1	Traffic (Adt):	44,904 vehicles				A	utos:	15				
Peak Hour F	•	7.57%				icks (2 A	,	15				
		3,399 vehicles		He	avy Truc	:ks (3+ A	xles):	15				
	icle Speed:	40 mph	ŀ	Vehicle I	Mix							
Near/Far Lan	e Distance:	76 feet		Veh	icleType	Ĺ	Day I	Evening	Night	Daily		
Site Data					F	Autos: 7	7.5%	12.9%	9.6%	96.78		
Bar	rier Height:	0.0 feet		M	edium Tr	ucks: 8	84.8%	4.9%	10.3%	1.77		
Barrier Type (0-Wa	•	0.0		ŀ	leavy Tr	rucks: 8	86.5%	2.7%	10.8%	1.45		
Centerline Dis	t. to Barrier:	60.0 feet	-	Noise So	urce El	ovations	(in for	at)				
Centerline Dist. t	o Observer:	60.0 feet	ŀ	10/30 00	Auto		•	.9				
Barrier Distance t	Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet											
Observer Height (A	Above Pad):			m Truck: vy Truck:			Grade Adji	ustment:	0.0			
	d Elevation:	0.0 feet			·							
	d Elevation:	0.0 feet	-	Lane Eq				et)				
F	oad Grade:	0.0%			Autos							
	Left View:	-90.0 degrees			m Truck: vy Truck:							
	Right View:	90.0 degrees		neav	y much	5. 40.0	30					
FHWA Noise Mode	I Calculations											
VehicleType	REMEL		Distance		Road	Fresne		arrier Atte		m Atter		
Autos:	66.51	3.85	0.3		-1.20		4.69	0.0		0.00		
Medium Trucks:	77.72	-13.53	0.3		-1.20		4.88	0.0		0.00		
Heavy Trucks:	82.99	-14.41	0.3	37	-1.20	-	5.34	0.0	00	0.0		
Unmitigated Noise												
	Leq Peak Hou			vening	Leq	Night		Ldn		IEL		
Autos:	69.		-	67.0		61.0		69.6		70		
Medium Trucks:	63.			56.7		55.1		63.6		63		
Heavy Trucks: Vehicle Noise:	67.		-	58.5		59.8		68.1		68		
	72.		8	67.9		64.0		72.5		72		
Centerline Distanc	e to Noise Co	ntour (in feet)	70	dBA	65	dBA	60	dBA	55	dBA		
		Ldr		<i>ава</i> 88	05 (	191 191	00	411	55	<i>aba</i> 88		
		CNEL		00 94		202		411		93		
		CIVEL		34		202		430		55		

	FH	WA-RD-77-108	HIGHW	AY NO	ISE PF	REDICT	ION MOD	EL			
Road Nar	rio: Existing W ne: Valley Bl. ent: e/o Willow	,					Name: Bi umber: 13	rtcher Logistio 8681	cs Cei	nter R	
SITE	SPECIFIC IN	IPUT DATA				N	IOISE M	ODEL INPU	тs		
Highway Data				Sit	e Con	ditions	(Hard = 1	0, Soft = 15)			
Average Daily	, ,	23,304 vehicle	es					utos: 15			
	r Percentage:	7.57%					ucks (2 Ax	,			
	Hour Volume:	1,764 vehicle	6		He	avy Truc	cks (3+ A)	<i>les):</i> 15			
	ehicle Speed:	40 mph		Ve	hicle I	Mix					
Near/Far La	ane Distance:	82 feet			Vehi	icleType	E	ay Evening	g Nig	ht	Daily
Site Data							Autos: 7	7.5% 12.9%	6 9	.6%	96.78%
Ba	rrier Height:	0.0 feet			Me	edium Ti	rucks: 8	4.8% 4.9%	6 10	.3%	1.77%
Barrier Type (0-V	Vall, 1-Berm):	0.0			F	leavy T	rucks: 8	6.5% 2.7%	6 10	.8%	1.45%
Centerline D	ist. to Barrier:	60.0 feet		No	ise So	ource El	evations	(in feet)			
Centerline Dist.	to Observer:	60.0 feet				Auto					
Barrier Distance	to Observer:	0.0 feet			Mediur	n Truck					
Observer Height	(Above Pad):	5.0 feet				y Truck			diustr	nent:	0.0
	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		La	ne Equ		Distance	(in feet)			
	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degre	es			n Truck					
	Right View:	90.0 degre	es		Heav	y Truck	s: 43.90	)9			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	I Barrier A	Atten	Bern	n Atten
Autos:	66.51	1.00		0.72		-1.20	-4	4.69 (	0.000		0.00
Medium Trucks:	77.72	-16.38		0.75		-1.20	-4	4.88 (	0.000		0.00
Heavy Trucks	82.99	-17.26		0.74		-1.20		5.34 (	0.000		0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenua	tion)						
VehicleType	Leq Peak Ho	ur Leq Day	L	eq Eve	ning	Leq	Night	Ldn		CN	EL
Autos:		.0	66.3		64.6		58.5		7.1		67.
Medium Trucks	60	).9	60.6		54.2		52.7	61	1.1		61.4
Heavy Trucks	65	5.3	65.1		56.0		57.3	65	5.6		65.
Tieavy Trucks.		9.8	69.4		65.5		61.6	70	D.1		70.4
Vehicle Noise:	69										
Vehicle Noise			)						1		
		ontour (in feet		70 dB.		65	dBA	60 dBA		55 c	
Vehicle Noise		ontour (in feet	Ldn:	70 dB.	A 61 64	65	dBA 130 138	28	31	55 c	<i>IBA</i> 605 643

FHWA-RD-77-108 HIG	AY NOISE PREDICTION MODEL	
Scenario: Existing Without Project Road Name: Valley Bl. Road Segment: e/o Riverside Av.	Project Name: Birtcher Log Job Number: 13681	istics Center R
SITE SPECIFIC INPUT DATA	NOISE MODEL IN	
Highway Data	Site Conditions (Hard = 10, Soft = 1	(5)
Average Daily Traffic (Adt): 15,536 vehicles	Autos: 15	5
Peak Hour Percentage: 7.57%	Medium Trucks (2 Axles): 15	i
Peak Hour Volume: 1,176 vehicles	Heavy Trucks (3+ Axles): 15	5
Vehicle Speed: 40 mph	Vehicle Mix	
Near/Far Lane Distance: 82 feet	VehicleType Day Ever	ning Night Daily
Site Data		.9% 9.6% 96.78%
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4	.9% 10.3% 1.77%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2	.7% 10.8% 1.45%
Centerline Dist. to Barrier: 60.0 feet	Noise Source Elevations (in feet)	
Centerline Dist. to Observer: 60.0 feet	Autos: 0.000	
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297	
Observer Height (Above Pad): 5.0 feet		e Adjustment: 0.0
Pad Elevation: 0.0 feet	11cavy 11acks. 0.004 01aa	e najaoanona ete
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)	
Road Grade: 0.0%	Autos: 44.091	
Left View: -90.0 degrees	Medium Trucks: 43.890	
Right View: 90.0 degrees	Heavy Trucks: 43.909	
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flow D	nce Finite Road Fresnel Barrie	er Atten Berm Atten
Autos: 66.51 -0.76	0.72 -1.20 -4.69	0.000 0.000
Medium Trucks: 77.72 -18.14	0.75 -1.20 -4.88	0.000 0.000
Heavy Trucks: 82.99 -19.02	0.74 -1.20 -5.34	0.000 0.000
Unmitigated Noise Levels (without Topo and barr	ttenuation)	
VehicleType Leq Peak Hour Leq Day	eq Evening Leq Night Ldn	CNEL
Autos: 65.3 64.6	62.8 56.8	65.4 66.0
Medium Trucks: 59.1 58.8	52.5 50.9	59.4 59.6
Heavy Trucks: 63.5 63.3	54.3 55.5	63.9 64.0
Vehicle Noise: 68.1 67.6	63.7 59.8	68.3 68.3
Centerline Distance to Noise Contour (in feet)	· · ·	
	70 dBA 65 dBA 60 dB/	
Ldn.	46 100	214 462
CNEL	49 106	228 490

	FHW	/A-RD-77-108	HIGHW	AY NC	DISE PR	EDICTI	ON MC	DEL			
Road Nam	o: Existing + P e: Riverside Av nt: s/o Valley B	ι.			F		Name: umber:		r Logistics	Center F	2
SITE	SPECIFIC IN	PUT DATA								s	
Highway Data				Si	te Cond	itions (	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	46,156 vehicle	s					Autos:	15		
Peak Hour	Percentage:	7.57%			Med	ium Tru	icks (2	Axles):	15		
Peak H	our Volume:	3,494 vehicles			Hea	vy Truc	:ks (3+ )	Axles):	15		
Vei	nicle Speed:	40 mph		Ve	hicle M	ix					
Near/Far Lai	ne Distance:	76 feet		-		leType		Dav	Evening	Niaht	Daily
Site Data							utos:	77.5%	•	9.6%	
Bar	rier Height:	0.0 feet			Med	dium Tr	ucks:	84.8%	4.9%	10.3%	1.759
Barrier Type (0-W	•	0.0			He	avy Tr	ucks:	86.5%	2.7%	10.8%	2.749
Centerline Dis	. ,	60.0 feet		AL.	oise Sou	wee El	ovetien	a (in fi	(hot)		
Centerline Dist.	to Observer:	60.0 feet		NO	Dise Sol	Autos		s (In re 000	eet)		
Barrier Distance	to Observer:	0.0 feet			Medium			297			
Observer Height (	Above Pad):	5.0 feet				Trucks		004	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet								aounom	0.0
Roa	d Elevation:	0.0 feet		La	ne Equi				feet)		
ŀ	Road Grade:	0.0%				Autos		701			
	Left View:	-90.0 degree			Medium			511			
	Right View:	90.0 degree	s		Heavy	Trucks	5.' 46.	530			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dista		Finite F		Fresi	-	Barrier Att		m Atten
Autos:	66.51	3.91		0.34		-1.20		-4.69		000	0.00
Medium Trucks:	77.72	-13.47		0.37		-1.20		-4.88		000	0.00
Heavy Trucks:	82.99	-11.52		0.37		-1.20		-5.34	0.0	000	0.00
Unmitigated Noise					<u> </u>						
	Leq Peak Hou			.eq Eve		Leq I		_	Ldn		VEL
Autos: Medium Trucks:	69. 63.	-	58.9 53.1		67.1 56.7		61. 55.		69.7 63.7		70. 63
Heavy Trucks:	63. 70.		53.1 70.4		56.7 61.4		55. 62.	-	63. 71.0		63. 71.
Vehicle Noise:	70.		70.4		68.4		62.		71.0		71.
					00.4		03.	•	73.0	,	74.
Centerline Distanc	e to Noise Co	ntour (in feet)	-	70 dE	4	65 0	IRA	F	0 dBA	55	dBA
			_dn:	70 UL	108	001	233		502		1,08
							200		JU2		1,00

Tuesday, June 15, 2021

	FHW/	A-RD-77-108 F	liGH	NAY I		REDICTI		DEL			
Scenario: Existing Road Name: Willow Road Segment: n/o Vall	, Av.	,					Name: E umber: '		er Logistics	Center	R
SITE SPECIFIC	INP	UT DATA							L INPUT	5	
Highway Data					Site Con	ditions	(Hard =	10, Se	oft = 15)		
Average Daily Traffic (Ad Peak Hour Percentag Peak Hour Volum	e:	4,995 vehicles 7.57% 378 vehicles					) Icks (2 A Iks (3+ A	,	15		
Vehicle Spee	d:	40 mph		Ļ							
Near/Far Lane Distanc	e:	12 feet		F	Vehicle I	nix cleType		Day	Evening	Night	Daily
Site Data					ven			77.5%	-	9.6%	
Barrier Heigh		0.0 feet			Me	edium Tr		84.8%		10.3%	
Barrier Type (0-Wall, 1-Bern		0.0				leavy Tr		86.5%		10.8%	
Centerline Dist. to Barrie	·	32.0 feet		F	Noise Sc	uree El	ovetien	. (in 6	a a fi		
Centerline Dist. to Observe	er:	32.0 feet		F	Noise 30	Auto:		000	eel)		
Barrier Distance to Observe	er:	0.0 feet			Modiu	n Trucks		297			
Observer Height (Above Pag	1):	5.0 feet				y Trucks		297 004	Grade Adj	ustmen	ot: 0.0
Pad Elevatio	n:	0.0 feet								aotinion	. 0.0
Road Elevatio	n:	0.0 feet			Lane Eq				feet)		
Road Grad		0.0%				Autos					
Left Vie		-90.0 degrees				n Trucks					
Right Vie	N:	90.0 degrees			Heav	y Truck:	s: 31.5	576			
FHWA Noise Model Calcula	ions										
VehicleType REMEL	. 7	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en Be	erm Atten
	.51	-5.82		2.8		-1.20		-4.51	0.0		0.00
	.72	-23.34		2.9	-	-1.20		-4.86		000	0.00
Heavy Trucks: 82	.99	-19.12		2.8	19	-1.20		-5.72	0.0	000	0.00
Unmitigated Noise Levels (v											
VehicleType Leq Peak				Leq E	vening	Leq	Night		Ldn		ONEL
Autos:	62.3	-	1.6		59.9		53.8		62.4		63.
Medium Trucks:	56.1	-	5.8		49.4		47.9		56.3		56.
Heavy Trucks: Vehicle Noise:	65.6 67.6		5.4 7.2		56.3 61.7		57.6 59.4		65.9 67.8		66. 68.
			1.2		01.7		59.4		07.8	)	68.
Centerline Distance to Nois	e Con	tour (in feet)	-	70	dBA	65	IBA		60 dBA	5	5 dBA
		1.	dn:	70	ава 23	05 (	50 JBA		оо ава 107	5	230 230
		CNI			23		50		107		230
		0/11			24		52				240

	FHV	VA-RD-77-108	HIGHW	AY NOIS	SE PREDIC	TION MO	DEL			
Road Nan	rio: Existing + F ne: Valley Bl. ent: w/o Dwy. 1	Project				ct Name: I Number: '		er Logistics	Center F	R
SITE	SPECIFIC IN	IPUT DATA				NOISE N	IODE	L INPUTS	;	
Highway Data				Site	Condition	s (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	20,823 vehicle	es			,	Autos:	15		
Peak Hour	Percentage:	7.57%			Medium	rucks (2 A	xles):	15		
Peak H	lour Volume:	1,576 vehicle	s		Heavy Tr	ucks (3+ A	xles):	15		
Ve	ehicle Speed:	40 mph		Voh	icle Mix					
Near/Far La	ne Distance:	82 feet		ven	VehicleTy		Dav	Evening	Night	Daily
Site Data					venierery		77.5%	-	•	96.809
Ba	rrier Height:	0.0 feet			Medium	Trucks:	84.8%	4.9%	10.3%	1.76%
Barrier Type (0-V		0.0			Heavy	Trucks:	86.5%	2.7%	10.8%	1.44%
	ist. to Barrier:	60.0 feet		Noi	se Source	Elovation	(in f	ootl		
Centerline Dist.	to Observer:	60.0 feet		1401.	Au		000	el)		
Barrier Distance	to Observer:	0.0 feet			Au Iedium Truc		297			
Observer Height	(Above Pad):	5.0 feet			Heavy True		004	Grade Adju	istment <sup>.</sup>	0.0
P	ad Elevation:	0.0 feet								0.0
Ro	ad Elevation:	0.0 feet		Lan	e Equivale		e (in i	feet)		
	Road Grade:	0.0%			Au					
	Left View:	-90.0 degree	es		ledium Truc					
	Right View:	90.0 degre	es		Heavy True	ks: 43.9	909			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce F	inite Road	Fresn	el	Barrier Atte	n Berr	m Atten
Autos:	66.51	0.51		0.72	-1.2	)	-4.69	0.0	00	0.00
Medium Trucks:	77.72	-16.88		0.75	-1.2	)	-4.88	0.0	00	0.00
Heavy Trucks:	82.99	-17.76		0.74	-1.2	)	-5.34	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and	-							
								Ldn	CN	JEL
VehicleType	Leq Peak Hou			eq Eveni	•	q Night				
Autos:	Leq Peak Hou 66	.5	65.8		64.1	58.0		66.6		
Autos: Medium Trucks:	Leq Peak Hou 66 60	.5	65.8 60.1		64.1 53.7	58.0 52.2		60.6		60.
Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 66 60 64	.5 .4 .8	65.8 60.1 64.6		64.1 53.7 55.5	58.0 52.2 56.8		60.6 65.1		60. 65.
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 66 60 64 69	.5 .4 .8 .3	65.8 60.1 64.6 68.9		64.1 53.7	58.0 52.2		60.6		60. 65.
Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 66 60 64 69	.5 .4 .8 .3	65.8 60.1 64.6 68.9		64.1 53.7 55.5 65.0	58.0 52.2 56.8 61.1		60.6 65.1 69.6		60. 65. 70.
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 66 60 64 69	.5 .4 .8 .3 ontour (in feet	65.8 60.1 64.6 68.9		64.1 53.7 55.5 65.0 65.0	58.0 52.2 56.8 61.1 5 dBA		60.6 65.1 69.6		67. 60. 65. 70. dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Leq Peak Hou 66 60 64 69	.5 .4 .8 .3 ontour (in feet	65.8 60.1 64.6 68.9		64.1 53.7 55.5 65.0	58.0 52.2 56.8 61.1		60.6 65.1 69.6		60.9 65.0 70.0

	FHV	/A-RD-77-108	HIGHW	AY N	OISE PI	REDICT	ION MO	DEL			
Scenario: Road Name: Road Segment:		-					Name: I umber:		er Logistics	Center	R
SITE SP	ECIFIC IN	PUT DATA				N	IOISE N	IODE	L INPUT	5	
Highway Data				S	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Tra	affic (Adt):	24,602 vehicle	s				,	Autos:	15		
Peak Hour Pe	ercentage:	7.57%			Me	dium Tru	ucks (2 A	(xles):	15		
Peak Hou	r Volume:	1,862 vehicles	5		He	avy Truc	cks (3+ A	xles):	15		
Vehic	le Speed:	40 mph		v	ehicle l	Niv					
Near/Far Lane	Distance:	82 feet		v		icleType		Dav	Evening	Night	Daily
Site Data					ven			77.5%	•	9.6%	,
		0.0.6		_	Me	edium Ti		84.8%		10.3%	
	er Height:	0.0 feet 0.0				leavy Ti		86.5%		10.8%	
Barrier Type (0-Wall Centerline Dist.	,	0.0 60.0 feet								10.070	0.01 /
Centerline Dist. to		60.0 feet		N	loise Sc		evation		eet)		
Barrier Distance to		0.0 feet				Auto		000			
Observer Height (Ab		5.0 feet				n Truck		297			
• •	Elevation:	0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	ustment	: 0.0
	Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	e (in	feet)		
	ad Grade:	0.0%		F		Auto			,		
	Left View:	-90.0 degree	is.		Mediu	n Truck					
	ight View:	90.0 degree				y Truck		909			
FHWA Noise Model (	Calculations										
VehicleType	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	1.13		0.72	2	-1.20		-4.69	0.0	000	0.000
Medium Trucks:	77.72	-16.27		0.75	5	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	82.99	-12.75		0.74		-1.20		-5.34	0.0	000	0.000
Unmitigated Noise L					<b>/</b>						
	eq Peak Hou			eq Ev	•	Leq	Night		Ldn		NEL
Autos:	67.	-	6.5		64.7		58.6		67.3		67.9
Medium Trucks:	61.	-	60.7		54.3		52.8		61.2		61.5
Heavy Trucks:	69.	-	69.6		60.5		61.8		70.1		70.3
Vehicle Noise:	72.	-	71.7		66.4		63.9		72.3	)	72.6
Centerline Distance	to Noise Co	ntour (in feet)		70 d	DA I	65	dBA	4	50 dBA	FF	dBA
			L day	70 ai	BA 85	00	ова 184			55	ава 854
			Ldn: JEL:		85 89		184 192		396 415		854 893
		Cr	VEL.		89		192		415		893

