

S. Arrowhead Avenue

NOISE IMPACT ANALYSIS CITY OF SAN BERNARDINO

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14660-06 Noise Study



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LIST OF ABBREVIATED TERMS

(1) Reference

ADT Average Daily Traffic

ANSI American National Standards Institute
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

Hz Hertz

INCE Institute of Noise Control Engineering

 $\begin{array}{lll} L_{eq} & & & \text{Equivalent continuous (average) sound level} \\ L_{max} & & \text{Maximum level measured over the time interval} \\ L_{min} & & \text{Minimum level measured over the time interval} \end{array}$

OPR Office of Planning and Research

PPV Peak particle velocity
Project S. Arrowhead Avenue

REMEL Reference Energy Mean Emission Level

RMS Root-mean-square VdB Vibration Decibels



EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed S. Arrowhead Avenue development ("Project"). The Project is proposed to consist of 230,320 square feet of industrial use within three buildings. This study has been prepared to satisfy applicable City of San Bernardino 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 S. Arrowhead Avenue 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.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Amalusia	Report	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	-	
Nighttime Concrete Pour Noise	10	Less Than Significant	-	
Construction Vibration		Less Than Significant	-	

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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed S. Arrowhead Avenue ("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 proposed project is located on the southeast corner of Arrowhead Avenue and Rialto Avenue in the City of San Bernardino as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of 230,320 square feet of industrial use within three buildings, as shown on Exhibit 1-B. The Project is anticipated to be developed within a single phase with an Opening Year of 2024. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site.



EXHIBIT 1-A: LOCATION MAP

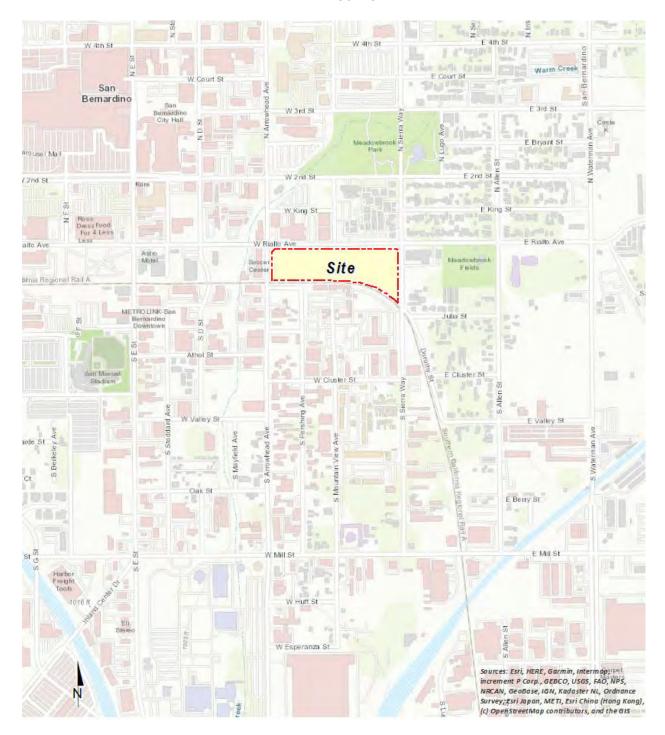
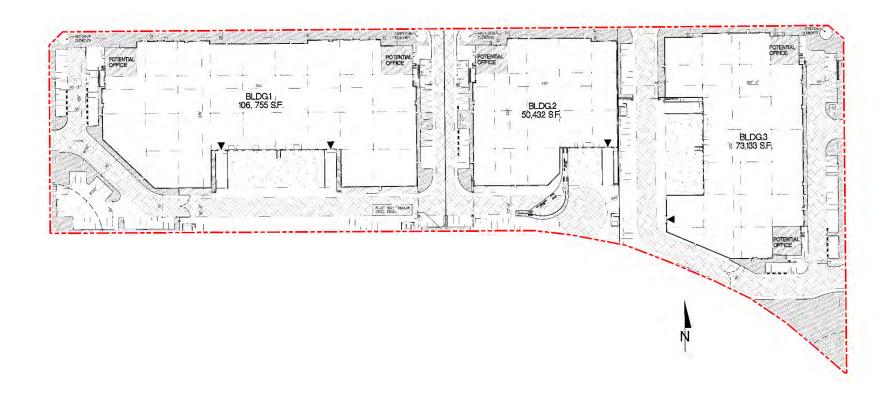




EXHIBIT 1-B: SITE PLAN





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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). Aweighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE	
THRESHOLD OF PAIN		140			
NEAR JET ENGINE		130	INTOLERABLE OR		
		120	DEAFENING	HEARING LOSS	
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		1,2,1,1,1,2,2,2,2	
LOUD AUTO HORN		100			
GAS LAWN MOWER AT 1m (3 ft)		90	VERY NOISY		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80	VERY NOISY		
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	1000		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	ciera	
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		SLEEP 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	VERT PAIN!		

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

2.1 RANGE OF NOISE

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



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

2.2 Noise Descriptors

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

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

2.3 SOUND PROPAGATION

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

2.3.1 GEOMETRIC SPREADING

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

2.3.2 GROUND ABSORPTION

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



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

2.3.3 ATMOSPHERIC EFFECTS

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

2.3.4 SHIELDING

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

2.4 Noise Control

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

2.5 Noise Barrier Attenuation

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



2.6 LAND USE COMPATIBILITY WITH NOISE

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

2.7 COMMUNITY RESPONSE TO NOISE

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

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

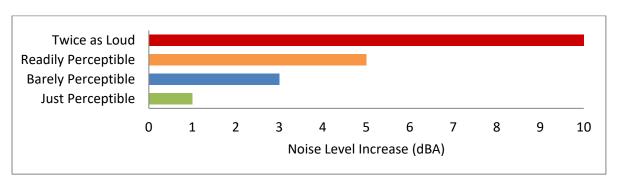


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Impact Assessment Manual* (8), 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.