	FHV	/A-RD-77-108	HIGH	WAY NC	ISE PR	EDICTI	ON MO	DEL			
Road Nam	o: EA Without e: Willow Av. nt: n/o Valley B	,					Vame: Imber:		r Logistics	Center F	२
SITE	SPECIFIC IN	PUT DATA				N	OISE M	IODE		s	
Highway Data				Si	te Cona	litions (	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	4,706 vehicle	s					Autos:	15		
Peak Hour	Percentage:	7.57%			Med	lium Tru	cks (2 /	Axles):	15		
Peak H	our Volume:	356 vehicles	5		Hea	vy Truc	ks (3+ /	Axles):	15		
	hicle Speed:	40 mph		Ve	hicle M	lix					
Near/Far Lai	ne Distance:	12 feet		-		leType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	96.78
Bar	rier Height:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	1.779
Barrier Type (0-W	-	0.0			н	eavy Tr	ucks:	86.5%	2.7%	10.8%	1.459
Centerline Dis		32.0 feet		A1.	oise Sou	urco El	wation	e (in f	of		
Centerline Dist.	to Observer:	32.0 feet		/•0	iise sol	Autos		5 (11 16 000	el)		
Barrier Distance	to Observer:	0.0 feet			Medium			297			
Observer Height (	Above Pad):	5.0 feet				/ Trucks		004	Grade Ad	iustment	0.0
Pa	ad Elevation:	0.0 feet		_							
	ad Elevation:	0.0 feet		La	ne Equ				feet)		
F	Road Grade:	0.0%				Autos		828			
	Left View:	-90.0 degree			Medium			548			
	Right View:	90.0 degree	s		Heavy	/ Trucks	: 31.	576			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite F	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	-5.95		2.84		-1.20		-4.51		000	0.00
Medium Trucks:	77.72	-23.33		2.90		-1.20		-4.86		000	0.00
Heavy Trucks:	82.99	-24.20		2.89		-1.20		-5.72	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and	barrie	r attenua	ation)						
	Leq Peak Hou			Leq Eve		Leq I	•		Ldn		VEL
Autos:	62.	-	61.5		59.7		53.7		62.3		62.
Medium Trucks:	56.		55.8		49.4		47.9		56.3	-	56.
Heavy Trucks: Vehicle Noise:	60.	-	60.3 64.6		51.2		52.5		60.8		61.
	65.				60.7		56.7		65.2	2	65.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dE		65 c	DA	4	0 dBA	55	dBA
			Ldn:	7∪ dE	A 15	00 0	BA 33		0 ава 72		ава 15-

Tuesday, June 15, 2021

						_					-
	Existing + P	roject							er Logistics	Center F	2
Road Name:						Job Ni	imber: 13	3681			
Road Segment:	e/o Riversid	e Av.									
	ECIFIC IN	PUT DATA							L INPUTS	;	
Highway Data					Site Con	ditions (	Hard = 1	0, Sc	oft = 15)		
Average Daily Tra	ffic (Adt):	15,581 vehicle	s				A	utos:	15		
Peak Hour Per	rcentage:	7.57%			Mee	dium Tru	cks (2 A)	(les):	15		
Peak Hour	Volume:	1,179 vehicles			Hea	avy Truc	ks (3+ A)	(les):	15		
Vehicl	e Speed:	40 mph		F	Vehicle N	Aix					
Near/Far Lane I	Distance:	82 feet		-		cleType	E	Dav	Evening	Night	Daily
Site Data							utos: 7	7.5%	•	9.6%	96.79%
Barrie	r Height:	0.0 feet			Ме	dium Tr	ucks: 8	4.8%	4.9%	10.3%	1.77%
Barrier Type (0-Wall,	•	0.0			H	leavy Tr	ucks: 8	6.5%	2.7%	10.8%	1.44%
Centerline Dist. t	o Barrier:	60.0 feet		-	Noise So	urco Ela	vations	(in fe	oof)		
Centerline Dist. to 0	Observer:	60.0 feet		F	10130 00	Autos					
Barrier Distance to (	Observer:	0.0 feet			Madium	n Trucks					
Observer Height (Abo	ove Pad):	5.0 feet				y Trucks			Grade Adju	istment <sup>.</sup>	0.0
Pad E	elevation:	0.0 feet			neav	y mucho	. 0.00	04	0/000/10/0	iotimonit.	0.0
Road E	Elevation:	0.0 feet			Lane Equ	iivalent	Distance	e (in i	feet)		
Roa	ad Grade:	0.0%				Autos		91			
L	eft View:	-90.0 degree	s		Mediun	n Trucks	: 43.8	90			
Ri	ght View:	90.0 degree	s		Heav	y Trucks	43.9	09			
FHWA Noise Model C	alculations	;									
VehicleType I	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	e/	Barrier Atte	n Ben	m Atten
Autos:	66.51	-0.75		0.7	2	-1.20		4.69	0.0	00	0.000
Medium Trucks:	77.72	-18.14		0.7	5	-1.20		4.88	0.0	00	0.000
Heavy Trucks:	82.99	-19.02		0.7	4	-1.20	-	5.34	0.0	00	0.000
Unmitigated Noise Le	evels (witho	ut Topo and I	barrie	r atten	uation)						
	q Peak Hou			Leq E	vening	Leq I	•		Ldn	CI	IEL
Autos:	65.	-	64.6		62.8		56.8		65.4		66.0
Medium Trucks:	59.	-	58.8		52.5		50.9		59.4		59.6
Heavy Trucks:	63.		53.3		54.3		55.5		63.9		64.0
Vehicle Noise:	68.	1 (	67.6		63.7		59.8		68.3		68.7
Centerline Distance t	o Noise Co	ntour (in feet)									
			L	70	dBA	65 a		6	60 dBA	55	dBA
			.dn:		46		100		215 228		462
			IEL:		49		106				491

FHWA-RD-77-108 HIG	GHWAY N	IOISE PRED		DEL			
Scenario: EA Without Project Road Name: Riverside Av.			ject Name: 1 b Number: 1		r Logistics	Center R	
Road Segment: s/o Valley Bl.							
SITE SPECIFIC INPUT DATA			NOISE N	IODE	L INPUTS	5	
Highway Data	5	Site Conditio	ons (Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 46,718 vehicles			,	Autos:	15		
Peak Hour Percentage: 7.57%		Mediun	n Trucks (2 A	(xles)	15		
Peak Hour Volume: 3,537 vehicles		Heavy	Trucks (3+ A	(xles):	15		
Vehicle Speed: 40 mph	1	/ehicle Mix					
Near/Far Lane Distance: 76 feet	F	Vehicle7	vpe	Day	Evening	Night	Daily
Site Data				77.5%	12.9%	9.6%	96.78
Barrier Height: 0.0 feet		Mediu	n Trucks:	84.8%	4.9%	10.3%	1.77
Barrier Type (0-Wall, 1-Berm): 0.0		Heav	y Trucks:	86.5%	2.7%	10.8%	1.45
Centerline Dist. to Barrier: 60.0 feet		Voise Sourc	e Elevation	: (in fe	ef)		
Centerline Dist. to Observer: 60.0 feet	ŕ			000			
Barrier Distance to Observer: 0.0 feet		Medium Tr		297			
Observer Height (Above Pad): 5.0 feet		Heavy Tr			Grade Adj	ustment:	0.0
Pad Elevation: 0.0 feet	_						
Road Elevation: 0.0 feet	1	ane Equiva			eet)		
Road Grade: 0.0%		A Medium Tr	utos: 46. ucks: 46.				
Left View: -90.0 degrees Right View: 90.0 degrees		Heavy Tr					
FHWA Noise Model Calculations							
	listance	Finite Roa	d Fresn	el I	Barrier Atte	n Berr	n Atter
Autos: 66.51 4.02	0.34	4 -1.	20	-4.69	0.0	00	0.00
Medium Trucks: 77.72 -13.36	0.3			-4.88	0.0		0.00
Heavy Trucks: 82.99 -14.24	0.3		20	-5.34	0.0	00	0.00
•		<i>(</i> -1.	20				
		uation)					
VehicleType Leq Peak Hour Leq Day	Leg Ev	uation) /ening [	.eq Night		Ldn	CN	
VehicleType Leq Peak Hour Leq Day Autos: 69.7 69.0	Leq Ev	uation) vening 1 67.2	.eq Night 61.2		69.8		70
VehicleType         Leq Peak Hour         Leq Day           Autos:         69.7         69.0           Medium Trucks:         63.5         63.2	Leq E	uation) vening 1 67.2 56.9	<i>eq Night</i> 61.2 55.3		69.8 63.8		70 64
VehicleType         Leg Peak Hour         Leg Day           Autos:         69.7         69.0           Medium Trucks:         63.5         63.2           Heavy Trucks:         67.9         67.7	Leq E	uation) vening 1 67.2	.eq Night 61.2	1	69.8		70 64 68
VehicleType         Leq Peak Hour         Leq Day           Autos:         69.7         69.0           Medium Trucks:         63.5         63.2           Heavy Trucks:         67.9         67.7           Vehicle Noise:         72.5         72.0	Leq E	uation) /ening [ 67.2 56.9 58.7	eq Night 61.2 55.3 59.9	1	69.8 63.8 68.3		70 64 68
Autos:         69.7         69.0           Medium Trucks:         63.5         63.2           Heavy Trucks:         67.9         67.7	Leq E	uation) rening 1 67.2 56.9 58.7 68.1	eq Night 61.2 55.3 59.9		69.8 63.8 68.3		70 64 68 73
VehicleType         Leq Peak Hour         Leq Day           Autos:         69.7         69.0           Medium Trucks:         63.5         63.2           Heavy Trucks:         67.9         67.7           Vehicle Noise:         72.5         72.0	Leq Ev	uation) rening 1 67.2 56.9 58.7 68.1	<i>eq Night</i> 61.2 55.3 59.9 64.2		69.8 63.8 68.3 72.7		70 64 68 73

	FHV	VA-RD-77-108	HIGHWAY	NOISE P	REDICTI	ION MOI	DEL			
	o: EA Without e: Valley Bl. nt: w/o Dwy. 1	Project				Name: E umber: 1		r Logistics	Center I	۲
SITE	SPECIFIC IN	PUT DATA			N	IOISE N	IODE	L INPUTS	3	
Highway Data				Site Cor	nditions	(Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	21,571 vehicle	s				Autos:	15		
Peak Hour	Percentage:	7.57%		Me	edium Tru	ucks (2 A	xles):	15		
Peak H	our Volume:	1,633 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Vel	nicle Speed:	40 mph		Vehicle	Mix					
Near/Far Lar	ne Distance:	82 feet			icleType		Dav	Evening	Night	Daily
Site Data							77.5%	12.9%	9.6%	
	rier Height:	0.0 feet		м	edium Tr	rucks:	84.8%	4.9%	10.3%	1.77%
Barrier Type (0-W		0.0			Heavy Tr	rucks:	86.5%	2.7%	10.8%	1.45%
Centerline Dis	. ,	60.0 feet								
Centerline Dist. 1		60.0 feet		Noise S				et)		
Barrier Distance t	o Observer:	0.0 feet			Autos		000			
Observer Height (		5.0 feet			m Trucks					
• •	d Elevation:	0.0 feet		Hea	vy Truck	s: 8.0	004	Grade Adj	ustment	0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	eet)		
F	Road Grade:	0.0%			Autos	s: 44.0	)91			
	Left View:	-90.0 degree	s	Mediu	m Trucks	s: 43.8	390			
	Right View:	90.0 degree	s	Hea	vy Trucks	s: 43.9	909			
FHWA Noise Mode	l Calculations	S								
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresn		Barrier Atte	en Ber	m Atten
Autos:	66.51	0.66	-	.72	-1.20		-4.69	0.0		0.00
Medium Trucks:	77.72	-16.71	-	.75	-1.20		-4.88	0.0		0.000
Heavy Trucks:	82.99	-17.59	0	.74	-1.20		-5.34	0.0	00	0.000
Unmitigated Noise				,						
	Leq Peak Hou			Evening		Night		Ldn		VEL
Autos:	66		6.0	64.2		58.2		66.8		67.4
Medium Trucks:	60. 64		50.2 54.7	53.9		52.3		60.8		61.0
Heavy Trucks: Vehicle Noise:	64		54.7 59.0	55.7 65.1		56.9 61.2		65.3 69.7		65.4 70.1
				1.60		01.2		09.7		70.
Centerline Distanc	e to Noise Co	ontour (in feet)		0 dBA	65	dBA	6	0 dBA	55	dBA
			dn:	57	0.01	124	0	267	- 55	575
			IEL:	61		124		283		610
		Ch		51		102		200		010

	FHW	A-RD-77-108	HIGH	NAY NC	ISE PREI		N MOL	EL			
	EA Without I	Project		Project Name: Birtcher Logistics Center R							
Road Name:					J	ob Nur	nber: 1	3681			
Road Segment:	e/o Riverside	e Av.									
	ECIFIC IN	PUT DATA							LINPUT	5	
Highway Data				Si	te Condit	ons (H	lard = 1	0, So	ft = 15)		
Average Daily Tr	, ,	16,164 vehicle	5					utos:	15		
Peak Hour Pe	•	7.57%					ks (2 A)		15		
		1,224 vehicles			Heavy	Truck	s (3+ A)	xles):	15		
	le Speed:	40 mph		Ve	hicle Mix						
Near/Far Lane	Distance:	82 feet			Vehicle	Туре	E	Day	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	96.78
Barrie	er Height:	0.0 feet			Media	ım Tru	cks: 8	4.8%	4.9%	10.3%	1.779
Barrier Type (0-Wall	•	0.0			Hea	vy Tru	cks: 8	6.5%	2.7%	10.8%	1.45
Centerline Dist.	to Barrier:	60.0 feet		N	ise Sour	o Flov	ations	(in fe	of)		
Centerline Dist. to	Observer:	60.0 feet				Autos:	0.0				
Barrier Distance to	Observer:	0.0 feet			Medium T		2.2				
Observer Height (At	ove Pad):	5.0 feet			Heavy 7		8.0		Grade Ad	iustment	0.0
Pad	Elevation:	0.0 feet								aounom	0.0
Road	Elevation:	0.0 feet		Lá	ne Equiv				'eet)		
	ad Grade:	0.0%				Autos:	44.0				
	Left View:	-90.0 degree			Medium T		43.8				
R	light View:	90.0 degree	5		Heavy 1	rucks:	43.9	09			
FHWA Noise Model	Calculations										
VehicleType		Traffic Flow	Dista	ance	Finite Ro		Fresne		Barrier Atte		m Atten
Autos:	66.51	-0.59		0.72		.20		4.69		000	0.00
Medium Trucks:	77.72	-17.97		0.75		.20		4.88		000	0.00
Heavy Trucks:	82.99	-18.85		0.74	-	1.20	-	5.34	0.0	000	0.00
Unmitigated Noise L											
	eq Peak Hour			Leq Eve	•	Leq Ni			Ldn		VEL
Autos:	65.4		4.7		63.0		56.9		65.5		66.
Medium Trucks:	59.3		9.0		52.6		51.1		59.6		59.
Heavy Trucks: Vehicle Noise:	63.7		3.5		54.4		55.7		64.0		64.
Vehicle Noise:	68.3	3 6	7.8		63.9		60.0		68.5	)	68
Centerline Distance	to Noise Cor	ntour (in feet)		70.07		05.15					
			. L	70 dE		65 dE		6	0 dBA		dBA
			.dn:		47		102		220		474
			EL :		50		108		234		504

Tuesday, June 15, 2021

FH	WA-RD-77-108 HI	GHWAY	NOISE PF	REDICTIO	ON MODE	<u> </u>	
Scenario: EA Without	ıt Project					cher Logistics	Center R
Road Name: Valley Bl.				Job Nu	mber: 136	81	
Road Segment: e/o Willow	Av.						
SITE SPECIFIC I	NPUT DATA					DEL INPUTS	1
Highway Data			Site Con	ditions (l	Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt):	24,246 vehicles				Aut		
Peak Hour Percentage:	7.57%				cks (2 Axle	., .	
Peak Hour Volume:	1,835 vehicles		Hea	avy Truck	(s (3+ Axle	s): 15	
Vehicle Speed:	40 mph	ŀ	Vehicle N	lix			
Near/Far Lane Distance:	82 feet	-	Vehi	cleType	Da	/ Evening	Night Daily
Site Data				A	utos: 77.	5% 12.9%	9.6% 96.78
Barrier Height:	0.0 feet		Me	dium Tru	icks: 84.	8% 4.9%	10.3% 1.77
Barrier Type (0-Wall, 1-Berm):	0.0		H	leavy Tru	icks: 86.	5% 2.7%	10.8% 1.45
Centerline Dist. to Barrier:	60.0 feet	ŀ	Noise So	urce Ele	vations (ii	n feet)	
Centerline Dist. to Observer:	60.0 feet	1		Autos			
Barrier Distance to Observer:	0.0 feet		Mediur	n Trucks			
Observer Height (Above Pad):	5.0 feet			y Trucks		Grade Adju	istment: 0.0
Pad Elevation:	0.0 feet	-					
Road Elevation:	0.0 feet	-	Lane Equ		Distance (	,	
Road Grade:	0.0%			Autos:			
Left View:	-90.0 degrees			n Trucks:			
Right View:	90.0 degrees		Heav	y Trucks:	43.909		
FHWA Noise Model Calculation	าร						
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	n Berm Atter
Autos: 66.5		0.7	-	-1.20	-4.		
Medium Trucks: 77.72		0.7	-	-1.20	-4.		
Heavy Trucks: 82.99	-17.08	0.7	74	-1.20	-5.3	34 0.0	0.0
Unmitigated Noise Levels (with	nout Topo and bar	rrier atter	nuation)				
VehicleType Leq Peak Ho	, .,		vening	Leq N	•	Ldn	CNEL
	7.2 66.	-	64.7		58.7	67.3	67
	1.1 60.	-	54.4		52.9	61.3	-
	5.5 65.	-	56.2		57.5	65.8	65
Vehicle Noise: 7	0.0 69.	5	65.6		61.7	70.2	70
Centerline Distance to Noise C	contour (in feet)						
			dBA	65 d		60 dBA	55 dBA
	Ldr		62		134	288	62
	CNEL		66		142	306	66

		VA-RD-77-108	HIGHW/	NOISE						
Scenario: Road Name:	EA With Pro	oject				Name: E umber: 1		r Logistics	Center F	२
Road Segment		:1			JUD N	umber. I	3001			
ç	,	PUT DATA		1			0.00			
SILE SI Highway Data	PECIFIC IN	PUIDAIA		Site Co	nditions				,	
Average Daily Tr	offic (Adt):	5.177 vehicle	c	one et	nanaono	•	utos:	15		
Peak Hour P	, ,	7.57%	5	٨	ledium Tr			15		
	ur Volume:	392 vehicles			leavy Tru			15		
	cle Speed:	40 mph		Vehicle			,			
Near/Far Lane	Distance:	12 feet			hicleType		Day	Evenina	Niaht	Dailu
Site Data				Ve			77.5%	12.9%	9.6%	Daily 94.04
				-	, Medium T		34.8%	4.9%	10.3%	1.67
Barrier Type (0-Wai	er Height:	0.0 feet 0.0			Heavy T		36.5%		10.8%	
Centerline Dist.	. ,	32.0 feet								
Centerline Dist. to		32.0 feet		Noise	Source El			et)		
Barrier Distance to		0.0 feet			Auto					
Observer Height (A		5.0 feet			um Truck					
÷ (	Elevation:	0.0 feet		He	avy Truck	s: 8.0	04	Grade Adjı	istment:	0.0
Road	Elevation:	0.0 feet		Lane E	quivalen	Distanc	e (in i	eet)		
Ro	ad Grade:	0.0%			Auto	s: 31.8	28			
	Left View:	-90.0 degree	s	Med	um Truck	s: 31.5	48			
F	Right View:	90.0 degree	s	He	avy Truck	s: 31.5	76			
FHWA Noise Model	Calculation	5								
VehicleType	REMEL	Traffic Flow	Distan		e Road	Fresne		Barrier Atte		m Atte
Autos:	66.51	-5.66		2.84	-1.20		4.51	0.0		0.0
Medium Trucks:	77.72	-23.17		2.90	-1.20		4.86	0.0		0.0
Heavy Trucks:	82.99	-19.07		2.89	-1.20	-	5.72	0.0	00	0.0
Unmitigated Noise L	evels (with	out Topo and I	oarrier a	ttenuation	)					
	eq Peak Hou			q Evening	,	Night		Ldn	CI	VEL
Autos:	62		51.8	60	-	54.0		62.6		63
Medium Trucks:	56		55.9	49	-	48.0		56.5		56
Heavy Trucks:	65		65.4	56		57.6		66.0		66
Vehicle Noise:	67		67.3	61	9	59.5		67.9		68
Centerline Distance	to Noise Co	ntour (in feet)		-			_	-		
				70 dBA		dBA	6	0 dBA	55	dBA
			dn:	2		50		108		23
		-	IEL:	2	-	50 52		113		23

	FH\	NA-RD-77-108 H	IIGHWAY	NOISE P	REDICTI		EL			
Road Nam	o: EA With Pr e: Riverside A nt: s/o Valley B	w.				Name: Bi umber: 13		ogistics C	enter F	2
SITE	SPECIFIC IN	IPUT DATA			N	OISE MO	ODEL I	NPUTS		
Highway Data				Site Con	ditions (	Hard = 1	0, Soft =	= 15)		
Average Daily	Traffic (Adt):	47,970 vehicles				AL	utos:	15		
Peak Hour	Percentage:	7.57%		Me	dium Tru	icks (2 Ax	les):	15		
Peak H	our Volume:	3,631 vehicles		He	avy Truc	ks (3+ Ax	les):	15		
Vei	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far Lar	ne Distance:	76 feet			icleType	D	av Ev	ening I	Vight	Daily
Site Data				VCII			.,	12.9%	9.6%	
	rier Height:	0.0 feet		м	edium Tri	ucks: 84	4.8%		10.3%	1.75%
Barrier Type (0-W	•	0.0			Heavy Tr		6.5%		10.8%	2.69%
Centerline Dis	. ,	60.0 feet								
Centerline Dist		60.0 feet		Noise Se		evations	. /			
Barrier Distance		0.0 feet			Autos					
Observer Height (		5.0 feet			m Trucks					
÷ (	ad Elevation:	0.0 feet		Heav	vy Trucks	8.00	)4 Gr	ade Adjus	stment:	0.0
	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet	)		
F	Road Grade:	0.0%			Autos	: 46.70	01			
	Left View:	-90.0 degrees		Mediu	m Trucks	: 46.51	1			
	Right View:	90.0 degrees		Heav	vy Trucks	46.53	30			
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distance		Road	Fresnel		rier Atter		m Atten
Autos:	66.51	4.08		34	-1.20		1.69	0.00		0.000
Medium Trucks:	77.72	-13.30		37	-1.20		1.88	0.00		0.000
Heavy Trucks:	82.99	-11.43		37	-1.20	-5	5.34	0.00	0	0.000
Unmitigated Noise										
VehicleType Autos:	Leq Peak Hou		Leq.	Evening 67.3	Leq I	vignt 61.2	Ld	n 69.8	CI	VEL 70.4
Autos: Medium Trucks:	69		9.0 3.3	67.3 56.9		61.2 55.4		69.8 63.8		70.4 64.1
	70		5.3 ).5	56.9 61.5		55.4 62.7		03.8 71.1		71.2
Heavy Trucks: Vehicle Noise:	70		3.3	68.6		65.5		71.1		74.3
				00.0		00.0		74.0		74.0
Centerline Distanc	e to Noise Co	ontour (in feet)	70	) dBA	65 a	iBA	60 d	BA	55	dBA
		Le	dn:	110		237		512		1.102
		CNE		116		250		538		1,159
										,

		-RD-77-108											
Scenario: EA		ct							er Logistics	Center I	२		
Road Name: Va Road Seament: e/o						Job I	Number:	13681					
SITE SPEC	IFIC INPU	JT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
Highway Data					Site Cond	litions			,				
Average Daily Traffic	. ,	,543 vehicle	s					Autos:					
Peak Hour Perce	•	.57%					rucks (2 /	,					
Peak Hour V	,	934 vehicles	•		Hea	ivy Tru	ıcks (3+ /	Axles):	15				
Vehicle		40 mph		1	Vehicle N	lix							
Near/Far Lane Dis	stance:	82 feet			Vehi	cleTyp	e	Day	Evening	Night	Daily		
Site Data							Autos:	77.5%	12.9%	9.6%	94.50%		
Barrier H	leight:	0.0 feet		]				84.8%		10.3%	1.729		
Barrier Type (0-Wall, 1-	Berm):	0.0			н	eavy 1	Trucks:	86.5%	2.7%	10.8%	3.78		
Centerline Dist. to I	Barrier:	60.0 feet		5	Noise So	urce E	levation	s (in fe	eet)				
Centerline Dist. to Ob	server:	60.0 feet		-		Auto		000	,				
Barrier Distance to Ob		0.0 feet			Mediun			297					
Observer Height (Above		5.0 feet			Heav	Truck	ks: 8.	004	Grade Ad	justment	0.0		
Pad Ele		0.0 feet		H									
Road Ele		0.0 feet		4	Lane Equ				feet)				
		0.0%			Mediun	Auto		091					
		90.0 degree				r Truci 7 Truci		890 909					
Righ	t View:	90.0 degree	s		neav	y muci	(5. 43.	909					
FHWA Noise Model Cal	culations												
VehicleType RE	MEL T	raffic Flow	Di	stance	Finite I	Road	Fresr	nel	Barrier Att	en Ber	m Atten		
Autos:	66.51	1.29		0.7	2	-1.20		-4.69	0.0	000	0.00		
Medium Trucks:	77.72	-16.11		0.7		-1.20		-4.88		000	0.00		
Heavy Trucks:	82.99	-12.69		0.7	4	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise Leve	els (without	Topo and I	barri	er atten	uation)								
VehicleType Leq F	Peak Hour	Leq Day		Leq E	vening	Leq	Night		Ldn	C	VEL		
Autos:	67.3	(	6.6		64.9		58.8	3	67.4	4	68.		
Medium Trucks:	61.2		50.9		54.5		53.0		61.4		61.		
Heavy Trucks:	69.8		69.6		60.6		61.8		70.2		70.		
Vehicle Noise:	72.1	1	71.8		66.5		64.0	)	72.4	4	72.		
Centerline Distance to I	Noise Cont	our (in feet)											
				70 0	1BA	65	dBA	6	60 dBA	55	dBA		
		1	.dn:		87		187		403		86		
		~	IEL :		91		196		421		908		

Tuesday, June 15, 2021

	FHWA-RD	D-77-108 H	HIGHWA	AY NO	ISE PR	EDICTIO	ом ис	DEL			
Scenario: EA Witt Road Name: Valley E Road Segment: w/o Dw	BI.						Vame: E mber: 1		r Logistics	Center	۲
SITE SPECIFIC	INPUT	DATA							L INPUT	5	
Highway Data				Si	te Conc	litions (l	Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Ad	): 21,66	1 vehicles	6					Autos:	15		
Peak Hour Percentag	e: 7.57	%			Mea	lium Truc	cks (2 A	xles):	15		
Peak Hour Volum	e: 1,640	vehicles			Hea	ivy Truck	ks (3+ A	xles):	15		
Vehicle Spee	d: 40	mph		Ve	hicle M	lix					
Near/Far Lane Distanc	e: 82	feet				cleType		Day	Evening	Night	Daily
Site Data								77.5%	•	9.6%	,
Barrier Heigh	t: 0.	0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.76
Barrier Type (0-Wall, 1-Bern					н	eavy Tru	icks:	86.5%	2.7%	10.8%	1.449
Centerline Dist. to Barrie	er: 60.	0 feet		No	nica Sa	urce Ele	vations	in fa	oof)		
Centerline Dist. to Observe	er: 60.	0 feet			//30 000	Autos					
Barrier Distance to Observe	er: 0.	0 feet			Medium	n Trucks:					
Observer Height (Above Pac	l): 5.	0 feet				/ Trucks:		004	Grade Adj	ustment	0.0
Pad Elevatio	n: 0.	0 feet		_							
Road Elevatio		0 feet		La	ne Equ	ivalent			feet)		
Road Grad	,					Autos:					
Left Vier		0 degrees				Trucks:					
Right View	v: 90.	0 degrees	6		Heavy	/ Trucks:	43.9	909			
FHWA Noise Model Calculat	ions										
VehicleType REMEL	Traffi	ic Flow	Distan		Finite F		Fresn	e/	Barrier Atte	en Ber	m Atter
	.51	0.68		0.72		-1.20		-4.69	0.0		0.00
	.72	-16.71		0.75		-1.20		-4.88	0.0		0.00
Heavy Trucks: 82	.99	-17.59		0.74		-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels (w											
VehicleType Leq Peak		Leq Day		q Eve	•	Leq N			Ldn		NEL
Autos:	66.7	-	6.0		64.3		58.2		66.8		67
Medium Trucks:	60.5	-	0.2		53.9		52.3		60.8		61
Heavy Trucks:	64.9		4.7		55.7		56.9		65.3		65
Vehicle Noise:	69.5	6	9.0		65.2		61.2		69.7	,	70
Centerline Distance to Noise	e Contour	' (in feet)						r		1	
				70 dB		65 d		6	i0 dBA	55	dBA
											57
		L CN	dn:		58 61		124 132		267 284		61

	FHV	VA-RD-77-108	HIGHWA	AY NOISE P	REDICT	ION MODE	L		
Road Nan	rio: EA With Pro ne: Valley Bl. nt: e/o Riversid					Name: Bir umber: 13	tcher Logistics 681	Center F	R
SITE	SPECIFIC IN	PUT DATA			N	IOISE MO	DEL INPUT	5	
Highway Data				Site Col	nditions	(Hard = 10	), Soft = 15)		
Average Daily	Traffic (Adt):	16,209 vehicle	s			Au	tos: 15		
Peak Hour	Percentage:	7.57%		M	edium Tr	ucks (2 Axl	es): 15		
Peak H	lour Volume:	1,227 vehicles	;	He	avy Tru	cks (3+ Axl	es): 15		
Ve	hicle Speed:	40 mph		Vehicle	Miv				
Near/Far La	ne Distance:	82 feet			nicleType	Da	ay Evening	Night	Daily
Site Data							.5% 12.9%	9.6%	
Ba	rrier Height:	0.0 feet		N	ledium T	rucks: 84	.8% 4.9%	10.3%	1.77
Barrier Type (0-V		0.0			Heavy T	rucks: 86	6.5% 2.7%	10.8%	1.44
	st. to Barrier:	60.0 feet		Noine C	ouroo E	evations (	in faat)		
Centerline Dist.	to Observer:	60.0 feet		Noise 3	Auto				
Barrier Distance	to Observer:	0.0 feet		A 4	Auto m Truck				
Observer Height	(Above Pad):	5.0 feet			vy Truck			iustment	· 0 0
P	ad Elevation:	0.0 feet		i ica	vy muck	s. 0.004	4 0/880 Auj	ustinent	. 0.0
Ro	ad Elevation:	0.0 feet		Lane Ec	uivalen	Distance	(in feet)		
	Road Grade:	0.0%			Auto	s: 44.09	1		
	Left View:	-90.0 degree	s	Mediu	m Truck	s: 43.89	0		
	Right View:	90.0 degree	s	Hea	vy Truck	s: 43.90	9		
FHWA Noise Mod	el Calculations	5							
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	Road	Fresnel	Barrier Atte	en Ber	m Atte
Autos:		-0.58		0.72	-1.20			000	0.0
Medium Trucks:	=	-17.97		0.75	-1.20			000	0.0
Heavy Trucks:	82.99	-18.85		0.74	-1.20	-5.	.34 0.0	000	0.0
Unmitigated Nois									
VehicleType	Leq Peak Hou			q Evening		Night	Ldn		NEL
Autos:	65		54.8	63.0		56.9	65.6		66
Medium Trucks:			59.0	52.6		51.1	59.6		59
Heavy Trucks:			33.5	54.4		55.7	64.0		64
Vehicle Noise:			67.8	63.9	1	60.0	68.5	)	68
Centerline Distan	ce to Noise Co	ntour (in feet)		70 - 10 4		-10.4	co -/D 4		-10.4
				70 dBA	65	dBA	60 dBA		dBA
			Ldn:	47		102	220		47
		~	IEL:	50		109	234		50

	FHV	VA-RD-77-108	HIGHWA	AY NC	ISE PF	REDICTIO	ON MOI	DEL			
	o: EAC Withou e: Willow Av. t: n/o Valley E	,				Project N Job Nu			r Logistics	Center	R
SITES	SPECIFIC IN	PUT DATA				NC	DISE M	ODE	L INPUT	5	
Highway Data				Si	te Con	ditions (l	Hard =	10, So	oft = 15)		
	Traffic (Adt): Percentage: our Volume:	6,320 vehicle 7.57% 478 vehicles				dium Truc avy Truck	ks (2 A	,	15 15 15		
Vel	icle Speed:	40 mph		Ve	hicle <b>N</b>	liv					
Near/Far Lar	e Distance:	12 feet		ve		cleType		Dav	Evening	Night	Daily
Site Data					VCIII			77.5%	•	9.6%	,
	rier Height:	0.0 feet			Ме	edium Tru	cks:	84.8%	4.9%	10.3%	
Barrier Type (0-W	•	0.0			H	leavy Tru	cks:	86.5%	2.7%	10.8%	
Centerline Dis	. ,	32.0 feet		-		·					
Centerline Dist. 1		32.0 feet		No	oise So	urce Ele			eet)		
Barrier Distance t		0.0 feet				Autos:					
Observer Height (	Above Pad);	5.0 feet				n Trucks:			0		
• •	d Elevation:	0.0 feet			Heav	y Trucks:	8.0	104	Grade Ad	usimeni	. 0.0
Roa	d Elevation:	0.0 feet		La	ne Equ	ivalent l	Distanc	e (in i	feet)		
F	Road Grade:	0.0%				Autos:	31.8	328			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	31.5	548			
	Right View:	90.0 degree	s		Heav	y Trucks:	31.5	576			
FHWA Noise Mode	I Calculation:	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	66.51	-4.67		2.84		-1.20	-	4.51	0.0	000	0.00
Medium Trucks:	77.72	-22.04		2.90		-1.20		4.86	0.0	000	0.00
Heavy Trucks:	82.99	-22.92		2.89		-1.20		5.72	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and I	barrier a	ttenua	ation)						
	Leq Peak Hou			q Eve		Leq N	•		Ldn		NEL
Autos:	63		52.8		61.0		55.0		63.6		64.
Medium Trucks:	57		57.1		50.7		49.2		57.6		57.
Heavy Trucks:	61	-	61.5		52.5		53.8		62.1		62.
Vehicle Noise:	66	.3	65.8		61.9		58.0		66.5	5	66.
Centerline Distanc	e to Noise Co	ontour (in feet)									
				70 dB	A	65 di	BA	6	60 dBA	55	dBA
			dn:		19		40		87		188
			IEL:		20		43		93		199

	FHWA	A-RD-77-108	HIG	HWAY NO	DISE PR	EDICT	ION MO	DEL			
Scenario: EAC V Road Name: Valley Road Segment: w/o Dv	BI.	Project					Name: lumber:		er Logistics	Center F	२
SITE SPECIFI	C INP	UT DATA				N	IOISE	NODE	L INPUT	s	
Highway Data				S	ite Conc	litions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (A	dt): 2	3,179 vehicle	es					Autos:	15		
Peak Hour Percenta	ge:	7.57%			Med	lium Tr	ucks (2 /	Axles):	15		
Peak Hour Volur		,755 vehicle:	s		Hea	vy Tru	cks (3+ /	Axles):	15		
Vehicle Spe		40 mph		V	ehicle M	ix					
Near/Far Lane Distan	ce:	82 feet				leType		Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	96.789
Barrier Heig	ht:	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.779
Barrier Type (0-Wall, 1-Ber		0.0		1	н	eavy T	rucks:	86.5%	2.7%	10.8%	1.459
Centerline Dist. to Barr	ier:	60.0 feet		N	oise So	urco E	lovation	e (in fi	aof)		
Centerline Dist. to Observ	/er:	60.0 feet		~	0136 000	Auto		000			
Barrier Distance to Observ	/er:	0.0 feet			Medium			297			
Observer Height (Above Pa		5.0 feet				/ Truck		004	Grade Ad	iustment.	0.0
Pad Elevati		0.0 feet									
Road Elevati		0.0 feet		L	ane Equ			_	feet)		
Road Gra		0.0%				Auto		091			
Left Vie		-90.0 degree			Medium	1 Truck / Truck		890 909			
Right Vi	ew:	90.0 degree	es		neavy	TIUCK	5. 43.	909			
FHWA Noise Model Calcula											
VehicleType REME		Traffic Flow	Di	stance	Finite I		Fresr		Barrier Att		m Atten
	6.51	0.97		0.72		-1.20		-4.69		000	0.00
	7.72	-16.40		0.75		-1.20		-4.88		000	0.00
	2.99	-17.28		0.74		-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels (					<u> </u>						
VehicleType Leq Peal		Leq Day		Leq Eve	•	Leq	Night		Ldn	-	VEL
Autos:	67.0 60.9		66.3 60.6		64.5 54.2		58.	-	67.		67. 61.
Medium Trucks: Heavy Trucks:	65.3		60.6 65.0		54.2 56.0		52.1 57.1		61. 65.0		61. 65.
Vehicle Noise:	69.8		69.4		56.0 65.5		57.s		70.0		65. 70.
					05.5		01.	,	70.	,	70.
Centerline Distance to Nois	se Con	tour (in feet,	)	70 dł	84	65	dBA		50 dBA	55	dBA
			Ldn:	, , , ,	60	00	130		280		60:
							130		200		00,