Velocity Typical Sources Level* (50 ft from source) Human/Structural Response 100 Threshold, minor cosmetic damage Blasting from construction projects fragile buildings Bulldozers and other heavy tracked construction equipment Difficulty with tasks such as 90 reading a VDT screen Commuter rail, upper range 80 Residential annoyance, infrequent Rapid transit, upper range events (e.g. commuter rail) Commuter rail, typical Residential annoyance, frequent Bus or truck over bump events (e.g. rapid transit) Rapid transit, typical Limit for vibration sensitive equipment. Approx. threshold for Bus or truck, typical human perception of vibration 60 Typical background vibration 50

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

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

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



3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

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

3.2 CITY OF SAN BERNARDINO GENERAL PLAN NOISE ELEMENT

The City of San Bernardino General Plan Noise Element identifies several policies to minimize the impacts of excessive noise levels throughout the community. (10) The Noise Element provides policy guidance which addresses the generation, mitigation, avoidance, and the control of excessive noise. To protect City of San Bernardino residents from excessive noise levels, the Noise Element contains the following three goals:

- 14.1 Ensure that residents are protected from excessive noise through careful land planning.
- 14.2 Encourage the reduction of noise from transportation-related noise sources such as motor vehicles, aircraft operations, and railroad movements.
- 14.3 Protect residents from the negative effects of "spill over" or nuisance noise.

The noise policies specified in the City of San Bernardino Noise Element provide the guidelines necessary to satisfy these goals. To ensure that residents are not exposed to excessive noise levels (Goal 14.1), Policies 14.1.1 to 14.1.4 indicate that sensitive land uses such as housing, health care facilities, schools, libraries, and religious facilities should not experience exterior noise levels greater than 65 dBA LDN for exterior areas and 45 dBA LDN for interior areas. As discussed in Section 2.2 the more conservative CNEL descriptor is used in this analysis, and therefore, the exterior noise level criteria of 65 dBA CNEL and interior noise level criteria of 45 dBA CNEL shall apply to sensitive land uses. Policies 14.2.1 to 14.2.19 outline the transportation-related guidelines and mitigation strategies the City uses to satisfy Goal 14.2. To protect residents from sources of operational and construction noise (Goal 14.3), the Noise Element



includes Policies 14.3.1 to 14.3.8 to adopt a Noise Ordinance and ensure noise issues between land uses are reduced. (10)

3.2.1 LAND USE COMPATIBILITY

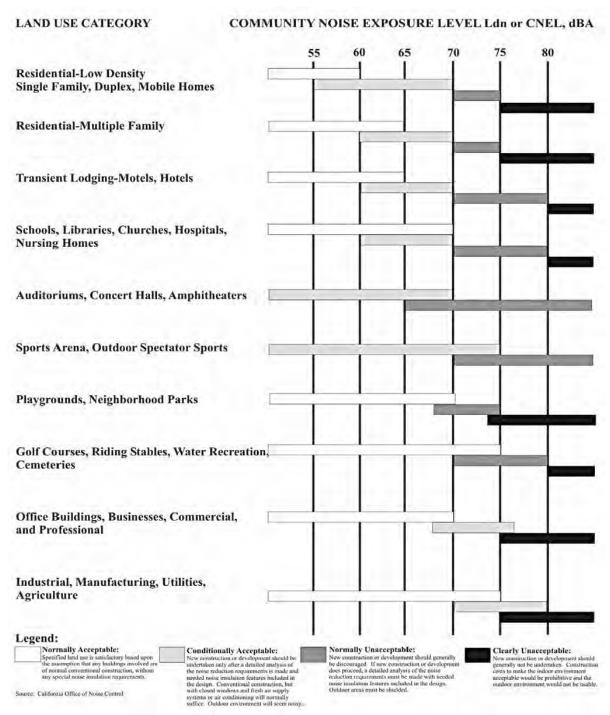
The noise criteria identified in the City of San Bernardino Noise Element (Figure N-1) are guidelines to evaluate the land use compatibility of transportation-related noise. The compatibility criteria, shown on Exhibit 3-A, provides the City with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels. The Land Use Compatibility for Community Noise Exposure guidelines indicate that industrial land uses, such as the Project, are considered normally acceptable with noise levels below 75 dBA CNEL and conditionally acceptable with noise levels of less than 80 dBA CNEL.

3.2.2 Transportation Noise Standards

To encourage the reduction of noise from transportation-related noise sources such as motor vehicles, aircraft operations and railroad movements (Goal 14.2), Table N-3 of the City of San Bernardino General Plan Noise Element, shown on Exhibit 3-B, identifies a maximum allowable exterior noise level of 65 dBA CNEL and an interior noise level limit of 45 dBA CNEL for new residential developments. While the City specifically identifies an exterior noise level limit for noise-sensitive residential land uses such as hotels, hospitals, schools, and parks, the City of San Bernardino does not maintain exterior noise standards for non-noise sensitive land uses such as manufacturing, warehousing, wholesale and utilities.



EXHIBIT 3-A: LAND USE COMPATIBILITY FOR COMMUNITY NOISE EXPOSURE



Source: City of San Bernardino General Plan Noise Element, Figure N-1.



EXHIBIT 3-B: INTERIOR AND EXTERIOR NOISE STANDARDS

Land Use CNEL (dBA)					
Categories	Categories Uses				
Residential	Single and multi-family, duplex	45 ³	65		
	Mobile homes		65 ⁴		
	Hotel, motel, transient housing	45			
	Commercial retail, bank, restaurant	55			
	Office building, research and	50			
	development, professional offices				
	Amphitheater, concert hall, auditorium,	45			
Commercial	movie theater				
	Gymnasium (Multipurpose)	50			
	Sports Club	55			
	Manufacturing, warehousing, wholesale,	65			
	utilities				
	Movie Theaters	45			
Institutional/	Hospital, school classrooms/playgrounds	45	65		
Public	Church, library	45			
Open Space	Parks		65		

¹ Indoor environment excluding: bathrooms, kitchens, toilets, closets, and corridors

- Private yard of single-family dwellings
- Multi-family private patios or balconies accessed from within the dwelling (Balconies 6 feet deep or less are exempt)
- Mobile home parks
- Park picnic areas
- School playgrounds
- Hospital patios

Source: City of San Bernardino General Plan Noise Element, Table N-3.



² Outdoor environment limited to:

³ Noise level requirement with closed windows, mechanical ventilation or other means of natural ventilation shall be provided as per Chapter 12, Section 1205 of the Uniform Building Code.

⁴ Exterior noise levels should be such that interior noise levels will not exceed 45 dBA CNEL.

3.3 Construction Noise Standards

To control noise impacts associated with the construction of the proposed Project, the City of San Bernardino Municipal Code has established limits to the hours of operation. Section 8.54.070 the City of San Bernardino Municipal Code, provided in Appendix 3.1, indicates that construction activity is restricted to the hours within 7:00 a.m. and 8:00 p.m. However, neither the General Plan nor Municipal Code 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 (8 p. 179).

3.4 VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration (8).

To analyze vibration impacts originating from the operation and construction of the S. Arrowhead Avenue, vibration-generating activities are appropriately evaluated against standards established under a City's Municipal Code, if such standards exist. However, the City of San Bernardino does not identify specific vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (11 p. 38) Table 19, vibration damage are used in this noise study to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).



3.5 San Bernardino International Airport (SBIA)

The San Bernardino International Airport (SBIA) is located approximately 1.6 miles southeast of the Project site. This places the Project site within the SBIA Influence Area. The SBIA was initially built as Norton Air Force Base by the United States Air Force (USAF). Under the Base Realignment and Closure Act of 1990, Norton Air Force base was closed and disposed of by the USAF for a civilian aviation reuse in 1994 and transferred to the San Bernardino International Airport Authority (SBIAA). The SBIAA operates the facility as a public-use general aviation airport that accommodates aircraft ranging from piston-powered propeller aircraft to multi-engine jet aircraft including large air cargo aircraft (13). The latest aircraft noise contour boundaries for the SBIA were published by the SBIAA on July 2, 2019, as part of the Eastgate Air Cargo Facility Final Environmental Assessment (13). Figure 4-6 of the Final Environmental Assessment describes the Proposed Project CNEL Contours for the SBIA. The future SBIA noise level contours boundaries representing approximately 87,500 annual aircraft operations are shown on Exhibit 3-C.

As shown on Exhibit 3-C the Project land uses are generally located outside the 60 dBA CNEL noise level contours of the SBIA. Therefore, the Project land use is considered *normally acceptable* according to the City of San Bernardino *Community Noise and Land Use Compatibility* guidelines as shown on Exhibit 3-A.



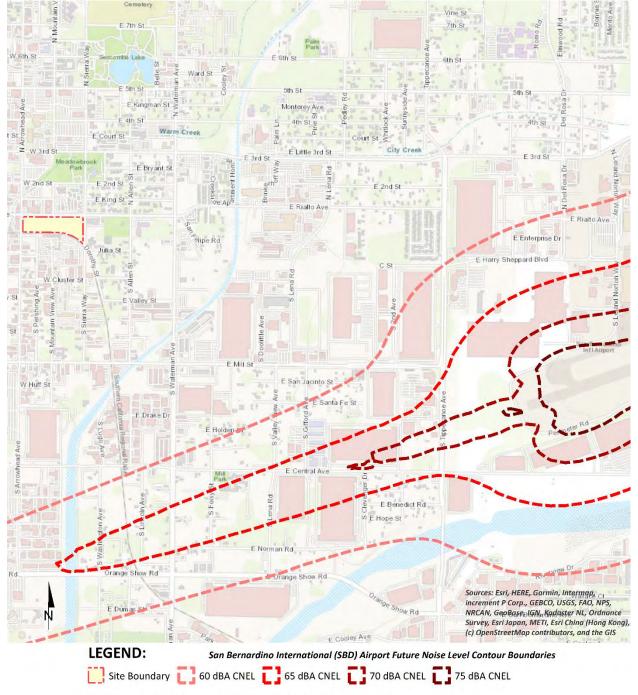


EXHIBIT 3-C: SAN BERNARDINO INTERNATIONAL AIRPORT (SBIA) NOISE CONTOURS

Source: Figure 4-6 of the Eastgate Air Cargo Facility Final Environmental Assessment published by the SBIAA on July 2, 2019.



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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. (1) 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?

4.1 Noise Level Increases (Threshold A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of 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) 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 were specifically developed to assess aircraft noise impacts, these 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 (Leq).

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, a readily perceptible 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. 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 baseline 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 (baseline) 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).

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.4, the vibration impacts originating from the construction of S. Arrowhead Avenue, vibration-generating activities are appropriately evaluated using the Caltrans vibration damage thresholds to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

4.3 CEQA Guidelines Not Further Analyzed (Threshold C)

The closest airport which would require additional noise analysis under CEQA Appendix G Guideline C is the SBIA. As previously described in Section 3.5, the Project is located outside the 60 dBA CNEL noise level contours of the SBIA. According to the City of San Bernardino *Community Noise and Land Use Compatibility* guidelines, the Project land use is considered *normally acceptable*. Therefore, the potential impacts under CEQA Appendix G Guideline C, are *less than significant* and are not further analyzed in this noise study.



4.4 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 that includes the allowable criteria used to identify potentially significant incremental noise level increases.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

A l	Receiving	C dist (-)	Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
	Noise- Sensitive ¹	If ambient is < 60 dBA Leq ¹	≥ 5 dBA L _{eq} Project increase		
		If ambient is 60 - 65 dBA Leq ¹	≥ 3 dBA L _{eq} Project increase		
Off-Site	Sensitive	If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA L _{eq} Project increase		
	Non- Noise-Sensitive ²	if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase		
	Noise- Sensitive ¹	Exterior Noise Level Limit ³	65 dBA L _{eq}		
Operational		If ambient is < 60 dBA Leq ¹	≥ 5 dBA L _{eq} Project increase		
Operational		If ambient is 60 - 65 dBA Leq ¹	≥ 3 dBA L _{eq} Project increase		
		If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA L _{eq} P	roject increase	
	Noise- Sensitive ¹	Restricted to the hours v	within 7:00 a.m. and 8	3:00 p.m. ⁴	
Construction		Noise Level Threshold ⁵	80 dBA L _{eq}	n/a	
	3011310140	Vibration Level Threshold ⁶	0.3 PPV (in/sec)		

¹ FICON, 1992.