Tuesday, June 15, 2021

	FHV	VA-RD-77-108 H	HIGHWAY	/ NOISE	PREDICTI	ON MODE	L	
Road Nam	o: EAC Withou e: Riverside A nt: s/o Valley B	v.				Vame: Birl Imber: 136	cher Logistics	Center R
	SPECIFIC IN	PUT DATA					DEL INPUT	S
Highway Data				Site Co	onditions (	Hard = 10	, Soft = 15)	
Peak H	Percentage: our Volume:	50,492 vehicles 7.57% 3,822 vehicles	3		ledium Tru leavy Truc	cks (2 Axle	,	
	hicle Speed:	40 mph		Vehicle	Mix			
Near/Far Lar	ne Distance:	76 feet		Ve	hicleType	Da	y Evening	Night Dail
Site Data					A	utos: 77	.5% 12.9%	9.6% 96.7
Bar	rier Height:	0.0 feet			Medium Tri	ucks: 84	.8% 4.9%	10.3% 1.7
Barrier Type (0-W	•	0.0			Heavy Tr	ucks: 86	.5% 2.7%	10.8% 1.4
Centerline Dis	st. to Barrier:	60.0 feet		Noise	Source Ele	wations (i	in foot)	
Centerline Dist.	to Observer:	60.0 feet		10130	Autos			-
Barrier Distance	to Observer:	0.0 feet		Med	um Trucks			
Observer Height (	Above Pad):	5.0 feet			avy Trucks			justment: 0.0
	ad Elevation:	0.0 feet			·			
	ad Elevation:	0.0 feet		Lane E	quivalent		, ,	
F	Road Grade:	0.0%			Autos			
	Left View: Right View:	-90.0 degrees			um Trucks avy Trucks			
	•	90.0 degrees	5	//e	avy mucks	40.550	J	
FHWA Noise Mode		-						
VehicleType	REMEL	Traffic Flow	Distance		e Road	Fresnel	Barrier Att	
Autos:	66.51	4.36	-	.34	-1.20	-4.		0.0 0.0
Medium Trucks: Heavy Trucks:	77.72 82.99	-13.02 -13.90	-	0.37 0.37	-1.20 -1.20	-4. -5		0.0 0.0 000 0.0
						-3.	34 0.0	00 0.0
Unmitigated Noise								0.15
VehicleType Autos:	Leq Peak Hou 70		9.3	Evening 67	Leq I	light 61.5	Ldn 70.1	CNEL 1 7
Medium Trucks:	63		9.3 3.6	57	-	55.7	70. 64.	
Heavy Trucks:	68		3.0 8.0	59		60.3	68.6	•
Vehicle Noise:	72		2.4	68		64.5	73.0	
Contorlino Diotono				00	0	01.0	10.	
Centerline Distanc	e to Noise Co	mour (in reet)	7	0 dBA	65 0	BA	60 dBA	55 dBA
		L	dn:	9		206	444	
		CN		10		219	471	-

	FHV	VA-RD-77-108	HIGHW	AY NOISE P	REDICT	ION MOI	DEL			
	o: EAC Witho e: Valley Bl. nt: e/o Willow	,				Name: E lumber: 1		r Logistics	Center I	3
SITE	SPECIFIC IN	IPUT DATA			N	IOISE N	IODE	L INPUT	5	
Highway Data				Site Col	nditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	26,340 vehicle	es				Autos:	15		
Peak Hour	Percentage:	7.57%		M	edium Tr	ucks (2 A	xles):	15		
Peak H	our Volume:	1,994 vehicles	6	He	eavy Tru	cks (3+ A	xles):	15		
Vei	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ne Distance:	82 feet			nicleType		Day	Evening	Night	Daily
Site Data							77.5%	•		96.78
Bar	rier Height:	0.0 feet		N	ledium T	rucks:	84.8%	4.9%	10.3%	1.77
Barrier Type (0-W	•	0.0			Heavy T	rucks:	86.5%	2.7%	10.8%	1.45
Centerline Dis	. ,	60.0 feet		Noiso S	ourco E	levations	(in fr	of		
Centerline Dist.	to Observer:	60.0 feet		NOISE 3	Auto		000	ey		
Barrier Distance	to Observer:	0.0 feet		Madi	m Truck		297			
Observer Height (	Above Pad):	5.0 feet			vy Truck		004	Grade Ad	iustment	· 0.0
Pa	d Elevation:	0.0 feet			·				uoumoni	. 0.0
Roa	ad Elevation:	0.0 feet		Lane Ec	quivalen	t Distanc	e (in t	feet)		
F	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degree			ım Truck					
	Right View:	90.0 degree	es	Hea	vy Truck	s: 43.9	909			
FHWA Noise Mode	el Calculation	s		1						
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	e Road	Fresn	el	Barrier Atte	en Ber	m Atter
Autos:	66.51	1.53		0.72	-1.20		-4.69	0.0		0.00
Medium Trucks:	77.72	-15.85		0.75	-1.20		-4.88		000	0.00
Heavy Trucks:	82.99	-16.73		0.74	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenuation)						
	Leq Peak Hou			eq Evening		Night		Ldn		NEL
Autos:	67		66.9	65.1		59.0		67.7		68
Medium Trucks:	61		61.1	54.8		53.2		61.7		61
Heavy Trucks:	65	-	65.6	56.6		57.8		66.2		66
Vehicle Noise:	70	.4	69.9	66.0	)	62.1		70.6	3	71
Centerline Distanc	e to Noise Co	ontour (in feet								
				70 dBA	65	dBA	6	i0 dBA	55	dBA
			Ldn: VEL:	66 70		142 150		305 324		65 69

FHWA-RD-77-108 HIGH	VAY NOISE PREDICTION MODEL									
Scenario: EAC Without Project Road Name: Valley Bl. Road Segment: e/o Riverside Av.	Project Name: Birtcher Logistics Center R Job Number: 13681									
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS									
Highway Data	Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (Adt): 16,578 vehicles	Autos: 15									
Peak Hour Percentage: 7.57%	Medium Trucks (2 Axles): 15									
Peak Hour Volume: 1,255 vehicles	Heavy Trucks (3+ Axles): 15									
Vehicle Speed: 40 mph	Vehicle Mix									
Near/Far Lane Distance: 82 feet	VehicleType Day Evening Night Dai									
Site Data	Autos: 77.5% 12.9% 9.6% 96.7									
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.7									
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 1.4									
Centerline Dist. to Barrier: 60.0 feet	Noise Source Elevations (in feet)									
Centerline Dist. to Observer: 60.0 feet	Autos: 0.000									
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297									
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0									
Pad Elevation: 0.0 feet										
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)									
Road Grade: 0.0%	Autos: 44.091									
Left View: -90.0 degrees	Medium Trucks: 43.890									
Right View: 90.0 degrees	Heavy Trucks: 43.909									
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flow Dis	ance Finite Road Fresnel Barrier Atten Berm Atte									
Autos: 66.51 -0.48	0.72 -1.20 -4.69 0.000 0.									
Medium Trucks: 77.72 -17.86	0.75 -1.20 -4.88 0.000 0.0									
Heavy Trucks: 82.99 -18.74	0.74 -1.20 -5.34 0.000 0.4									
Unmitigated Noise Levels (without Topo and barrie	attenuation)									
VehicleType Leq Peak Hour Leq Day	Leq Evening Leq Night Ldn CNEL									
Autos: 65.5 64.9	63.1 57.0 65.7 6									
Medium Trucks: 59.4 59.1	52.7 51.2 59.7 5									
Heavy Trucks: 63.8 63.6	54.6 55.8 64.2 6									
Vehicle Noise: 68.4 67.9	64.0 60.1 68.6 6									
Centerline Distance to Noise Contour (in feet)										
	70 dBA 65 dBA 60 dBA 55 dBA									
Ldn:	48 104 224 4									

	FHWA-I	RD-77-108 HIC	GHWAY I	NOISE PR	REDICTI		DEL			
Scenario: E Road Name: R Road Segment: s		ct				Vame: E mber: 1		er Logistics	Center F	2
SITE SPE	CIFIC INPU	T DATA			N	DISE N	IODE		5	
Highway Data				Site Cond	ditions (	Hard =	10, Sc	oft = 15)		
Average Daily Traff	ic (Adt): 51,	44 vehicles				A	Autos:	15		
Peak Hour Perc	entage: 7.	57%		Med	dium Tru	cks (2 A	xles):	15		
Peak Hour	Volume: 3,9	17 vehicles		Hea	avy Truc	ks (3+ A	xles):	15		
		40 mph	-	Vehicle N	lix					
Near/Far Lane D	istance:	76 feet	-	Vehic	cleType		Day	Evening	Night	Daily
Site Data					A	utos:	77.5%	12.9%	9.6%	95.65%
Barrier	Heiaht:	0.0 feet		Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.75%
Barrier Type (0-Wall, 1		0.0		н	leavy Tri	icks:	86.5%	2.7%	10.8%	2.60%
Centerline Dist. to	,	0.0 feet	ŀ	Noise So	urco El	vations	(in f	aof)		
Centerline Dist. to O	bserver: 6	0.0 feet	-	140/36 30	Autos		000	eey		
Barrier Distance to O	bserver:	0.0 feet		Mediun	n Trucks		97			
Observer Height (Abo	/e Pad):	5.0 feet			y Trucks		004	Grade Ad	iustment	0.0
Pad El	evation:	0.0 feet							aounom	0.0
Road El	evation:		Lane Equ	iivalent			feet)			
		0%			Autos					
		0.0 degrees			n Trucks					
Rig	ht View: 9	0.0 degrees		Heavy	y Trucks	46.5	530			
FHWA Noise Model Ca	lculations									
			Distance	Finite I		Fresn		Barrier Atte		m Atten
Autos:	66.51	4.41	0.3		-1.20		-4.69		000	0.00
Medium Trucks:	77.72	-12.97	0.3		-1.20		-4.88		000	0.00
Heavy Trucks:	82.99	-11.25	0.3	7	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Lev				,						
	Peak Hour	Leq Day		vening	Leq I			Ldn		VEL
Autos:	70.1	69.4		67.6		61.6		70.2		70.
Medium Trucks:	63.9	63.6		57.3		55.7		64.2	-	64. 71
Heavy Trucks: Vehicle Noise:	70.9	70.7		61.7 68.9		62.9		71.3		71.
			5	00.9		05.7		74.2		74.
Centerline Distance to	Noise Conto	ur (in feet)	70	dBA	65 a	RA	F	60 dBA	55	dBA
		Ldn		115	05 0	дя 247		532		идя 1.146
		Lun		115		247		552		1,140

Tuesday, June 15, 2021

FF	IWA-RD-77-108 HIG	HWAYN	IOISE PREDIC	TION MODEL								
Scenario: EAC With Road Name: Willow Av Road Segment: n/o Valley				ct Name: Birtcl Number: 1368	ner Logistics Ce 1	enter R						
SITE SPECIFIC I	NPUT DATA		NOISE MODEL INPUTS									
Highway Data		:	Site Condition	s (Hard = 10, S	Soft = 15)							
Average Daily Traffic (Adt):	6,791 vehicles		Autos: 15									
Peak Hour Percentage:	7.57%		Medium	Trucks (2 Axles	): 15							
Peak Hour Volume:	514 vehicles		Heavy Ti	ucks (3+ Axles	): 15							
Vehicle Speed:	40 mph	h	Vehicle Mix									
Near/Far Lane Distance:	12 feet	-	VehicleTy	oe Dav	Evening N	ight Daily						
Site Data				Autos: 77.5	-	9.6% 94.69%						
Barrier Height:	0.0 feet		Medium	Trucks: 84.8	% 4.9% 1	0.3% 1.69%						
Barrier Type (0-Wall, 1-Berm):	0.0		Heavy	Trucks: 86.5	% 2.7% 1	0.8% 3.61%						
Centerline Dist. to Barrier:	32.0 feet	-	Noiso Sourco	Elevations (in	foot)							
Centerline Dist. to Observer:	32.0 feet	<u>'</u>		tos: 0.000	ieeij							
Barrier Distance to Observer:	0.0 feet		Au Medium True									
Observer Height (Above Pad):	5.0 feet		Heavy Tru		Grade Adjus	tment: 0.0						
Pad Elevation:	0.0 feet											
Road Elevation:	0.0 feet	1		nt Distance (ii	n feet)							
Road Grade:	0.0%			os: 31.828								
Left View:	-90.0 degrees		Medium True									
Right View:	90.0 degrees		Heavy True	sks: 31.576								
FHWA Noise Model Calculatio	ns											
VehicleType REMEL	Traffic Flow D	istance	Finite Road	Fresnel	Barrier Atten	Berm Atten						
Autos: 66.5	1 -4.45	2.8	4 -1.2	-4.5	1 0.000	0.000						
Medium Trucks: 77.7	2 -21.93	2.9	0 -1.2	-4.80	5 0.000	0.000						
Heavy Trucks: 82.9	9 -18.64	2.8	9 -1.2	) -5.72	2 0.000	0.000						
Unmitigated Noise Levels (wit	hout Topo and barr	ier atten	uation)									
VehicleType Leq Peak He	our Leq Day	Leq E	vening Le	q Night	Ldn	CNEL						
Autos: 6	3.7 63.0		61.2	55.2	63.8	64.4						
Medium Trucks: 5	7.5 57.2		50.8	49.3	57.7	58.0						
	6.0 65.8		56.8	58.1	66.4	66.5						
Vehicle Noise: 6	8.4 68.0	1	62.9	60.2	68.7	69.0						
	Contour (in feet)											
Centerline Distance to Noise (												
Centerline Distance to Noise (	(	70 0	dBA 6	5 dBA	60 dBA	55 dBA						
Centerline Distance to Noise (	Ldn.		26 dBA	5 dBA 56	60 dBA 121	55 dBA 261						

	FHV	NA-RD-77-108	HIGHWA	AY NOISE P	REDICT		DEL			
Road Nan	rio: EAC With F ne: Valley Bl. ent: w/o Dwy. 1	Project				Name: B umber: 1		r Logistics	Center I	R
SITE	SPECIFIC IN	IPUT DATA			N	IOISE M	ODE	. INPUTS	5	
Highway Data				Site Cor	nditions	(Hard = 1	10, So	ft = 15)		
Average Daily	Traffic (Adt):	23,269 vehicle	es			A	utos:	15		
Peak Hour	Percentage:	7.57%		Me	edium Tru	ucks (2 A	xles):	15		
Peak H	our Volume:	1,761 vehicles	6	He	eavy Truc	cks (3+ A)	xles):	15		
Ve	ehicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ne Distance:	82 feet			nicleType		Day	Evening	Night	Daily
Site Data							7.5%	12.9%	9.6%	,
Ba	rrier Height:	0.0 feet		м	ledium Tr	rucks: 8	34.8%	4.9%	10.3%	1.76
Barrier Type (0-V		0.0			Heavy Ti	rucks: 8	86.5%	2.7%	10.8%	1.44
	ist. to Barrier:	60.0 feet		Noine C	ouros El	evations	(in fo	<b>a</b> #1		
Centerline Dist.	to Observer:	60.0 feet		NOISe 3	Auto:			elj		
Barrier Distance	to Observer:	0.0 feet		Martin	Auto: m Truck:					
Observer Height	(Above Pad):	5.0 feet			vy Truck			Grade Adj	iustment	.00
P	ad Elevation:	0.0 feet		пеа	vy muck:	5. 8.0	04	Graue Auj	usument	. 0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	e (in f	eet)		
	Road Grade:	0.0%			Autos	s: 44.0	91			
	Left View:	-90.0 degree	es	Mediu	m Truck	s: 43.8	90			
	Right View:	90.0 degree	es	Hea	vy Truck	s: 43.9	09			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	Road	Fresne	e/ I	Barrier Atte	en Ber	m Atter
Autos:	66.51	0.99		0.72	-1.20	-	4.69	0.0	000	0.00
Medium Trucks:	77.72	-16.40		0.75	-1.20	-	4.88	0.0	000	0.00
Heavy Trucks:	82.99	-17.28		0.74	-1.20	-	5.34	0.0	000	0.00
Unmitigated Nois				ttenuation)						
VehicleType	Leq Peak Hou			q Evening		Night		Ldn		NEL
Autos:			66.3	64.6		58.5		67.1		67
Medium Trucks:			60.6	54.2		52.7		61.1		61
Heavy Trucks:			65.0	56.0		57.3		65.6	-	65
Vehicle Noise:			69.4	65.5	5	61.5		70.0	)	70
Centerline Distan	ce to Noise Co	ontour (in feet	)							
			ட	70 dBA	65 (	dBA	6	0 dBA		dBA
			Ldn:	60		130		280		60
			VEL:	64		130		298		64

	FHV	/A-RD-77-108	HIGHW	AY N	OISE PI	REDICT		DEL			
Scenario Road Name Road Segment		,					Name: I lumber: 1		er Logistics	Center	R
SITE S	PECIFIC IN	PUT DATA				N	IOISE N	IODE	L INPUT	5	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt):	27,637 vehicle	s					Autos:	15		
Peak Hour F	Percentage:	7.57%			Me	dium Tru	ucks (2 A	(xles):	15		
Peak Ho	ur Volume:	2,092 vehicles	5		He	avy Truc	cks (3+ A	xles):	15		
Veh	icle Speed:	40 mph		v	ehicle l	Mix					
Near/Far Lan	e Distance:	82 feet		Ľ		icleType		Dav	Evening	Night	Daily
Site Data					VCIII			77.5%	•	9.6%	,
	in a Halasha	0.0 feet			Me	edium Ti		84.8%		10.3%	
вагг Barrier Type (0-Wa	ier Height:	0.0 reet				leavy Ti		86.5%		10.8%	
Centerline Dist	. ,	60.0 feet									
Centerline Dist. to		60.0 feet		N	loise Sc		evations		eet)		
Barrier Distance to		0.0 feet				Auto		000			
Observer Height (A		5.0 feet				m Truck		297			
• •	d Elevation:	0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	ustment	: 0.0
Road	d Elevation:	0.0 feet		L	ane Eq	uivalent	Distanc	e (in	feet)		
R	oad Grade:	0.0%				Auto	s: 44.0	091			
	Left View:	-90.0 degree	s		Mediur	m Truck	s: 43.8	390			
	Right View:	90.0 degree	s		Heav	y Truck	s: 43.9	909			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	1.64		0.72		-1.20		-4.69	0.0		0.000
Medium Trucks:	77.72	-15.75		0.75		-1.20		-4.88	0.0		0.000
Heavy Trucks:	82.99	-12.56		0.74		-1.20		-5.34	0.0	000	0.000
Unmitigated Noise			-		<b>/</b>						
	eq Peak Hou			eq Ev			Night		Ldn		NEL
Autos:	67.	-	67.0		65.2		59.2		67.8		68.4
Medium Trucks:	61.	-	61.2		54.8		53.3		61.8		62.0
Heavy Trucks: Vehicle Noise:	70.	-	69.8 72.0		60.7 66.8		62.0		70.3		70.5
					6.90		64.2		72.6	)	72.9
Centerline Distance	e to Noise Co	ntour (in feet)		70 d		65	dBA		50 dBA	FF	dBA
			Ldn:	70 ai	BA 90	00	ава 193		о ава 417		<i>ава</i> 898
			Lan: JEL:		90 94		193 202		417		898 940
		CI	VLL.		94		202		430		940