² City of San Bernardino General Plan Noise Element, Figure N-1.

³ City of San Bernardino Development Code, Section 19.20.030.15(A).

 $^{^4}$ Section 8.54.070 of the City of San Bernardino Municipal Code (Appendix 3.1).

⁵ Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

⁶ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19.

[&]quot;Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at three locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Tuesday, January 25th, 2022. Appendix 5.1 includes study area photos.

5.1 Measurement Procedure and Criteria

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels. 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. (8)

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



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

5.3 Noise Measurement Results

The noise measurements presented below focus on the 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.

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

Location ¹	Description	Energy Average Noise Level (dBA L _{eq}) ²		
		Daytime	Nighttime	
L1	Located north of the Project site near Meadowbrook Park Family Apartments at 120 West Rialto Avenue.	67.4	63.2	
L2	Located southeast of the Project site near single-family residence at 177 South Dorothy Street.	58.9	55.0	
L3	Located southeast of the Project site near single-family residence at 162 South Pershing Avenue.	58.4	56.8	

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

Table 5-1 provides the equivalent noise levels used to describe the daytime, evening, 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 of the daytime and nighttime hours.



² Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.

[&]quot;Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.



EXHIBIT 5-A: NOISE 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 the State of California Land Use Compatibility Plan (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 11 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 San Bernardino 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 *S. Arrowhead Avenue Traffic Analysis*, prepared by Urban Crossroads, Inc. (20)

- Existing Conditions 2022 (E)
- Existing Conditions plus Project (E+P)
- Existing plus Ambient plus Project (EAP) (2023) Conditions
- Existing plus Ambient plus Cumulative (EAC) (2023) Conditions
- Existing plus Ambient plus Cumulative Plus Project (EAPC) (2023) Conditions
- Horizon Year (HY) (2040) Without Project
- Horizon Year (HYP) (2040) With Project

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.



TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Arrowhead Av.	n/o Rialto Av.	Major Arterial	Non-Sensitive	50'	25
2	Arrowhead Av.	s/o Rialto Av.	Major Arterial	Non-Sensitive	50'	25
3	Arrowhead Av.	s/o Dwy. 2	Major Arterial	Sensitive	50'	40
4	Sierra Wy.	n/o Rialto Av.	Secondary Arterial	Sensitive	44'	25
5	Sierra Wy.	s/o Rialto Av.	Secondary Arterial	Non-Sensitive	44'	40
6	Sierra Wy.	s/o Dwy. 6	Secondary Arterial	Sensitive	44'	40
7	Rialto Av.	w/o Arrowhead Av.	Secondary Arterial	Non-Sensitive	44'	35
8	Rialto Av.	w/o Mountain View Av.	Secondary Arterial	Non-Sensitive	44'	35
9	Rialto Av.	e/o Mountain View Av.	Secondary Arterial	Sensitive	44'	35
10	Rialto Av.	w/o Sierra Wy.	Secondary Arterial	Sensitive	44'	35
11	Rialto Av.	e/o Sierra Wy.	Secondary Arterial	Sensitive	44'	35

¹ City of San Bernardino General Plan Circulation Element.

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 *S. Arrowhead Avenue 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.

² Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

³ Distance to receiving land use is based upon the right-of-way distances.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

	Roadway		Average Daily Traffic Volumes ¹							
ID		Segment	Existing 2022		EA 2023		EAC 2023		HY 2040	
		Segment	Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Arrowhead Av.	n/o Rialto Av.	5,697	5,805	5,868	5,976	6,110	6,218	6,721	6,829
2	Arrowhead Av.	s/o Rialto Av.	5,893	6,066	6,070	6,243	6,316	6,489	7,374	7,547
3	Arrowhead Av.	s/o Dwy. 2	6,211	6,397	6,397	6,583	6,643	6,829	7,308	7,494
4	Sierra Wy.	n/o Rialto Av.	4,562	4,643	4,699	4,779	4,883	4,963	5,371	5,452
5	Sierra Wy.	s/o Rialto Av.	2,933	3,057	3,021	3,145	3,305	3,429	3,635	3,776
6	Sierra Wy.	s/o Dwy. 6	2,913	2,967	3,000	3,054	3,084	3,138	3,393	3,447
7	Rialto Av.	w/o Arrowhead Av.	8,630	8,711	8,889	8,970	9,121	9,202	10,033	10,114
8	Rialto Av.	w/o Mountain View Av.	9,153	9,353	9,428	9,628	9,660	9,860	10,626	10,826
9	Rialto Av.	e/o Mountain View Av.	8,946	9,113	9,214	9,381	9,446	9,613	10,391	10,558
10	Rialto Av.	w/o Sierra Wy.	10,254	10,378	10,562	10,686	10,794	10,918	11,873	12,014
11	Rialto Av.	e/o Sierra Wy.	7,317	7,398	7,536	7,617	7,768	7,849	8,545	8,626

¹ S. Arrowhead Warehouse Traffic Analysis, Urban Crossroads, Inc.



TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vahiala Tura		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%

¹ Typical vehicle mix. Values rounded to the nearest one-hundredth.