Average Delity Traffic (Adt):         6,952 vehicles         Autos:         15           Peak Hour Percentage:         7,57%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         526 vehicles         Medium Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Medium Trucks (2 Axles):         15           Site Data         Autos:         75%         Medium Trucks (3 4 Axles):         15           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.75           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.75           Barrier Dist. to Doserver:         32.0 feet         Autos:         0.00         Medium Trucks:         8.65%         2.7%         10.8%         1.45           Pad Elevation:         0.0 feet         Autos:         0.00         Medium Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Eet View:         90.0 degrees         Heavy Trucks:         31.528           FHWA Noise Model Calculations         Medium Trucks:         1.514         Heavy Trucks:         31.528 <tr< th=""><th>Scenario: HY Road Name: Willow Road Segment: n/o Vall</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>: Birtch : 13681</th><th>er Logistics</th><th>Center I</th><th>२</th></tr<>	Scenario: HY Road Name: Willow Road Segment: n/o Vall								: Birtch : 13681	er Logistics	Center I	२
Average Daily Traffic (Adi):         6,952 vehicles         Autos:         15           Peak Hour Percentage:         7,57%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         526 vehicles         Medium Trucks (2 Axles):         15           Vehicle Speed:         40 mph         Vehicle Type         Day         Evening         Night         Daily           Site Data         Autos:         75%         Medium Trucks: (3 4 Axles):         15           Barrier Tar Distance:         12 feet         Vehicle Type         Day         Evening         Night         Daily           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         32.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.75           Deserver Height (Above Pad):         5.0 feet         Autos:         0.00         Medium Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         90.0 degrees         Autos:         31.828           WeikeType         REMEL         Traffic Flow         Distance         Finite Road         Fressel         Barrier Atten         Berm Atter           Autos:         66.51         -4.26         2.84 <t< th=""><th></th><th>C INP</th><th>UT DATA</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>S</th><th></th></t<>		C INP	UT DATA								S	
Peak Hour Percentage:         7.57%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         526 vehicles         Heavy Trucks (3 + Axles):         15           Vehicle Speed:         40 mph         Vehicle Mix         Day         Evening         Night         Daily           Site Data         Autos:         7.57%         12.9%         9.6%         96.78           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.77           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.77           Barrier Dist. to Barrier:         32.0 feet         Noise Source Elevations (in feet)         Noise Source and Autos:         0.00           Barrier Distance to Observer:         32.0 feet         Autos:         0.00         Medium Trucks:         2.297           Observer Height:         0.0 feet         Autos:         0.16 feet         Heavy Trucks:         31.548           Road Grade:         0.0 feet         Left View:         90.0 degrees         Medium Trucks:         31.578           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         <	Highway Data					Site Con	ditions	s (Hard	= 10, S	oft = 15)		
Peak Hour Volume:         526 vehicles Vehicle Speed:         Heavy Trucks (3 + Axles):         15           Vehicle Speed:         40 mph         Vehicle Type         Day         Leavy Trucks (3 + Axles):         15           Site Data         Vehicle Type         Day         Leavy         Night         Daily           Site Data         Vehicle Type         Day         Leavy         Night         Daily           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.77           Barrier Type (0-Wail, 1-Berm):         0.0         Get         Medium Trucks:         86.5%         2.7%         10.8%         1.45           Centerline Dist. to Dserver:         32.0 feet         Autos:         0.000         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         -90.0 degrees         Medium Trucks:         31.548           WehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -4.26         2.84         <	Average Daily Traffic (Ad	t): (	6,952 vehicle	es					Autos	: 15		
Vehicle Speed: Near/Far Lane Distance:         40 mph 12 feet         Vehicle Type Autos:         Day (Farmer Speed)         Night Daily Ste Data         Daily Daily Ste Data           Barrier Height:         0.0 feet         Medium Trucks:         4.48%         4.9%         10.3%         1.77           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         4.8%         4.9%         10.3%         1.77           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         4.8%         4.9%         10.8%         1.45           Centerline Dist. to Dserver:         2.0 feet         Autos:         0.000         Medium Trucks:         4.28         2.97         10.8%         1.45           Pad Elevation:         0.0 feet         Autos:         31.828         Medium Trucks:         4.26         2.84         1.20         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.56         0.000         0.00           Medium Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Medium Trucks:         57.8         57.5         51.1         49.6         56.0	Peak Hour Percentag	e: `	7.57%			Me	dium T	rucks (	2 Axles)	: 15		
Near/Far Lane Distance:         12 feet         Verticle MiX         Day         Evening         Night         Day           Site Data         Autos:         77.5%         12.9%         9.6%         96.78           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         0.3%         1.77           Barrier Height:         0.0         feet         Medium Trucks:         86.5%         2.7%         10.8%         1.45           Centerline Dist. to Barrier:         32.0 feet         Noise Source Elevations (in feet)         10.8%         1.45           Doserver Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         90.0 degrees         Medium Trucks:         31.548           Heavy Trucks:         81.57         2.96         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -5.72         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90	Peak Hour Volum	e:	526 vehicles	s		He	avy Tru	ıcks (3 <sup>.</sup>	+ Axles)	: 15		
Site Data         Venicle iype         Day         Left % 96.78           Barier Type (0-Wall, 1-Berm):         0.0         0.0         Heavy Trucks:         84.8%         4.9%         10.3%         1.77           Barier Dist. to Dserver:         32.0 feet         Moise Source Elevations (in feet)         Notes         Note					ŀ	Vehicle I	Nix					
Barrier Height:         0.0 feet           Barrier Type (0-Wall, 1-Berm):         0.0           Centerline Dist. to Barrier:         32.0 feet           Barrier Dist. to Deserver:         32.0 feet           Barrier Distance to Observer:         0.0 feet           Road Grade:         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           VehicleType         REMEL         Traffic Flow           VehicleType         REMEL         Traffic Flow           VehicleType         Leq Day         -2.51           Autos:         65.1         -4.26           2.84         -1.20         -4.51         0.000           Medium Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Medium Trucks:         57.8         57.5         51.1         49.6	Near/Far Lane Distanc	e:	12 feet		ŀ	Vehi	cleTyp	е	Day	Evening	Night	Daily
Barrier Type (I)         0.0 feet         Heavy Trucks:         86.5%         2.7%         10.8%         1.45           Centerline Dist. to Doserver:         32.0 feet         Noise Source Elevations (in feet)         Autos:         0.00           Barrier Tyse (I)         0.0 feet         Autos:         0.00         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Autos:         0.00         Feed Elevation:         0.0 feet           Road Elevation:         0.0 feet         Autos:         31.828         Feed Elevation:         0.0           Left Ivew:         90.0 degrees         Right View:         90.0 degrees         Feed Elevation:         0.00         0.00           FHWA Noise Model Calculations         VenicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Attem         Bermathem Attem           Wedium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         68.0         64.0           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         66.0	Site Data							Autos:	77.5%	6 12.9%	9.6%	96.78%
Barrier Type (0-Wall, 1-Berm):         0.0         Heavy Trucks:         86.5%         2.7%         10.8%         1.45           Centerline Dist. to Desriver:         32.0 feet         Noise Source Elevations (in feet)         Autos:         0.00         Moise Source Elevations (in feet)         Autos:         0.00         Medium Trucks:         2.297         Autos:         31.828         Medium Trucks:         2.297         Autos:         31.828         Medium Trucks:         31.828         Medium Trucks:         31.828         Medium Trucks:         31.548         Heavy Trucks:         31.576           FHWA Noise Model Calculations         Medium Trucks:         31.576         Ent News:         S1.548         Heavy Trucks:         31.576           FHWA Noise Model Calculations         Medium Trucks:         31.576           VehiceType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -4.26         2.84         -1.20         -4.57         0.000         0.00	Barrier Heigh	nt.	0.0 feet			Me	dium	Trucks:	84.8%	6 4.9%	10.3%	1.779
Centerline Dist. to Barrier:         32.0 feet         Noise Source Elevations (in feet)           Centerline Dist. to Observer:         32.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Autos:         31.828         Heavy Trucks:         31.576           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bernier Atten           Autos:         66.51         4.26         2.84         -1.20         -4.56         0.000         0.00           Medium Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Medium Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Medium Trucks:         57.8         57.5         51.1         4.96         56.0         66           Au	•					F	leavy 1	Trucks:	86.5%	6 2.7%	10.8%	1.45%
Centerline Dist. to Observer:         32.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         2.297           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Left View:         90.0 degrees         Medium Trucks:         31.548           Heavy Trucks:         8.004         Fresnet         Barrier Atten         Berrier Atten         Berrier Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Berrier Atten           Autos:         66.51         4.26         2.84         -1.20         -4.86         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -5.72         0.000         0.00           Untitigated Moise Levels (without Topo and barrier attenuation)         Ueg Evening         Leq Evening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64					-	Noiso Sa	urco F	lovatio	ne (in f	ioot)		
Barrier Distance to Observer:         0.0 feet         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Late Yuncks:         8.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Late Yuncks:         8.004         Grade Adjustment:         0.0           Left View:         -90.0 degrees         Medium Trucks:         31.548         Medium Trucks:         31.548           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atter           Autos:         66.51         -4.26         2.84         -1.20         -4.57         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -5.72         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         VehiceType         Leq Evening         Leq Evening         Leq Night         Ldn         CNEL           Autos::         57.8         57.5         51.1         49.6         58.0         68           Heavy Trucks: <t< td=""><td>Centerline Dist. to Observe</td><td>er:</td><td>32.0 feet</td><td></td><td>ŀ</td><td>10130 30</td><td></td><td></td><td></td><td>000</td><td></td><td></td></t<>	Centerline Dist. to Observe	er:	32.0 feet		ŀ	10130 30				000		
Observer Height (Above Pad):         5.0 feet         Heary Trucks:         8.0.4         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         31.828         Medium Trucks:         31.548           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -4.26         2.84         -1.20         -4.65         0.000         0.00           Medium Trucks:         17.72         -21.63         2.90         -1.20         -5.72         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Peak How         Leg Day         Leg Right         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Medium Trucks:         57.8         57.5         51.1         49.	Barrier Distance to Observe	er:	0.0 feet			Mediur						
Pad Elevation:         0.0 feet           Road Grade:         0.0 feet           Road Grade:         0.0 feet           Left View:         -90.0 degrees           Right View:         90.0 degrees           FHWA Noise Model Calculations         Medium Trucks:         31.528           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           VehicleType         Reget         Traffic Flow         Distance         Finite Road         Fessel         Barrier Atten         Berner Atten           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -5.72         0.000         0.00           Umitigated Noise Levels (without Topo and barrier attenuation)         UehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0	Observer Height (Above Pag	1):	5.0 feet							Grade Ad	iustment	0.0
Road Grade:         0.0%         Autos:         31.828           Left View:         -90.0 degrees         Medium Trucks:         31.576           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           VehicleType         REBMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Autos:         66.51         -4.26         2.84         -1.20         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Medium Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0 </td <td>Pad Elevatio</td> <td>n:</td> <td>0.0 feet</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Juotimoni</td> <td>0.0</td>	Pad Elevatio	n:	0.0 feet								Juotimoni	0.0
Left View:         -90.0 degrees         Medium Trucks:         31.548           Right View:         90.0 degrees         Heavy Trucks:         31.576           FHWA Noise Model Calculations         Medium Trucks:         31.576           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         -4.26         2.84         -1.20         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.66         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         -5.72         0.000         0.00           VehicleType         Leq Revening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         68           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9	Road Elevation			Lane Equ	uivaler	nt Dista	nce (in	feet)				
Right View:         90.0 degrees         Heavy Trucks:         31.576           FHWA Noise Model Calculations         Enter France         Finite Road         Fresnel         Barrier Atten         Berm Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         -4.26         2.84         -1.20         -4.65         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Deak How         Leg Devining         Leg Right         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Canterline Distance to Noise Contour (in feet)												
FHWA Noise Model Calculations         Freshol         Barrier Atten         Bern Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Freshol         Barrier Atten         Bern Atten           Autos:         66.51         -4.26         2.84         -1.20         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Heavy Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)            CNEL            VehicleType         Leg Peak Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         4.96         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.			•									
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atter           Autos:         66.51         -4.26         2.84         -1.20         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Heavy Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)         Tradium Zinter         Zinter         Zinter         20         43         93         20	Right Vie	N:	90.0 degree	es		Heav	y Truc	ks: 3	1.576			
Autos:         66.51         -4.26         2.84         -1.20         -4.51         0.000         0.00           Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Heavy Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Umitigated Moise Levels (without Top can ab harrier attenuation)         Umitigated Moise Levels (without Top can ab arrier)         Umitigated Moise Levels (without Top can ab arrier)         Leq Evening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)	FHWA Noise Model Calcula	ions										
Medium Trucks:         77.72         -21.63         2.90         -1.20         -4.86         0.000         0.00           Heavy Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)          -5.72         0.000         0.00           VehicleType         Leq Peak Hour         Leq Day         Leq Reining         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         56           Heavy Trucks:         66.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (In feet)	VehicleType REMEL	. 7	raffic Flow	Di	stance	Finite	Road	Fre	snel	Barrier Att	en Ber	m Atten
Heavy Trucks:         82.99         -22.51         2.89         -1.20         -5.72         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Medium Trucks:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         67.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)	Autos: 66	.51	-4.26		2.8	4	-1.20		-4.51	0.0	000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (In feet)         TO dBA         65 dBA         60 dBA         55 dBA           Ldn:         20         43         93         20												0.00
VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         4.96         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)	Heavy Trucks: 82	.99	-22.51		2.8	19	-1.20		-5.72	0.0	000	0.00
Autos:         63.9         63.2         61.4         55.4         64.0         64           Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         52           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         20         43         93         20 <td></td> <td></td> <td>t Topo and</td> <td>barri</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			t Topo and	barri								
Medium Trucks:         57.8         57.5         51.1         49.6         58.0         58           Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)           Image: Colspan="5">Image: Colspan="5">Contour (in feet)           Image: Colspan="5">Label Colspan="5">Contour (in feet)           Image: Colspan="5">Contour (in feet)           Image: Colspan="5">Label Colspan="5">Contour (in feet)           Image: Colspan="5">Contour (in feet)			1 1		Leq E		Lec					
Heavy Trucks:         62.2         62.0         52.9         54.2         62.5         62           Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)												64.
Vehicle Noise:         66.7         66.3         62.4         58.4         66.9         67           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         20         43         93         20												58.
Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         20         43         93         20		-										62.
T0 dBA         65 dBA         60 dBA         55 dBA           Ldn:         20         43         93         20	Vehicle Noise:	66.7		66.3		62.4		5	3.4	66.9	9	67.
Ldn: 20 43 93 20	Centerline Distance to Nois	e Con	tour (in feet	)					_			
				. I			65	-				-
CNEL: 21 46 99 21						20 21			13 16	93 99		200 212

Tuesday, June 15, 2021

	WA-RD-77-108 HIG	HWAT NOISE F				
Scenario: EAC With	Project		Project Name			enter R
Road Name: Valley Bl.			Job Number	: 13681		
Road Segment: e/o Rivers						
SITE SPECIFIC I	NPUT DATA				LINPUTS	
Highway Data		Site Co	nditions (Hard		,	
Average Daily Traffic (Adt):	16,623 vehicles			Autos:		
Peak Hour Percentage:	7.57%		edium Trucks (2	,		
Peak Hour Volume:	1,258 vehicles	п	eavy Trucks (3+	· Axies):	15	
Vehicle Speed:	40 mph	Vehicle	Mix			
Near/Far Lane Distance:	82 feet	Ve	hicleType	Day	Evening N	light Daily
Site Data			Autos:	77.5%	12.9%	9.6% 96.79
Barrier Height:	0.0 feet	٨	ledium Trucks:	84.8%	4.9% 1	10.3% 1.779
Barrier Type (0-Wall, 1-Berm):	0.0		Heavy Trucks:	86.5%	2.7%	1.449
Centerline Dist. to Barrier:	60.0 feet	Noise S	ource Elevatio	ns (in f	eet)	
Centerline Dist. to Observer:	60.0 feet			0.000		
Barrier Distance to Observer:	0.0 feet	Medii		2.297		
Observer Height (Above Pad):	5.0 feet			3.004	Grade Adjus	tment: 0.0
Pad Elevation:	0.0 feet					
Road Elevation:	0.0 feet	Lane E	quivalent Dista		feet)	
Road Grade:	0.0%			4.091		
Left View:	-90.0 degrees			3.890		
Right View:	90.0 degrees	Hea	vy Trucks: 4	3.909		
FHWA Noise Model Calculation	าร					
VehicleType REMEL	Traffic Flow Di	stance Finite	Road Free	snel	Barrier Atten	Berm Atten
Autos: 66.5	-0.47	0.72	-1.20	-4.69	0.000	0.00
Medium Trucks: 77.72	-17.86	0.75	-1.20	-4.88	0.000	0.00
Heavy Trucks: 82.99	-18.74	0.74	-1.20	-5.34	0.000	0.00
Unmitigated Noise Levels (with	out Topo and barr	ier attenuation)				
VehicleType Leq Peak Ho	ur Leq Day	Leq Evening	Leq Night		Ldn	CNEL
	5.6 64.9	63.			65.7	66.
	9.4 59.1			.2	59.7	59.
	3.8 63.6	54.0		.8	64.2	64.
Vehicle Noise: 6	8.4 67.9	64.0	) 60	.1	68.6	69.
Centerline Distance to Noise C	ontour (in feet)					
		70 dBA	65 dBA	(	60 dBA	55 dBA
	Ldn: CNEL:	48			224 238	483