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification		Total		
Classification	Autos	Medium Trucks	Heavy Trucks	Total
All Segments	92.79%	5.89%	1.33%	100.00%

Based on an existing vehicle count taken at Arrowhead Avenue and Rialto Avenue (S. Arrowhead Warehouse 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 WITH PROJECT VEHICLE MIX

				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Arrowhead Av.	n/o Rialto Av.	87.10%	1.90%	11.00%	100.00%
2	Arrowhead Av.	s/o Rialto Av.	85.71%	2.14%	12.15%	100.00%
3	Arrowhead Av.	s/o Dwy. 2	85.17%	2.23%	12.60%	100.00%
4	Sierra Wy.	n/o Rialto Av.	87.08%	1.90%	11.02%	100.00%
5	Sierra Wy.	s/o Rialto Av.	86.85%	1.95%	11.20%	100.00%
6	Sierra Wy.	s/o Dwy. 6	87.09%	1.90%	11.01%	100.00%
7	Rialto Av.	w/o Arrowhead Av.	86.98%	1.92%	11.11%	100.00%
8	Rialto Av.	w/o Mountain View Av.	86.15%	2.06%	11.79%	100.00%
9	Rialto Av.	e/o Mountain View Av.	86.44%	2.01%	11.55%	100.00%
10	Rialto Av.	w/o Sierra Wy.	86.85%	1.94%	11.21%	100.00%
11	Rialto Av.	e/o Sierra Wy.	87.00%	1.91%	11.09%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.



[&]quot;Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

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

				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Arrowhead Av.	n/o Rialto Av.	87.09%	1.90%	11.01%	100.00%
2	Arrowhead Av.	s/o Rialto Av.	85.74%	2.13%	12.13%	100.00%
3	Arrowhead Av.	s/o Dwy. 2	85.22%	2.22%	12.56%	100.00%
4	Sierra Wy.	n/o Rialto Av.	87.08%	1.90%	11.02%	100.00%
5	Sierra Wy.	s/o Rialto Av.	86.85%	1.95%	11.20%	100.00%
6	Sierra Wy.	s/o Dwy. 6	87.09%	1.90%	11.01%	100.00%
7	Rialto Av.	w/o Arrowhead Av.	86.97%	1.92%	11.11%	100.00%
8	Rialto Av.	w/o Mountain View Av.	86.17%	2.06%	11.77%	100.00%
9	Rialto Av.	e/o Mountain View Av.	86.45%	2.01%	11.54%	100.00%
10	Rialto Av.	w/o Sierra Wy.	86.85%	1.94%	11.21%	100.00%
11	Rialto Av.	e/o Sierra Wy.	86.99%	1.92%	11.09%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.

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

				With P	roject¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Arrowhead Av.	n/o Rialto Av.	87.08%	1.90%	11.02%	100.00%
2	Arrowhead Av.	s/o Rialto Av.	85.78%	2.13%	12.09%	100.00%
3	Arrowhead Av.	s/o Dwy. 2	85.28%	2.21%	12.51%	100.00%
4	Sierra Wy.	n/o Rialto Av.	87.07%	1.90%	11.03%	100.00%
5	Sierra Wy.	s/o Rialto Av.	86.85%	1.95%	11.20%	100.00%
6	Sierra Wy.	s/o Dwy. 6	87.08%	1.90%	11.02%	100.00%
7	Rialto Av.	w/o Arrowhead Av.	86.97%	1.92%	11.11%	100.00%
8	Rialto Av.	w/o Mountain View Av.	86.18%	2.06%	11.76%	100.00%
9	Rialto Av.	e/o Mountain View Av.	86.46%	2.01%	11.53%	100.00%
10	Rialto Av.	w/o Sierra Wy.	86.85%	1.94%	11.21%	100.00%
11	Rialto Av.	e/o Sierra Wy.	86.99%	1.92%	11.09%	100.00%

 $^{^{\}rm 1}\,\text{Total}$ of vehicle mix percentage values rounded to the nearest one-hundredth.



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

				With P	roject ¹	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Arrowhead Av.	n/o Rialto Av.	87.06%	1.91%	11.03%	100.00%
2	Arrowhead Av.	s/o Rialto Av.	85.93%	2.10%	11.97%	100.00%
3	Arrowhead Av.	s/o Dwy. 2	85.42%	2.19%	12.39%	100.00%
4	Sierra Wy.	n/o Rialto Av.	87.05%	1.91%	11.04%	100.00%
5	Sierra Wy.	s/o Rialto Av.	86.47%	2.01%	11.52%	100.00%
6	Sierra Wy.	s/o Dwy. 6	87.06%	1.91%	11.04%	100.00%
7	Rialto Av.	w/o Arrowhead Av.	86.96%	1.92%	11.12%	100.00%
8	Rialto Av.	w/o Mountain View Av.	86.24%	2.05%	11.71%	100.00%
9	Rialto Av.	e/o Mountain View Av.	86.50%	2.00%	11.50%	100.00%
10	Rialto Av.	w/o Sierra Wy.	86.73%	1.96%	11.31%	100.00%
11	Rialto Av.	e/o Sierra Wy.	86.98%	1.92%	11.11%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.



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 *S. Arrowhead Avenue Traffic Analysis* prepared by Urbana Crossroads, Inc. (20) 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. Appendix 7.1 includes the traffic noise level contours worksheets for each traffic condition.

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

i	Road		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	69.7	RW	104	223	
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	69.9	RW	106	228	
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	73.4	84	181	390	
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.1	RW	71	152	
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.4	RW	87	187	
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.4	RW	86	186	
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.2	72	154	332	
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.4	74	160	346	
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.3	73	158	341	
10	Rialto Av.	w/o Sierra Wy.	Sensitive	73.9	80	173	373	
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.5	64	138	298	

¹ 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 the receiving adjacent land use.