	FHV	VA-RD-77-108 I	HIGHWAY	NOISE PI	REDICT	ION MOI	DEL			
	o: HY e: Riverside A nt: s/o Valley B					Name: E umber: 1		er Logistics	Center I	3
SITE	SPECIFIC IN	PUT DATA			N	IOISE N	IODE	L INPUTS	5	
Highway Data				Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	55,541 vehicles	6				Autos:	15		
Peak Hour	Percentage:	7.57%		Me	dium Tru	ucks (2 A	xles):	15		
Peak H	our Volume:	4,204 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ne Distance:	76 feet			icleType		Day	Evening	Night	Daily
Site Data				VCII			77.5%			96.78
Bai	rier Height:	0.0 feet		M	edium Ti	rucks:	84.8%	4.9%	10.3%	1.77
Barrier Type (0-W	•	0.0		1	leavy Ti	rucks:	86.5%	2.7%	10.8%	1.45
Centerline Dis		60.0 feet		Noise So	urco Fl	ovations	in fa	oof)		
Centerline Dist.	to Observer:	60.0 feet		110/30 00	Auto		000			
Barrier Distance	to Observer:	0.0 feet		Modiu	n Truck:		97			
Observer Height (	Above Pad):	5.0 feet			y Truck		04	Grade Adj	ustment	· 0.0
Pá	d Elevation:	0.0 feet		near	y mack.	3. 0.0	/04	0/000/10	uoumom	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in t	feet)		
I	Road Grade:	0.0%			Auto:					
	Left View:	-90.0 degrees	6	Mediu	n Truck	s: 46.5	511			
	Right View:	90.0 degrees	5	Heav	y Truck	s: 46.5	530			
FHWA Noise Mode	al Calculations	5		1						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atter
Autos:	66.51	4.77		.34	-1.20		-4.69	0.0		0.00
Medium Trucks:	77.72	-12.61	0	.37	-1.20		-4.88	0.0	00	0.00
Heavy Trucks:	82.99	-13.49	0	.37	-1.20		-5.34	0.0	00	0.00
Unmitigated Noise										
	Leq Peak Hou		,	Evening	Leq	Night		Ldn		NEL
Autos:	70.		9.7	68.0		61.9		70.5		71
Medium Trucks:	64.		4.0	57.6		56.1		64.5		64
Heavy Trucks:	68.		8.5	59.4		60.7		69.0		69
Vehicle Noise:	73.		2.8	68.9		64.9		73.5		73
Centerline Distanc	e to Noise Co	ntour (in feet)	-			-/0.4		0 -0 4		-10.4
				0 dBA	65 (	dBA	6	60 dBA	55	dBA
			dn:	102		220 233		473		1,01
		CN	EL:	108		233		502		1,08

	FHW	A-RD-77-108	HIGHW	AY N	OISE PF	REDICT		DEL			
Scenario: H` Road Name: Va Road Segment: wi	alley Bl.						Name: I lumber:		er Logistics	Center	R
SITE SPE	CIFIC INP	UT DATA							L INPUT	S	
Highway Data				S	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffi	c (Adt): 2	5,497 vehicle	s					Autos:	15		
Peak Hour Perce	entage:	7.57%			Med	dium Tr	ucks (2 A	(xles):	15		
Peak Hour V	olume: 1	,930 vehicles			Hea	avy Tru	cks (3+ A	xles):	15		
Vehicle		40 mph		V	/ehicle N	lix					
Near/Far Lane Di	stance:	82 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	96.78%
Barrier	Heiaht:	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.77%
Barrier Type (0-Wall, 1-	-Berm):	0.0			E	leavy T	rucks:	86.5%	2.7%	10.8%	1.45%
Centerline Dist. to	Barrier:	60.0 feet			loise So	urco El	levations	in f	aaf)		
Centerline Dist. to Ob	server:	60.0 feet		Ē		Auto		000	,		
Barrier Distance to Ob	server:	0.0 feet			Mediur	n Truck		97			
Observer Height (Abov	,	5.0 feet				y Truck		004	Grade Ad	iustment	: 0.0
Pad Ele		0.0 feet		Ŀ				,,			
Road Ele		0.0 feet		L	ane Equ	Auto	t Distand		teet)		
		0.0%			Madium	Auto n Truck					
	nt View: nt View:	-90.0 degree 90.0 degree				y Truck					
FHWA Noise Model Ca	lculations										
VehicleType RI	EMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	1.39		0.72	-	-1.20		-4.69		000	0.00
Medium Trucks:	77.72	-15.99		0.75	-	-1.20		-4.88		000	0.00
Heavy Trucks:	82.99	-16.87		0.74	1	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Lev					· _						
	Peak Hour			eq Ev	rening	Leq	Night		Ldn		NEL
Autos:	67.4		6.7		65.0		58.9		67.5		68.
Medium Trucks:	61.3		51.0		54.6		53.1		61.5		61.
Heavy Trucks:	65.7		35.5		56.4		57.7		66.0		66.2
Vehicle Noise:	70.2	. (	69.8		65.9		61.9		70.4	ł	70.8
Centerline Distance to	Noise Con	tour (in feet)	_					-			
				70 d		65	dBA	6	60 dBA		dBA
			dn:		64		138		298		643
		CN	IEL:		68		147		317		682

Scenario: HY Road Name: Valley Road Segment: e/o Ri		Av.					t Name: Number:		er Logistics	Center F	2		
SITE SPECIF	IC INP	UT DATA		1			NOISE	MODE		s			
Highway Data					Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (A	<i>dt):</i> 1	8,236 vehicl	es					Autos.	15				
Peak Hour Percenta	ige:	7.57%			Med	dium T	rucks (2	Axles).	15				
Peak Hour Volu	<i>me:</i> 1	,380 vehicle	s		Hea	avy Tru	ıcks (3+	Axles).	15				
Vehicle Spe	ed:	40 mph		-	Vehicle N	lix							
Near/Far Lane Distar	ice:	82 feet		-		cleTvp	е	Dav	Evenina	Niaht	Dailv		
Site Data						,,	Autos:	77.5%	6 12.9%	9.6%	96.789		
Barrier Heig	nht.	0.0 feet			Me	dium	Trucks:	84.8%	6 4.9%	10.3%	1.779		
Barrier Type (0-Wall, 1-Be		0.0			Ь	leavy 1	Trucks:	86.5%	6 2.7%	10.8%	1.459		
Centerline Dist. to Bar		60.0 feet		-	Naina Ca		Invetio		aati				
Centerline Dist. to Obser	ver:	60.0 feet		÷	Noise So	Auto		.000	eeŋ				
Barrier Distance to Obser	ver:	0.0 feet			Mediun			.000					
Observer Height (Above P	ad):	5.0 feet				y Truc		.004	Grade Ad	iustment	0.0		
Pad Elevat			Lane Equivalent Distance (in feet)										
Road Elevat			Lane Equ				feet)						
Road Gra				Auto		.091							
Left Vi		-90.0 degre			Mediun			.890					
Right V	ew:	90.0 degre	es		Heav	y Truc	KS: 43	.909					
FHWA Noise Model Calcul	ations												
VehicleType REME	L	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten		
Autos:	6.51	-0.07		0.7	2	-1.20		-4.69	0.0	000	0.00		
	7.72	-17.44		0.7		-1.20		-4.88		000	0.00		
Heavy Trucks:	32.99	-18.32		0.7	4	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise Levels	(withou	ıt Topo and	barri	ier atten	uation)								
VehicleType Leq Pea	k Hour	Leq Day	/	Leq E	vening	Lec	Night		Ldn	CI	VEL		
Autos:	66.0		65.3		63.5		57		66.		66.		
Medium Trucks:	59.8		59.5		53.2		51.	-	60.		60.		
Heavy Trucks:	64.2		64.0		55.0		56		64.0		64.		
Vehicle Noise:	68.8		68.3		64.4		60.	.5	69.0	J	69		
Centerline Distance to Noi	se Con	tour (in feet	)							Т			
			. l		dBA	65	i dBA		60 dBA		dBA		
			Ldn:		51		11		239		514		
		C	NEL:		55		11	в	253		540		

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Project Name: Birtcher Logistics Center R Job Number: 13681 Scenario: HY Road Name: Valley Bl. Road Segment: e/o Willow Av. SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 28,974 vehicles Peak Hour Percentage: 7.57% Autos: 15 Medium Trucks (2 Axles): 15 Peak Hour Volume: 2,193 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix Near/Far Lane Distance: 82 feet Day Evening Night Daily VehicleType Autos: 77.5% 12.9% Site Data 9.6% 96.78% Medium Trucks: 84.8% 4.9% 10.3% 1.77% Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 1.45% 60.0 feet Centerline Dist. to Barrier: Centerline Dist. to Observer: Noise Source Elevations (in feet) 60.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Grade Adjustment: 0.0 Heavy Trucks: 8.004 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) 0.0 feet 0.0% Road Elevation: Road Grade: Autos: 44.091 Medium Trucks: 43.890 Left View: -90.0 degrees Right View: Heavy Trucks: 43.909 90.0 degrees FHWA Noise Model Calculations MEL Traffic Flow Distance Finite Road Fresnel 66.51 1.94 0.72 VehicleType REMEL Autos: 66. Barrier Atten Berm Atten -4.69 0.000 0.000 -1.20 Medium Trucks: 77.72 -15.43 0.75 -4.88 0.000 0.000 Heavy Trucks: 82.99 -16.31 0.74 -1.20 -5.34 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night 67.3 65.5 55 CNEL Ldn Autos 68.0 59.5 68.1 68.7 Medium Trucks: 61.8 53.6 61.5 55.2 62.1 62.3 Heavy Trucks: 66.2 66.0 57.0 58.2 66.6 66.7 Vehicle Noise: 70.8 70.3 66.4 62.5 71.0 71.4 Centerline Distance to Noise Contour (in feet) 65 dBA 70 dBA 60 dBA 55 dBA 700 Ldn: 70 151 325 CNEL: 74 160 345 743

	FHV	VA-RD-77-108	HIGH	I YAWI	NOISE PF	REDICTI	ON MOE	DEL					
Scenario					Project Name: Birtcher Logistics Center R Job Number: 13681								
	Willow Av.					Job N	umber: 1	3681					
Road Segment	" n/o valley E	31.											
	PECIFIC IN	IPUT DATA							L INPUTS	5			
Highway Data					Site Con	ditions	(Hard = 1	10, Se	oft = 15)				
Average Daily T	raffic (Adt):	7,423 vehicle	es					lutos:					
Peak Hour F	Percentage:	7.57%			Mee	dium Tru	icks (2 A.	xles):	15				
Peak Ho	ur Volume:	562 vehicles	6		Hea	avy Truc	ks (3+ A	xles):	15				
	icle Speed:	40 mph		ŀ	Vehicle N	Nix							
Near/Far Lan	e Distance:	12 feet		ŀ		cleType	1	Day	Evening	Night	Daily		
Site Data						A	utos: ī	77.5%	12.9%	9.6%	94.87%		
Barr	ier Height:	0.0 feet			Me	edium Tr	ucks: 8	34.8%	4.9%	10.3%	1.70%		
Barrier Type (0-Wa	ll, 1-Berm):	0.0			H	leavy Tr	ucks: 8	36.5%	5 2.7%	10.8%	3.43%		
Centerline Dist	to Barrier:	32.0 feet		ł	Noise So	urce El	evations	(in f	eef)				
Centerline Dist. to	o Observer:	32.0 feet		ŀ		Autos							
Barrier Distance to	o Observer:	0.0 feet			Mediur	n Trucks							
Observer Height (A	bove Pad):	5.0 feet				y Trucks		-	Grade Adju	ustment	: 0.0		
Pad	d Elevation:	0.0 feet											
	d Elevation:	0.0 feet			Lane Equ				feet)				
R	oad Grade:	0.0%				Autos							
	Left View:	-90.0 degree	es			n Trucks							
	Right View:	90.0 degree	es		Heav	y Trucks	31.5	76					
FHWA Noise Model	Calculation	s											
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten		
Autos:	66.51	-4.06		2.8	34	-1.20	-	4.51	0.0	00	0.000		
Medium Trucks:	77.72	-21.53		2.9	90	-1.20	-	4.86	0.0	00	0.000		
Heavy Trucks:	82.99	-18.48		2.8	89	-1.20	-	5.72	0.0	00	0.00		
Unmitigated Noise	Levels (with	out Topo and	barrie	er atter	nuation)								
	.eq Peak Hou			Leq E	vening	Leq			Ldn		NEL		
Autos:	64		63.4		61.6		55.6		64.2		64.8		
	67	9	57.6		51.2		49.7		58.1		58.4		
Medium Trucks:									66.6		66.7		
Heavy Trucks:	66		66.0		57.0		58.2		00.0				
		.2	66.0 68.3		57.0 63.2		58.2 60.5		68.9		69.3		
Heavy Trucks: Vehicle Noise:	66 68	.2 .7	68.3		63.2						69.3		
Heavy Trucks:	66 68	.2 .7 ontour (in feet)	68.3	70	63.2 dBA	65 0	60.5 IBA		68.9 60 dBA		dBA		
Heavy Trucks: Vehicle Noise:	66 68	.2 .7 ontour (in feet)	68.3	70	63.2	65 0	60.5		68.9		69.2 dBA 272 284		

Tuesday, June 15, 2021

	FHW	/A-RD-77-108	HIGHW	AY NO	DISE PF	REDICTI		DEL					
Scenario: HYP Road Name: Rive Road Segment: s/o \	rside Av						Name: E umber: 1		er Logistics	Center	R		
SITE SPECI	FIC IN	PUT DATA		NOISE MODEL INPUTS									
Highway Data				Si	ite Con	ditions	Hard =	10, So	oft = 15)				
Average Daily Traffic (	Adt):	56,794 vehicle	s				A	Autos:	15				
Peak Hour Percent	tage:	7.57%			Mee	dium Tru	icks (2 A	xles):	15				
Peak Hour Vol	ume:	4,299 vehicles	5		Hea	avy Truc	ks (3+ A	xles):	15				
Vehicle Sp		40 mph		V	ehicle N	lix							
Near/Far Lane Dista	ance:	76 feet		-		cleType	1	Day	Evening	Night	Daily		
Site Data						A	utos:	77.5%	12.9%	9.6%			
Barrier He	iaht:	0.0 feet			Ме	edium Tr	ucks:	84.8%	4.9%	10.3%	1.75%		
Barrier Type (0-Wall, 1-Be	•	0.0			H	łeavy Tr	ucks: 1	36.5%	2.7%	10.8%	2.50%		
Centerline Dist. to Ba	nrier:	60.0 feet		N	oiso So	urco El	evations	(in f	noti				
Centerline Dist. to Obse	erver:	60.0 feet			0136 00	Autos							
Barrier Distance to Obse	erver:	0.0 feet			Mediur	n Trucks							
Observer Height (Above I	Pad):	5.0 feet				y Trucks			Grade Adj	ustment	: 0.0		
Pad Eleva		0.0 feet		_									
Road Eleva		0.0 feet		La	ane Equ		Distanc		feet)				
Road Gi		0.0%				Autos							
Left \ Right \		-90.0 degree 90.0 degree				n Trucks y Trucks							
FHWA Noise Model Calcu	Ilations	;											
VehicleType REM	IEL	Traffic Flow	Distar	се	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten		
Autos:	66.51	4.82		0.34		-1.20		4.69	0.0		0.00		
Medium Trucks:	77.72	-12.56		0.37		-1.20		4.88	0.0		0.00		
Heavy Trucks:	82.99	-11.02		0.37		-1.20		5.34	0.0	000	0.00		
Unmitigated Noise Levels			-		<b>/</b>								
VehicleType Leq Pe				eq Eve		Leq	•		Ldn		NEL		
Autos:	70. 64	-	69.8 64.0		68.0 57.7		62.0 56.1		70.6 64.6		71.1 64.1		
Medium Trucks: Heavy Trucks:	04. 71.	-	04.0 70.9		57.7 61.9		63.1		64.0 71.5		71.0		
Vehicle Noise:	74.	-	73.9		69.3		66.1		71.5		74.9		
	vice Co	ntour (in feet											
		mour (in leer,									dBA		
Centerline Distance to No				70 dE	BA	65 0	1BA		60 dBA	55	UDA		
Centerline Distance to No			Ldn:	70 dE	3A 120	65 0	1BA 259	e	559 559	55	1,204		

	FHWA	A-RD-77-108	ΠG	HWAYN	IOISE PR	(EDIC I	ION MO	DEL			
Scenario: HY									er Logistics	Center I	R
Road Name: Va						Job I	Number:	13681			
Road Segment: e/o	o Willow Av										
SITE SPEC	CIFIC INP	UT DATA							L INPUT	S	
Highway Data				1	Site Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic	. ,	0,271 vehicle	s					Autos:			
Peak Hour Perce		7.57%					rucks (2 A				
Peak Hour V		,292 vehicles	6		Hea	avy Tru	icks (3+ A	(xles):	15		
Vehicle		40 mph		1	/ehicle N	lix					
Near/Far Lane Dis	stance:	82 feet			Vehic	cleTyp	e	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	94.869
Barrier H	leight:	0.0 feet			Me	dium 1	Trucks:	84.8%	4.9%	10.3%	1.73
Barrier Type (0-Wall, 1-	•	0.0			н	leavy 1	Trucks:	86.5%	2.7%	10.8%	3.419
Centerline Dist. to I	Barrier:	60.0 feet		-	Voise So	urco F	lovation	: (in fi	oofi		
Centerline Dist. to Ob	server:	60.0 feet		Ľ.	10/30 00	Auto		000			
Barrier Distance to Ob	server:	0.0 feet			Mediun			297			
Observer Height (Above	e Pad):	5.0 feet				y Truck		004	Grade Ad	iustment	0.0
Pad Ele		0.0 feet									
Road Ele	vation:	0.0 feet		1	ane Equ	iivalen			feet)		
		0.0%				Auto					
		-90.0 degree			Mediun						
Righ	t View:	90.0 degree	s		Heavy	y Truck	(s: 43.	909			
FHWA Noise Model Cal	culations										
		Traffic Flow	Di	stance	Finite I		Fresn	-	Barrier Att		m Atten
Autos:	66.51	2.05		0.72		-1.20		-4.69		000	0.00
Medium Trucks:	77.72	-15.35		0.7		-1.20		-4.88		000	0.00
Heavy Trucks:	82.99	-12.39		0.74	4	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Leve											
	Peak Hour	Leq Day		Leq Ev		Leq	Night		Ldn		NEL
Autos:	68.1		67.4		65.6		59.6		68.2		68.
Medium Trucks:	61.9		61.6		55.3		53.7		62.2		62.
Heavy Trucks:	70.1		69.9 72.2		60.9		62.1		70.5		70.
Vehicle Noise:					67.2		64.4		72.9	9	73.
Centerline Distance to	Noise Con	tour (in feet)									10.4
			L	70 c		65	dBA	6	60 dBA		dBA
			Ldn:		93		201		434		93
			IEL:		98		211		455		980

Tuesday, June 15, 2021

Fł	IWA-RD-77-108 HIG	HWAY N	OISE PREDIC	TION MODE	E	
Scenario: HYP Road Name: Valley Bl. Road Segment: w/o Dwy.	1			ct Name: Bir Number: 13	tcher Logistics ( 681	Center R
SITE SPECIFIC I	NPUT DATA			NOISE MO	DEL INPUTS	
Highway Data		5	Site Condition	s (Hard = 10	), Soft = 15)	
Average Daily Traffic (Adt):	25,587 vehicles			Au	tos: 15	
Peak Hour Percentage:	7.57%		Medium	Trucks (2 Axi	les): 15	
Peak Hour Volume:	1,937 vehicles		Heavy T	rucks (3+ Axi	les): 15	
Vehicle Speed:	40 mph		/ehicle Mix			
Near/Far Lane Distance:	82 feet	-	VehicleTy	pe Da	ay Evening	Night Daily
Site Data			,		.5% 12.9%	9.6% 96.79%
Barrier Height:	0.0 feet		Medium	Trucks: 84	4.9%	10.3% 1.77%
Barrier Type (0-Wall, 1-Berm):			Heavy	Trucks: 86	6.5% 2.7%	10.8% 1.44%
Centerline Dist. to Barrier:			loise Source	Elovations (	in foot)	
Centerline Dist. to Observer:	60.0 feet	-		tos: 0.00		
Barrier Distance to Observer:	0.0 feet		Medium Tru			
Observer Height (Above Pad):	5.0 feet		Heavy Tru			stment: 0.0
Pad Elevation:	0.0 feet					
Road Elevation:	0.0 1001	L	ane Equivale.			
Road Grade:	0.070			tos: 44.09		
Left View:	00.0 0091000		Medium Tru		-	
Right View:	90.0 degrees		Heavy Tru	cks: 43.90	9	
FHWA Noise Model Calculatio	ns					
VehicleType REMEL	Traffic Flow D	istance	Finite Road	Fresnel	Barrier Atte	n Berm Atten
Autos: 66.5	1 1.40	0.72	2 -1.2	0 -4	.69 0.00	0.00
Medium Trucks: 77.7	2 -15.99	0.75	5 -1.2	0 -4	.88 0.00	0.00
Heavy Trucks: 82.9	9 -16.87	0.74	-1.2	0 -5	.34 0.00	0.00
Unmitigated Noise Levels (wit	hout Topo and barr	ier attenu	uation)			
VehicleType Leq Peak He	our Leq Day	Leq Ev	rening Le	q Night	Ldn	CNEL
	66.7		65.0	58.9	67.5	68.
	61.3 61.0		54.6	53.1	61.5	61.
	65.7 65.5		56.4	57.7	66.0	66.
Vehicle Noise: 7	0.2 69.8		65.9	62.0	70.5	70.
Centerline Distance to Noise (	Contour (in feet)					
		70 d		5 dBA	60 dBA	55 dBA
	1 -1			400	299	643
	Ldn.		64	139	299	043

	FHW	A-RD-77-108 HIG	GHWAY I	NOISE PF	REDICTIC	ON MODEL	-	
Scenari Road Nam	o: HYP e: Vallev Bl.					lame: Birto mber: 136	her Logistics C	Center R
	nt: e/o Riverside	e Av.			500 140	<i>inder.</i> 1300	51	
SITE	SPECIFIC IN	PUT DATA			NC	DISE MO	DEL INPUTS	
Highway Data				Site Con	ditions (H	lard = 10,	Soft = 15)	
Average Daily	Traffic (Adt): 1	18,281 vehicles				Auto	os: 15	
Peak Hour	Percentage:	7.57%		Med	dium Truc	ks (2 Axle	s): 15	
Peak H	our Volume:	1,384 vehicles		Hea	avy Truck	s (3+ Axle	s): 15	
Ve	hicle Speed:	40 mph	-	Vehicle N	liv			
Near/Far La	ne Distance:	82 feet	ŀ		cleType	Day	Evening	Night Dail
Site Data						itos: 77.	-	9.6% 96.79
Bai	rier Height:	0.0 feet		Me	dium Tru	cks: 84.8	3% 4.9%	10.3% 1.77
Barrier Type (0-W	all, 1-Berm):	0.0		h	leavy Tru	cks: 86.	5% 2.7%	10.8% 1.44
Centerline Dis	at. to Barrier:	60.0 feet	-	Noise So	urce Ele	vations (in	(feet)	
Centerline Dist.	to Observer:	60.0 feet	ŀ		Autos:		,	
Barrier Distance	to Observer:	0.0 feet		Mediun	n Trucks:			
Observer Height (	Above Pad):	5.0 feet			v Trucks:		Grade Adju	stment: 0.0
Pa	ad Elevation:	0.0 feet						
	ad Elevation:	0.0 feet	-	Lane Equ		Distance (i	in feet)	
1	Road Grade:	0.0%			Autos:	11.001		
	Left View:	-90.0 degrees			n Trucks:			
	Right View:	90.0 degrees		Heav	y Trucks:	43.909		
FHWA Noise Mode	el Calculations							
VehicleType		Traffic Flow D	Distance	Finite		Fresnel	Barrier Atter	n Berm Atte
Autos:	66.51	-0.06	0.7		-1.20	-4.6		
Medium Trucks:	77.72	-17.44	0.7		-1.20	-4.8		
Heavy Trucks:	82.99	-18.32	0.7	74	-1.20	-5.3	0.00	0.0
Unmitigated Noise								
	Leq Peak Hour			vening	Leq N	•	Ldn	CNEL
Autos:	66.0		-	63.5		57.5	66.1	6
Medium Trucks:	59.8		-	53.2		51.6	60.1	6
Heavy Trucks:	64.2			55.0		56.2	64.6	6
Vehicle Noise:	68.8	8 68.3	3	64.4		60.5	69.0	6
Centerline Distanc	e to Noise Cor	ntour (in feet)						
				dBA	65 dl		60 dBA	55 dBA
		Ldn		51		111	239	5 54
		CNEL		55		118	254	

APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS





# 13681 - Valley Boulevard and Willow Avenue CadnaA Noise Prediction Model: 13681\_05.cna

CadnaA Noise Prediction Model: 13681\_05.cna Date: 02.08.21 Analyst: S. Shami

### **Calculation Configuration**

Configurat	ion
Parameter	Value
General	
Country	(user defined)
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 (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

### **Receiver Noise Levels**

Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	Use	Height	:	C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	39.2	38.2	44.6	55.0	45.0	0.0				5.00	а	6220605.40	2337186.44	5.00
RECEIVERS		R2	26.8	25.5	32.0	55.0	45.0	0.0				5.00	а	6222523.80	2336729.84	5.00
RECEIVERS		R3	45.3	44.3	50.7	55.0	45.0	0.0				5.00	а	6220072.01	2334863.29	5.00
RECEIVERS		R4	45.6	44.6	51.0	55.0	45.0	0.0				5.00	а	6219562.66	2335451.86	5.00
RECEIVERS		R5	45.0	44.1	50.5	55.0	45.0	0.0				5.00	а	6219703.94	2336360.11	5.00

### Point Source(s)

	1		1														
Name	М.	ID	R	esult. PW	/L		Lw/L	i	Op	erating Ti	me	К0	Height	t	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night				х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		PARK24	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220527.90	2336610.94	5.0
POINTSOURCE		PARK23	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220602.31	2336609.48	5.0
POINTSOURCE		PARK22	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220570.21	2335106.76	5.0
POINTSOURCE		PARK21	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220654.83	2335103.84	5.0
POINTSOURCE		PARK20	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220756.96	2335102.38	5.0
POINTSOURCE		PARK19	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220838.66	2335100.93	5.0
POINTSOURCE		PARK18	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220948.08	2335100.93	5.0
POINTSOURCE		PARK17	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220476.84	2336527.78	5.0
POINTSOURCE		PARK16	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220476.84	2336463.59	5.0
POINTSOURCE		PARK15	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220478.30	2336384.80	5.0
POINTSOURCE		PARK14	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	a	6220476.84	2336316.23	5.0

Name	М.	ID	R	esult. PW	'L		Lw / L	i	Op	erating T	ime	К0	Height	:	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night				Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(dB)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		PARK13	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220475.38	2336243.28	5.00
POINTSOURCE		PARK12	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220476.84	2336176.17	5.00
POINTSOURCE		PARK11	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220476.84	2336110.52	5.00
POINTSOURCE		PARK10	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220476.84	2336040.49	5.00
POINTSOURCE		PARK09	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220473.92	2335967.54	5.00
POINTSOURCE		PARK08	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220473.92	2335904.81	5.00
POINTSOURCE		PARK07	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220476.84	2335836.24	5.00
POINTSOURCE		PARK06	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220472.46	2335764.75	5.00
POINTSOURCE		PARK05	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220471.00	2335664.08	5.00
POINTSOURCE		PARK04	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220473.92	2335608.64	5.00
POINTSOURCE		PARK03	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220472.46	2335545.91	5.00
POINTSOURCE		PARK02	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220471.00	2335474.42	5.00
POINTSOURCE		PARK01	79.0	79.0	79.0	Lw	79		900.00	0.00	540.00	0.0	5.00	а	6220471.00	2335407.31	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	0.0	5.00	а	6220469.54	2335340.19	5.00
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6220758.42	2336360.00	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	0.0	5.00	g	6220984.55	2335200.13	50.00

# Line Source(s)

Name	М.	ID	R	esult. PW	Ľ	R	esult. PW	Ľ		Lw/L	i	Ор	erating Ti	me	Moving Pt. Sr				Height
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)
LINESOURCE		TRUCK01	93.2	93.2	93.2	65.0	65.0	65.0	Lw	93.2		900.00	0.00	540.00					8

Name	ŀ	lei	ght			Coordinat	es	
	Begin	Begin			x	У	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	а			6220501.66	2335049.51	8.00	0.00
					6220520.61	2336551.12	8.00	0.00
					6220716.11	2336552.58	8.00	0.00
				6221047.23	2336209.57	8.00	0.00	

## Area Source(s)

Name	М.	ID	R	esult. PW	Ľ	Re	esult. PW	L''		Lw/L	i	Ope	erating Ti	me	Height
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
AREASOURCE		DOCK01	111.5	111.5	111.5	74.5	74.5	74.5	Lw	111.5		900.00	0.00	540.00	8

Name	ł	lei	ght		Coordinat	es	
	Begin		End	х	У	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	а		6220614.56	2335330.89	8.00	0.00
				6220554.59	2335331.22	8.00	0.00
				6220564.30	2336245.39	8.00	0.00
				6220622.50	2336245.37	8.00	0.00

## Barrier(s)

Name	М.	ID	Abso	rption	Z-Ext.	Canti	ilever	H	lei	ght		Coordinat	es	
			left	right		horz.	vert.	Begin		End	x	У	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERTEMP		0						14.00	а		6220553.60	2335305.59	14.00	0.00
											6220524.22	2335304.51	14.00	0.00
BARRIERTEMP		0						14.00	а		6220483.95	2335306.21	14.00	0.00
											6220429.36	2335306.21	14.00	0.00
BARRIEREXISTING		0						5.00	а		6220078.58	2335480.14	5.00	0.00
											6219808.56	2335482.21	5.00	0.00
											6219808.74	2335463.38	5.00	0.00
BARRIEREXISTING		0						5.00	а		6219809.25	2335433.67	5.00	0.00
											6219807.18	2335342.80	5.00	0.00
											6219951.78	2335341.25	5.00	0.00

# Building(s)

Name	М.	ID	RB	Residents	Absorption	Height		Coordinates						
						Begin		х	У	z	Ground			
						(ft)		(ft)	(ft)	(ft)	(ft)			
BUILDING		BUILDING00001	х	0		45.00	а	6220565.75	2336424.48	45.00	0.00			
								6220795.89	2336421.20	45.00	0.00			
								6221011.92	2336193.68	45.00	0.00			
								6221009.63	2336191.38	45.00	0.00			
								6221017.18	2336183.50	45.00	0.00			
								6221016.19	2336170.70	45.00	0.00			
								6221021.12	2336170.70	45.00	0.00			
								6221010.28	2335145.05	45.00	0.00			
								6220552.29	2335151.94	45.00	0.00			

Name N	1. ID	RB	Residents	Absorption	Height	:		Coordinat		<u>.</u>
					Begin	_	X	y (())	Z (0)	Ground
					(ft)	-	(ft)	(ft)	(ft)	(ft)
						$\vdash$	6220553.60	2335305.59	45.00	0.00
						$\vdash$	6220614.34 6220622.73	2335304.61 2336271.81	45.00	0.00
							6220622.73	2336271.81	45.00	0.00
BUILDING	BUILDING00002	x	0		30.00	-	6220304.37	2335398.67	30.00	0.00
BUILDING	BUILDING00002	^	0		30.00	a	6220232.33	2335398.07	30.00	0.00
							6220398.69			0.00
						$\vdash$		2335341.51 2335346.41	30.00	0.00
						$\vdash$	6220301.54			
						-	6220303.99	2335205.17	30.00 30.00	0.00
	DUU DINGOOOD		-		45.00	-	6220250.92	2335205.17		0.00
BUILDING	BUILDING00003	х	0		45.00	d	6220096.83	2335630.44	45.00	0.00
						-	6220376.08	2335627.41	45.00	0.00
						-	6220375.32	2335582.89	45.00	0.00
						-	6220404.16	2335581.88	45.00	0.00
						$\vdash$	6220404.16	2335519.40	45.00	0.00
					45.00	-	6220096.32	2335519.65	45.00	0.00
BUILDING	BUILDING00004	х	0		15.00	а	6219856.70	2336264.84	15.00	0.00
							6220352.36	2336262.24	15.00	0.00
						<u> </u>	6220355.83	2336052.17	15.00	0.00
							6219855.83	2336058.25	15.00	0.00
BUILDING	BUILDING00005	х	0		30.00	a	6219818.48	2336863.08	30.00	0.00
	_						6219946.08	2336861.51	30.00	0.00
							6219944.52	2336800.06	30.00	0.00
						L	6220357.02	2336799.53	30.00	0.00
						Ĺ	6220359.63	2336454.74	30.00	0.00
							6219938.79	2336456.31	30.00	0.00
							6219939.31	2336442.24	30.00	0.00
							6219816.40	2336444.33	30.00	0.00
BUILDING	BUILDING00006	х	0		15.00	a	6220087.62	2335349.05	15.00	0.00
							6220129.55	2335348.79	15.00	0.00
							6220129.55	2335207.64	15.00	0.00
							6220086.32	2335208.42	15.00	0.00
BUILDING	BUILDING00007	x	0		20.00	a	6219988.85	2335754.66	20.00	0.00
							6220049.01	2335753.36	20.00	0.00
							6220048.48	2335699.45	20.00	0.00
						$\vdash$	6220030.26	2335699.45	20.00	0.00
						$\vdash$	6220030.52	2335680.44	20.00	0.00
						⊢	6219988.33	2335680.44	20.00	0.00
BUILDING	BUILDING00008	x	0		20.00	-	6219989.37	2335824.45	20.00	0.00
BUILDING	BUILDING00008	^	0		20.00	a				
						$\vdash$	6220071.66	2335824.19	20.00	0.00
						-	6220071.14	2335791.12	20.00	0.00
					45.00		6219987.81	2335790.86		0.00
BUILDING	BUILDING00009	х	0		15.00	a	6219870.88	2335819.77	15.00	0.00
						-	6219905.78	2335819.77	15.00	0.00
							6219906.82	2335790.86	15.00	0.00
							6219871.14	2335790.86	15.00	0.00
BUILDING	BUILDING00010	х	0		15.00	а	6219936.49	2335535.81	15.00	0.00
							6220001.34	2335534.90	15.00	0.00
							6220001.80	2335515.72	15.00	0.00
							6220012.31	2335515.26	15.00	0.00
							6220012.76	2335505.21	15.00	0.00
						Ĺ	6220004.08	2335504.76	15.00	0.00
						L	6220004.08	2335483.75	15.00	0.00
							6219950.65	2335483.75	15.00	0.00
						Γ		2335500.19	15.00	0.00
							6219935.57	2335502.02	15.00	0.00
BUILDING	BUILDING00011	х	0		15.00	a	6219878.48		15.00	0.00
								2335496.99	15.00	0.00
						F		2335494.71	15.00	0.00
						F		2335518.00	15.00	0.00
	1					F		2335510.00	15.00	0.00
						$\vdash$		2335541.29	15.00	0.00
		-				$\vdash$		2335540.84	15.00	0.00
	+					$\vdash$		2335540.84	15.00	0.00
	BUILDING00012	~	-		15 00	-				
BUILDING	BUILDING00012	×	0		12.00	d	6219837.57		15.00	0.00
		-				$\vdash$		2335821.16	15.00	0.00
						-		2335759.96	15.00	0.00
						-		2335759.96	15.00	0.00
			-					2335728.93	15.00	0.00
								2335731.53	15.00	0.00
								2335757.14	15.00	0.00
							6219855.80	2335756.92	15.00	0.00
							6219857.10	2335734.79	15.00	0.00
						L	6219827.37	2335734.14	15.00	0.00
						Ĺ	6219826.94	2335743.90	15.00	0.00
						[	6219819.34	2335744.34	15.00	0.00

Name	М.	ID	RB	Residents	Absorption	Height		Coordinates						
						Begin		х	У	z	Ground			
						(ft)		(ft)	(ft)	(ft)	(ft)			
								6219828.89	2335777.54	15.00	0.00			
								6219828.02	2335800.11	15.00	0.00			
								6219837.14	2335800.33	15.00	0.00			
BUILDING		BUILDING00013	х	0		15.00	а	6219951.92	2335339.36	15.00	0.00			
								6220009.73	2335339.36	15.00	0.00			
								6220009.21	2335366.44	15.00	0.00			
								6220079.52	2335368.53	15.00	0.00			
								6220077.96	2335297.69	15.00	0.00			
								6219951.92	2335298.74	15.00	0.00			

# Ground Absorption(s)

Name	М.	ID	G	Coord	inates
				х	У
				(ft)	(ft)
GROUND		0	0.0	6220940.26	2335778.83
				6221011.55	2335775.12
				6221005.99	2335514.98
				6220937.48	2335511.28
GROUND		0	1.0	6220097.51	2334963.78
				6220409.73	2334959.41
				6220403.89	2334435.64
				6220087.30	2334425.43

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS





## 13681 - Valley Boulevard and Willow Avenue

CadnaA Noise Prediction Model: 13681\_02\_Construction.cna Date: 16.06.21 Analyst: S. Shami

### **Calculation Configuration**

Configurat	ion
Parameter	Value
General	
Country	(user defined)
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 (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

### **Receiver Noise Levels**

Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	65.2	65.2	71.9	55.0	45.0	0.0				5.00	а	6220605.40	2337186.44	5.00
RECEIVERS		R2	60.2	60.2	66.8	55.0	45.0	0.0				5.00	а	6222523.80	2336729.84	5.00
RECEIVERS		R3	66.6	66.6	73.3	55.0	45.0	0.0				5.00	а	6220044.72	2334879.67	5.00
RECEIVERS		R4	64.9	64.9	71.5	55.0	45.0	0.0				5.00	а	6219562.66	2335451.86	5.00
RECEIVERS		R5	65.5	65.5	72.2	55.0	45.0	0.0				5.00	а	6219703.94	2336360.11	5.00

## Area Source(s)

Name	М.	ID	R	Result. PWL			Result. PWL"			Lw/L	i	Op	Height		
			Day	Day Evening Night		Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
SITEBOUNDARY		CONSTRUCTION	128.4	128.4	128.4	79.0	79.0	79.0	Lw"	79					8

Name	ł	lei	ght		Coordinat	es	
	Begin		End	x	у	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	8.00	а		6220419.06	2336655.37	8.00	0.00
				6220686.67	2336649.29	8.00	0.00
				6220812.50	2336512.82	8.00	0.00
				6220787.03	2336512.44	8.00	0.00
				6221047.58	2336237.49	8.00	0.00
				6221033.35	2335078.57	8.00	0.00

Name	н	eight	Coordinates							
	Begin	End	х	у	z	Ground				
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)				
			6220996.86	2335040.55	8.00	0.00				
			6220405.14	2335051.26	8.00	0.00				

APPENDIX 10.2:

CADNAA CONCRETE CRUSHING CONSTRUCTION NOISE MODEL INPUTS





## 13681 - Valley Boulevard and Willow Avenue

CadnaA Noise Prediction Model: 13681\_06\_Concrete Crushing.cna Date: 20.10.21 Analyst: S. Shami

### **Calculation Configuration**

Configurat	ion
Parameter	Value
General	
Country	(user defined)
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 (RLS-90)	
Strictly acc. to RLS-90	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