 $[&]quot;RW" = Location \ of \ the \ respective \ noise \ contour \ falls \ within \ the \ right-of-way \ of \ the \ road.$

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

	Road		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	69.8	RW	104	223	
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.3	53	114	245	
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	74.0	92	198	426	
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.1	RW	71	152	
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.6	RW	89	192	
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.4	RW	87	186	
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.2	72	154	333	
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.7	78	168	362	
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.5	76	163	351	
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.0	81	174	376	
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.5	64	138	298	

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

TABLE 7-3: EA (2023) WITHOUT PROJECT CONTOURS

į	Road		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	69.9	RW	106	228	
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.0	50	108	233	
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	73.5	86	184	397	
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.2	RW	72	155	
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.6	RW	89	191	
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.5	RW	88	190	
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.3	73	157	339	
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.6	76	164	353	
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.5	75	161	347	
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.1	82	177	380	
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.6	65	141	304	

¹ 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 the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

 $^{^{2}}$ The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-4: EA (2023) WITH PROJECT CONTOURS

ın	Road		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	69.9	RW	106	228	
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.5	54	116	249	
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	74.1	93	201	433	
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.2	RW	72	155	
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.7	RW	91	196	
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.5	RW	88	190	
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.3	73	157	339	
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.8	79	171	368	
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.6	77	166	358	
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.1	83	178	383	
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.6	65	141	304	

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

TABLE 7-5: EAC (2023) WITHOUT PROJECT CONTOURS

i	Road		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
ID		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	70.0	50	109	234
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.2	51	111	239
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	73.7	88	189	408
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.4	RW	74	159
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.9	44	94	203
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.6	RW	90	193
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.4	74	160	345
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.7	77	166	358
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.6	76	164	353
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.1	83	179	386
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.7	67	144	310

¹ 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 the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

 $^{^{2}}$ The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

 $[&]quot;RW" = Location \ of \ the \ respective \ noise \ contour \ falls \ within \ the \ right-of-way \ of \ the \ road.$

TABLE 7-6: EAC (2023) WITH PROJECT CONTOURS

	Dood	Commont	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	70.1	50	109	234	
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.6	55	118	255	
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	74.2	95	206	443	
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.4	RW	74	159	
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	70.1	45	96	208	
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.7	RW	90	194	
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.4	74	160	345	
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.9	81	174	374	
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.8	78	169	363	
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.2	84	180	389	
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.7	67	144	310	

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

TABLE 7-7: HY (2040) WITHOUT PROJECT CONTOURS

i	ID Road	Comment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	70.5	54	116	249	
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.9	57	123	265	
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	74.1	94	202	434	
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.8	RW	79	170	
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	70.4	46	100	216	
6	Sierra Wy.	s/o Dwy. 6	Sensitive	70.1	44	96	206	
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.8	79	171	368	
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	74.1	82	177	382	
9	Rialto Av.	e/o Mountain View Av.	Sensitive	74.0	81	175	376	
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.6	89	191	411	
11	Rialto Av.	e/o Sierra Wy.	Sensitive	73.1	71	153	330	

¹ 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 the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

 $^{^{2}}$ The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

 $[&]quot;RW" = Location \ of \ the \ respective \ noise \ contour \ falls \ within \ the \ right-of-way \ of \ the \ road.$

TABLE 7-8: HY (2040) WITH PROJECT CONTOURS

15	Bood	Comment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	70.5	54	116	249	
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	71.2	60	130	280	
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	74.6	101	218	469	
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.8	RW	79	170	
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	70.6	48	104	225	
6	Sierra Wy.	s/o Dwy. 6	Sensitive	70.1	44	96	206	
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.8	79	171	368	
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	74.3	86	184	397	
9	Rialto Av.	e/o Mountain View Av.	Sensitive	74.1	83	179	386	
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.6	90	193	417	
11	Rialto Av.	e/o Sierra Wy.	Sensitive	73.1	71	153	330	

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

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 68.1 to 73.9 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 74.0 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 0.6 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 (2023) TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Existing plus Ambient (2023) without Project conditions CNEL noise levels. The EA (2023) without Project exterior noise levels range from 68.2 to 74.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the EA (2023) with Project conditions will range from 68.2 to 74.1 dBA CNEL. Table 7-10 shows that the Project off-site traffic noise level increases range from 0.0 to 0.6 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses



² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

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 (2023) TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the Existing plus Ambient plus Cumulative (2023) without Project conditions CNEL noise levels. The EAC (2023) without Project exterior noise levels range from 68.4 to 74.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the EAC (2023) with Project conditions will range from 68.4 to 74.2 dBA CNEL. Table 7-11 shows that the Project off-site traffic noise level increases range from 0.0 to 0.5 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 (2040) TRAFFIC NOISE LEVEL INCREASES

Table 7-7 presents the Horizon Year (2040) without Project conditions CNEL noise levels. The HY (2040) without Project exterior noise levels range from 68.8 to 74.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-8 shows that the HY (2040) with Project conditions will range from 68.8 to 74.6 dBA CNEL. Table 7-12 shows that the Project off-site traffic noise level increases range from 0.0 to 0.5 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.



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

ID	ID Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	69.7	69.8	0.1	1.5	No
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	69.9	70.3	0.4	1.5	No
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	73.4	74.0	0.6	1.5	No
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.1	68.1	0.0	1.5	No
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.4	69.6	0.2	1.5	No
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.4	69.4	0.0	1.5	No
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.2	73.2	0.0	1.5	No
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.4	73.7	0.3	1.5	No
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.3	73.5	0.2	1.5	No
10	Rialto Av.	w/o Sierra Wy.	Sensitive	73.9	74.0	0.1	1.5	No
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.5	72.5	0.0	1.5	No

¹ 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 receiving land use.

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

TABLE 7-10: EA (2023) WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving		EL at Receind Use (dE	_	Incremental Noise Level Increase Threshold ²	
			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	69.9	69.9	0.0	1.5	No
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.0	70.5	0.5	1.5	No
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	73.5	74.1	0.6	1.5	No
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.2	68.2	0.0	1.5	No
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.6	69.7	0.1	1.5	No
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.5	69.5	0.0	1.5	No
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.3	73.3	0.0	1.5	No
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.6	73.8	0.2	1.5	No
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.5	73.6	0.1	1.5	No
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.1	74.1	0.0	1.5	No
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.6	72.6	0.0	1.5	No

¹ 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 receiving land use.