#### **Receiver Noise Levels**

	-	-			-											
Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	l Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	50.5	50.5	57.2	55.0	45.0	0.0				5.00	а	6220605.40	2337186.44	5.00
RECEIVERS		R2	48.8	48.8	55.5	55.0	45.0	0.0				5.00	а	6222523.80	2336729.84	5.00
RECEIVERS		R3	53.0	53.0	59.7	55.0	45.0	0.0				5.00	а	6220044.72	2334879.67	5.00
RECEIVERS		R4	51.5	51.5	58.1	55.0	45.0	0.0				5.00	а	6219562.66	2335451.86	5.00
RECEIVERS		R5	51.3	51.3	57.9	55.0	45.0	0.0				5.00	а	6219703.94	2336360.11	5.00

### Area Source(s)

Name	М.	ID	R	esult. PW	'L	Result. PWL''				Lw/L	i	Op	Height		
			Day Evening Night		Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
GROUND		CONSRETE CRUSHING	116.3	116.3	116.3	84.0	84.0	84.0	Lw"	84					8

Name	ŀ	lei	ght		Coordinates							
	Begin		End		х	У	z	Ground				
	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)					
GROUND	8.00	а			6220940.26	2335778.83	8.00	0.00				
					6221011.55	2335775.12	8.00	0.00				
					6221005.99	2335514.98	8.00	0.00				
					6220937.48	2335511.28	8.00	0.00				

13681-04 Noise Study

APPENDIX 10.3:

CADNAA NIGHTTIME CONCRETE POUR CONSTRUCTION NOISE MODEL INPUTS





## 13681 - Valley Boulevard and Willow Avenue

CadnaA Noise Prediction Model: 13681\_05\_ConcretePour.cna Date: 02.08.21 Analyst: S. Shami

### **Calculation Configuration**

ParameterValueGeneral(user defined)Country(user defined)Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rovr0.00Partition0.00Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))0.00Proj. Line SourcesOnProj. Area SourcesOnRef. Time960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Reforence Time Night (min)480.00Daytime Penalty (dB)5.00Night-time Penalty (dB)0.00Model of TerrainTriangulationReflection1max. Order of Reflection2Search Radius Src100.00Max. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)1Lateral DiffractionSome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)3.0 20.0.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Since Since Since Since Since Since Since Since Sinc	Configurat	ion
Country(user defined)Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rovr0.00PartitionRaster FactorRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Reference Time Penalty (dB)1.00DTMStandard Height (m)DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Rovr1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Min. Distance Source - Royr100.00.00Min. Distance Source - Royr100.00Min. Distance Source - Royr100.00Min. Distance Source - Reflector1.00Min. Distance Source - Roy1.00Min. Distance Source - Royr100.00Min. Distance Source - Royr100.00Min. Dist		
Country(user defined)Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rovr0.00PartitionRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Reference Time Penalty (dB)1.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Rovr1000.00 1000.00Min. Distance Source - Rovr1000.00 1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Some ObjLateral Diffractionsome ObjScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Barrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	General	
Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00PartitionRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Reference Time Night (min)480.00Daytime Penalty (dB)5.00Night-time Penalty (dB)1.00DTM5Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Rcvr1000.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)ILateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Render Coefficients C1,2,33.0 20.0 0.0Roads (RLS-90)Some Obj0.0Nind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90IIRailways (FTA/FRA)Aircraft (???)		(user defined)
Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00PartitionRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))909.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Ref. TimeStandard Height (m)0.00Model of TerrainTriangulationReflectionmax. Order of Reflection2Search Radius Src100.00Max. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Lateral DiffractionSome ObjObst. within Area Src do not shieldOnScreingIncl. Ground Att. over BarrierCompatature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)SinceraficenaRailways (FTA/FRA)Aircraft (???)		
Min. Dist Src to Rcvr0.00Partition		2000.01
Partition0.50Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. Time960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Refr. Time0.00Rer. Time Penalty (dB)5.00Night-time Penalty (dB)0.00Time Penalty (dB)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr100.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)1.01Lateral DiffractionSome ObjScreeningIncl. Ground Att. over BarrierDz with limit (20/25)3.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)		
Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeEReference Time Day (min)960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Rer. Time Penalty (dB)1.00DTMStandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Revr1000.00Min. Distance Source - Revr1000.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Iacler and Ario		
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Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnRef. TimeEReference Time Day (min)960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Retr. Time Penalty (dB)5.00Night-time Penalty (dB)0.00ReflectionDDTM0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Src1000.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Rcflector0.10Industrial (ISO 9613)ELateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)EBarrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Sitricty act. to RLS-90Railways (FTA/FRA)Aircraft (???)		
Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00Night-time Penalty (dB)0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Rcvr1000.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)1Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreiningIncl. Ground Att. over BarrierTemperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)		1.01
Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Rvr100.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral DiffractionSoure ObjObst. within Area Src do not shieldOnScreiningIncl. Ground Att. over BarrierDe with limit (20/25)3.0 20.00Barrier Coefficients C1,2,33.0 20.00Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Sithicty act. to RLS-90Railways (FTA/FRA)Aircraft (??)		0.00
Proj. Area SourcesOnRef. Time960.00Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTM0.00Model of TerrainTriangulationReftetion2Search Radius Src100.00Max. Distance Source - Revr100.00Min. Distance Source - Reflector1.00Nin. Distance Source - Reflector0.10Industrial (ISO 9613)0Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Strictly acc. to RLS-90Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)		
Ref. TimeP60.00Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr100.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)1.00Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90Srictly act. to RLS-90Railways (FTA/FRA)Aircraft (???)		
Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2search Radius Src100.00Max. Distance Rvcr100.00Min. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Some ObjLateral Diffractionsome ObjScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly act. to RLS-90Railways (FTA/FRA)Aircraft (???)	· ·	-
Reference Time Night (min)         480.00           Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         5.00           Night-time Penalty (dB)         10.00           DTM         5.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         2           Search Radius Src         100.00           Max. Order of Reflection         2           Search Radius Src         100.00           Max. Distance Nevr         1000.00           Min. Distance Source - Reflector         1.00           Min. Distance Source - Reflector         0.10           Industrial (ISO 9613)         E           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         10           rel. Humidity (%)         70		960.00
Daytime Penalty (dB)         0.00           Recr. Time Penalty (dB)         5.00           Night-time Penalty (dB)         10.00           DTM         0.00           Standard Height (m)         0.00           Model of Terrain         Triangulation           Reflection         2           Search Radius Src         100.00           Search Radius Rcvr         100.00           Max. Order of Reflection         2           Search Radius Rcvr         100.00           Max. Distance Source - Rcvr         1000.00           Min. Distance Source - Rcflector         1.00 1.00           Min. Distance Source - Reflector         0.10           Industrial (ISO 9613)         2           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         10           rel. Humidity (%)         70         Ground Absorption G           Ground Absorption G         0.50         0           Wind Speed for Dir. (#(Unit,SPEED))         3.0         3.0		480.00
Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Search Radius Src100.00Max. Distance Source - Revr1000.00 1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)1Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)		
Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2max. Order of Reflection2Search Radius Src100.00Max. Distance Source - Revr1000.00 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierDost. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)3.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)		5.00
DTM     0.00       Standard Height (m)     0.00       Model of Terrain     Triangulation       Reflection     2       search Radius Src     100.00       Search Radius Src     100.00       Max. Distance Source - Revr     1000.00 1000.00       Min. Distance Source - Reflector     1.00 1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     1       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Dz with limit (20/25)     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       Strictly acc. to RLS-90     1       Strictly acc. to RLS-90     1       Railways (FTA/FRA)     Aircraft (???)		10.00
Model of Terrain     Triangulation       Reflection     2       Search Radius Src     100.00       Search Radius Revr     100.00       Max. Distance Source - Revr     1000.00       Min. Distance Source - Reflector     1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     1       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       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 (RLS-90)     Strictly act. to RLS-90       Railways (FTA/FRA)     Aircraft (???)		
Model of Terrain     Triangulation       Reflection     2       Search Radius Src     100.00       Search Radius Revr     100.00       Max. Distance Source - Revr     1000.00       Min. Distance Source - Reflector     1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     1       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       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 (RLS-90)     Strictly act. to RLS-90       Railways (FTA/FRA)     Aircraft (???)	Standard Height (m)	0.00
Reflection         2           max. Order of Reflection         2           Search Radius Src         100.00           Search Radius Rovr         1000.00           Max. Distance Source - Royr         1000.00           Min. Distance Source - Reflector         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            Roads (RLS-90)         Incl. Ground Att.            Strictly act. to RLS-90         Incl. Ground Att.            Railways (FTA/FRA)         Aircraft (???)         Incl. Ground Att.		Triangulation
Search Radius Src100.00Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Rovr - Reflector1.00 1.00Industrial (ISO 9613)1Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)2Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	Reflection	
Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Rcvr - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (RLS-90)Strictly acc. to RLS-90Railways (FTA/FRA)Aircraft (???)	max. Order of Reflection	2
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)     some Obj       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 (RLS-90)     Strictly acc. to RLS-90       Railways (FTA/FRA)     Aircraft (???)	Search Radius Src	100.00
Min. Distance Rvcr - Reflector     1.00 1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     some Obj       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 (RLS-90)     Strictly acc. to RLS-90       Railways (FTA/FRA)     Aircraft (???)	Search Radius Rcvr	100.00
Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     some Obj       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 (RLS-90)     Strictly acc. to RLS-90       Railways (FTA/FRA)     Aircraft (???)	Max. Distance Source - Rcvr	1000.00 1000.00
Industrial (ISO 9613)     some Obj       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 (RLS-90)     Incl.       Strictly acc. to RLS-90     Incl.       Railways (FTA/FRA)     Aircraft (???)	Min. Distance Rvcr - Reflector	1.00 1.00
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 (RLS-90)     Strictly acc. to RLS-90       Railways (FTA/FRA)     Aircraft (???)	Min. Distance Source - Reflector	0.10
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 (RLS-90)     Strictly acc. to RLS-90       Railways (FTA/FRA)     Aircraft (???)	Industrial (ISO 9613)	
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 (RLS-90)     Strictly acc. to RLS-90       Railways (FTA/FRA)     Aircraft (???)	Lateral Diffraction	some Obj
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 (RLS-90)         Strictly acc. to RLS-90           Railways (FTA/FRA)         Aircraft (???)	Obst. within Area Src do not shield	On
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 (RLS-90)         Strictly acc. to RLS-90           Strictly acc. to RLS-90         Aircraft (???)	Screening	Incl. Ground Att. over Barrier
Temperature (#(Unit,TEMP))     10       rel. Humidity (%)     70       Ground Absorption G     0.50       Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (RLS-90)     3.0       Strictly acc. to RLS-90     2       Railways (FTA/FRA)     2       Aircraft (???)     2	_	Dz with limit (20/25)
rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)	Barrier Coefficients C1,2,3	3.0 20.0 0.0
rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (RLS-90) Strictly acc. to RLS-90 Railways (FTA/FRA) Aircraft (???)		10
Ground Absorption G     0.50       Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (RLS-90)		70
Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (RLS-90)		0.50
Roads (RLS-90)       Strictly acc. to RLS-90       Railways (FTA/FRA)       Aircraft (???)		3.0
Railways (FTA/FRA)       Aircraft (???)		
Railways (FTA/FRA)       Aircraft (???)	Strictly acc. to RLS-90	
Aircraft (???)		
Strictly acc. to AzB	Strictly acc. to AzB	

### **Receiver Noise Levels**

Name	М.	ID	Level Lr			Lir	nit. Valı	ue	Land Use Heig			Height		C	Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)	
RECEIVERS		R1	52.5	52.5	59.2	55.0	45.0	0.0				5.00	а	6220605.40	2337186.44	5.00	
RECEIVERS		R2	48.7	48.7	55.4	55.0	45.0	0.0				5.00	а	6222523.80	2336729.84	5.00	
RECEIVERS		R3	51.2	51.2	57.8	55.0	45.0	0.0				5.00	а	6220072.01	2334863.29	5.00	
RECEIVERS		R4	48.6	48.6	55.3	55.0	45.0	0.0				5.00	а	6219562.66	2335451.86	5.00	
RECEIVERS		R5	49.5	49.5	56.2	55.0	45.0	0.0				5.00	а	6219703.94	2336360.11	5.00	

### Area Source(s)

Name	М.	ID	R	Result. PWL			esult. PW	L''	Lw / Li			Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	
BUILDING		Nighttime Concrete Pour	116.7	116.7	116.7	70.0	70.0	70.0	Lw"	70					8

Name	ł	lei	ght		Coordinates							
	Begin		End		х	У	z	Ground				
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)				
BUILDING	8.00	а			6220565.75	2336424.48	8.00	0.00				
					6220795.89	2336421.20	8.00	0.00				
					6221011.92	2336193.68	8.00	0.00				
					6221009.63	2336191.38	8.00	0.00				
					6221017.18	2336183.50	8.00	0.00				
					6221016.19	2336170.70	8.00	0.00				

Name	н	eight			Coordinat	es	
	Begin		nd	x	У	z	Ground
	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)
				6221021.12	2336170.70	8.00	0.00
				6221010.28	2335145.05	8.00	0.00
				6220552.29	2335151.94	8.00	0.00
				6220553.60	2335305.59	8.00	0.00
				6220614.34	2335304.61	8.00	0.00
				6220622.73	2336271.81	8.00	0.00
				6220564.57	2336272.67	8.00	0.00

# Barrier(s)

Name	М.	ID	Abso	rption	Z-Ext.	Canti	ilever	H	Height		Coordinates					
			left	right		horz.	vert.	Begin		End		x	У	z	Ground	
					(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)	
BARRIEREXISTING		0						5.00	а			6220078.58	2335480.14	5.00	0.00	
												6219808.56	2335482.21	5.00	0.00	
												6219808.74	2335463.38	5.00	0.00	
BARRIEREXISTING		0						5.00	а			6219809.25	2335433.67	5.00	0.00	
												6219807.18	2335342.80	5.00	0.00	
												6219951.78	2335341.25	5.00	0.00	

### Building(s)

Name		S)									
	M.	ID	RB	Residents	Absorption	Height			Coordinat	es	
						Begin		х	У	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00002	х	0		30.00	а	6220252.55	2335398.67	30.00	0.00
								6220398.69	2335397.03	30.00	0.00
								6220398.69	2335341.51	30.00	0.00
								6220301.54	2335346.41	30.00	0.00
								6220303.99	2335205.17	30.00	0.00
								6220250.92	2335205.17	30.00	0.00
BUILDING		BUILDING00003	х	0		45.00	а	6220096.83	2335630.44	45.00	0.00
								6220376.08	2335627.41	45.00	0.00
								6220375.32	2335582.89	45.00	0.00
								6220404.16	2335581.88	45.00	0.00
								6220404.16	2335519.40	45.00	0.00
								6220096.32	2335519.65	45.00	0.00
BUILDING		BUILDING00004	х	0		15.00	а	6219856.70	2336264.84	15.00	0.00
								6220352.36	2336262.24	15.00	0.00
								6220355.83	2336052.17	15.00	0.00
								6219855.83	2336058.25	15.00	0.00
BUILDING		BUILDING00006	х	0		15.00	а	6220087.62	2335349.05	15.00	0.00
								6220129.55	2335348.79	15.00	0.00
								6220129.55	2335207.64	15.00	0.00
								6220086.32	2335208.42	15.00	0.00
BUILDING		BUILDING00007	х	0		20.00	а	6219988.85	2335754.66	20.00	0.00
								6220049.01	2335753.36	20.00	0.00
								6220048.48	2335699.45	20.00	0.00
								6220030.26	2335699.45	20.00	0.00
								6220030.52	2335680.44	20.00	0.00
								6219988.33	2335680.44	20.00	0.00
BUILDING		BUILDING00008	х	0		20.00	а	6219989.37	2335824.45	20.00	0.00
								6220071.66	2335824.19	20.00	0.00
								6220071.14	2335791.12	20.00	0.00
								6219987.81	2335790.86	20.00	0.00
BUILDING		BUILDING00009	х	0		15.00	а	6219870.88	2335819.77	15.00	0.00
								6219905.78	2335819.77	15.00	0.00
								6219906.82	2335790.86	15.00	0.00
								6219871.14	2335790.86	15.00	0.00
BUILDING		BUILDING00010	х	0		15.00	а	6219936.49	2335535.81	15.00	0.00
								6220001.34	2335534.90	15.00	0.00
								6220001.80	2335515.72	15.00	0.00
								6220012.31	2335515.26	15.00	0.00
								6220012.76	2335505.21	15.00	0.00
								6220004.08	2335504.76	15.00	0.00
								6220004.08	2335483.75	15.00	0.00
								6219950.65	2335483.75	15.00	0.00
								6219948.36	2335500.19	15.00	0.00
								6219935.57	2335502.02	15.00	0.00
BUILDING		BUILDING00011	х	0		15.00	а	6219878.48	2335560.02	15.00	0.00
								6219879.85	2335496.99	15.00	0.00
	1							6219826.87	2335494.71	15.00	0.00
	-							6219825.04	2335518.00	15.00	0.00
								6219838.75	2335517.54	15.00	0.00
								6219838.75 6219839.20	2335517.54 2335541.29	15.00 15.00	
											0.00

Name	М.	ID	RB	Residents	Absorption	Height	Height		Coordinat	es	
						Begin		х	У	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00012	х	0		15.00	а	6219837.57	2335820.94	15.00	0.00
								6219866.22	2335821.16	15.00	0.00
								6219865.78	2335759.96	15.00	0.00
								6219904.63	2335759.96	15.00	0.00
								6219905.06	2335728.93	15.00	0.00
								6219861.44	2335731.53	15.00	0.00
								6219861.01	2335757.14	15.00	0.00
								6219855.80	2335756.92	15.00	0.00
								6219857.10	2335734.79	15.00	0.00
								6219827.37	2335734.14	15.00	0.00
								6219826.94	2335743.90	15.00	0.00
								6219819.34	2335744.34	15.00	0.00
								6219819.34	2335776.89	15.00	0.00
								6219828.89	2335777.54	15.00	0.00
								6219828.02	2335800.11	15.00	0.00
								6219837.14	2335800.33	15.00	0.00
BUILDING		BUILDING00013	х	0		15.00	а	6219951.92	2335339.36	15.00	0.00
								6220009.73	2335339.36	15.00	0.00
								6220009.21	2335366.44	15.00	0.00
								6220079.52	2335368.53	15.00	0.00
								6220077.96	2335297.69	15.00	0.00
								6219951.92	2335298.74	15.00	0.00
BUILDING		BUILDING00005	х	0		30.00	а	6219818.48	2336863.08	30.00	0.00
								6219946.08	2336861.51	30.00	0.00
								6219944.52	2336800.06	30.00	0.00
								6220357.02	2336799.53	30.00	0.00
								6220359.63	2336454.74	30.00	0.00
								6219938.79	2336456.31	30.00	0.00
								6219939.31	2336442.24	30.00	0.00
								6219816.40	2336444.33	30.00	0.00

### Ground Absorption(s)

Name	М.	ID	G	Coord	inates
				х	У
				(ft)	(ft)
GROUND		0	1.0	6220097.51	2334963.78
				6220409.73	2334959.41
				6220403.89	2334435.64
				6220087.30	2334425.43

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