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

TABLE 7-11: EAC (2023) WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	70.0	70.1	0.1	1.5	No
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.2	70.6	0.4	1.5	No
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	73.7	74.2	0.5	1.5	No
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.4	68.4	0.0	1.5	No
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	69.9	70.1	0.2	1.5	No
6	Sierra Wy.	s/o Dwy. 6	Sensitive	69.6	69.7	0.1	1.5	No
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.4	73.4	0.0	1.5	No
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	73.7	73.9	0.2	1.5	No
9	Rialto Av.	e/o Mountain View Av.	Sensitive	73.6	73.8	0.2	1.5	No
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.1	74.2	0.1	1.5	No
11	Rialto Av.	e/o Sierra Wy.	Sensitive	72.7	72.7	0.0	1.5	No

¹Based 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 receiving land use.

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

TABLE 7-12: HY (2040) WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Arrowhead Av.	n/o Rialto Av.	Non-Sensitive	70.5	70.5	0.0	1.5	No
2	Arrowhead Av.	s/o Rialto Av.	Non-Sensitive	70.9	71.2	0.3	1.5	No
3	Arrowhead Av.	s/o Dwy. 2	Sensitive	74.1	74.6	0.5	1.5	No
4	Sierra Wy.	n/o Rialto Av.	Sensitive	68.8	68.8	0.0	1.5	No
5	Sierra Wy.	s/o Rialto Av.	Non-Sensitive	70.4	70.6	0.2	1.5	No
6	Sierra Wy.	s/o Dwy. 6	Sensitive	70.1	70.1	0.0	1.5	No
7	Rialto Av.	w/o Arrowhead Av.	Non-Sensitive	73.8	73.8	0.0	1.5	No
8	Rialto Av.	w/o Mountain View Av.	Non-Sensitive	74.1	74.3	0.2	1.5	No
9	Rialto Av.	e/o Mountain View Av.	Sensitive	74.0	74.1	0.1	1.5	No
10	Rialto Av.	w/o Sierra Wy.	Sensitive	74.6	74.6	0.0	1.5	No
11	Rialto Av.	e/o Sierra Wy.	Sensitive	73.1	73.1	0.0	1.5	No

¹Based 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 receiving land use.

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

8 RECEIVER LOCATIONS

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

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

- R1: Location R1 represents existing noise sensitive residence at 120 West Rialto Avenue, approximately 104 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 residence at 101 North Sierra Way, approximately 179 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, L1, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 177 South Dorothy Street, approximately 152 feet southeast 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 near this location, L2, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive residence at 162 South Pershing Avenue, approximately 195 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.



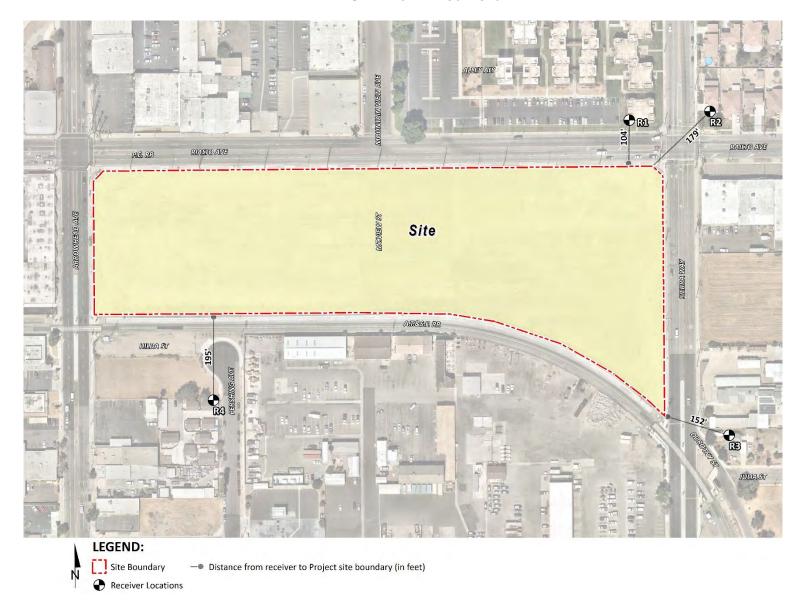


EXHIBIT 8-A: RECEIVER LOCATIONS



9 OPERATIONAL NOISE ANALYSIS

This section analyzes the potential stationary-source operational noise impacts at the nearby receiver locations, identified in Section 8, resulting from the operation of the proposed S. Arrowhead Avenue Project. Exhibit 9-A identifies the noise source locations 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 expected typical of daytime and nighttime activities at the Project site. To present the potential worst-case noise conditions, this analysis assumes the Project would be operational 24 hours per day, seven days per week. Consistent with similar warehouse and industrial uses, the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements.

9.2 REFERENCE NOISE LEVELS

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

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (15)



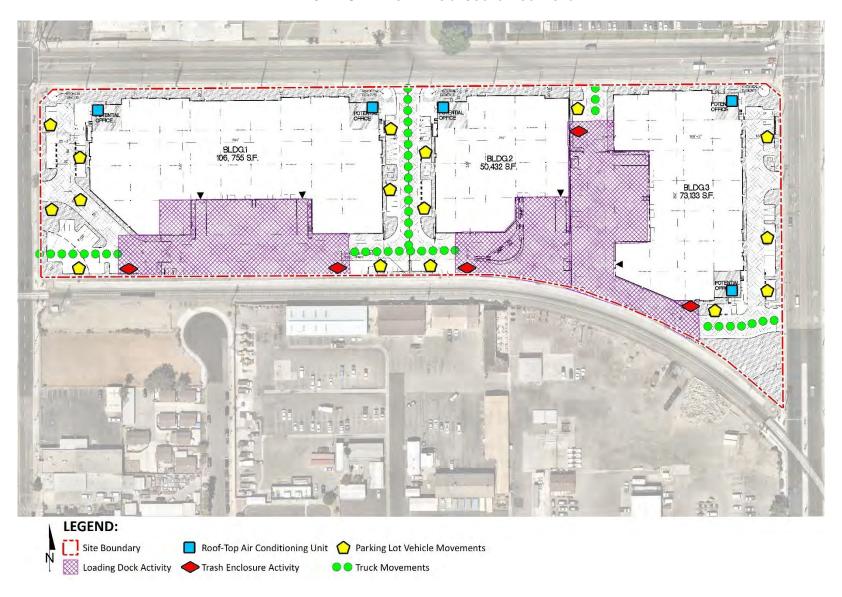


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source ¹	Noise Source	Min./ Hour ²		Reference Noise Level	Sound Power
Noise Source	Height (Feet)	Day	Night	(dBA L _{eq}) @ 50 Feet	Level (dBA)³
Loading Dock Activity	8'	60	60	62.8	103.4
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	10	10	57.3	89.0
Parking Lot Vehicle Movements	5'	60	60	56.1	87.8
Truck Movements	8'	60	60	59.8	93.2

¹ As measured by Urban Crossroads, Inc.

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical operational noise source levels associated with the Project. This includes truck idling, deliveries, backup alarms, unloading/loading, docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background forklift operations. At a uniform reference distance of 50 feet, Urban Crossroads collected a reference noise level of 62.8 dBA L_{eq}. The loading dock activity noise level measurement was taken over a fifteen-minute period and represents multiple noise sources taken from the center of activity. The reference noise level measurement includes employees unloading a docked truck container included the squeaking of the truck's shocks when weight was removed from the truck, employees playing music over a radio, as well as a forklift horn and backup alarm. In addition, during the noise level measurement a truck entered the loading dock area and proceeded to reverse and dock in a nearby loading bay, adding truck engine, idling, air brakes noise, in addition to on-going idling of an already docked truck. Loading dock activity is estimated during all the daytime, evening, and nighttime hours.

9.2.3 ROOF-TOP AIR CONDITIONING UNITS

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

² Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site.

[&]quot;Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

³ Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

9.2.5 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure activity, Urban Crossroads collected a reference noise level measurement at an existing trash enclosure containing two dumpster bins. The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, and trash dropping into the metal dumpster. The reference noise levels describe trash enclosure noise activities when trash is dropped into an empty metal dumpster, as would occur at the Project Site. The measured reference noise level at the uniform 50-foot reference distance is 57.3 dBA L_{eq} for the trash enclosure activity. The reference noise level describes the expected noise source activities associated with the trash enclosures for the Project's proposed building. Typical trash enclosure activities are estimated to occur for 10 minutes per hour.

9.2.6 PARKING LOT VEHICLE MOVEMENTS

To describe the on-site parking lot activity, a long-term 29-hour reference noise level measurement was collected in the center of activity within the staff parking lot of a warehouse distribution center. At 50 feet from the center of activity, the parking lot produced a reference noise level of 56.1 dBA L_{eq}. Parking activities are expected to take place during the full hour (60 minutes) throughout the daytime and evening hours. The parking lot noise levels are mainly due cars pulling in and out of parking spaces in combination with car doors opening and closing.

9.2.6 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represents multiple heavy trucks entering and exiting the outdoor loading dock area producing a reference noise level of 59.8 dBA L_{eq} at 50 feet. The noise sources included at this measurement location account for trucks entering and existing the Project driveways and maneuvering in and out of the outdoor loading dock activity area.

9.3 CADNAA NOISE PREDICTION MODEL

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

Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level ($L_{\rm w}$) to describe individual noise sources. While sound pressure levels (e.g., $L_{\rm eq}$) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels ($L_{\rm w}$) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and

other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

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

9.4 Project Operational Noise Levels

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 43.5 to 54.7 dBA L_{eq}.

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Operationa	Operational Noise Levels by Receiver Location (dBA Leq)						
Noise Source-	R1	R2	R3	R4				
Loading Dock Activity	30.8	28.5	47.4	54.1				
Roof-Top Air Conditioning Units	40.9	38.5	36.1	30.0				
Trash Enclosure Activity	16.1	11.3	29.0	34.1				
Parking Lot Vehicle Movements	41.5	39.0	39.6	39.9				
Truck Movements	41.4	38.1	43.0	44.0				
Total (All Noise Sources)	46.2	43.5	49.5	54.7				

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

Tables 9-3 shows the Project operational noise levels during the nighttime hours of $10:00 \, \text{p.m.}$ to $7:00 \, \text{a.m.}$ The nighttime hourly noise levels at the off-site receiver locations are expected to range from $42.8 \, \text{to} \, 54.7 \, \text{dBA L}_{\text{eq.}}$. The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1 and Appendix 9.1.

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Naisa Cauras 1	Operation	Operational Noise Levels by Receiver Location (dBA Leq)						
Noise Source ¹	R1	R2	R3	R4				
Loading Dock Activity	30.8	28.5	47.4	54.1				
Roof-Top Air Conditioning Units	38.5	36.1	33.7	27.6				
Trash Enclosure Activity	15.1	10.3	28.0	33.1				
Parking Lot Vehicle Movements	41.5	39.0	39.6	39.9				
Truck Movements	41.4	38.1	43.0	44.0				
Total (All Noise Sources)	45.6	42.8	49.4	54.7				

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

9.5 Project Operational Noise Level Compliance

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of San Bernardino exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with S. Arrowhead Avenue Project will satisfy the City of San Bernardino exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location ¹	Project Operational Noise Levels (dBA Leq) ²		Noise Level	Noise Level Standards Exceeded? ⁴		
Location	Daytime	ne Nighttime Standards (dBA Leq) ³		Daytime	Nighttime	
R1	46.2	45.6	65	No	No	
R2	43.5	42.8	65	No	No	
R3	49.5	49.4	65	No	No	
R4	54.7	54.7	65	No	No	

¹ See Exhibit 8-A for the receiver locations.

9.5 Project Operational Noise Level Increases

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

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

² Proposed Project operational noise levels as shown on Tables 9-2 and 9-3.

³ Exterior noise level standards, as shown on Table 4-1.

⁴ Do the estimated Project operational noise source activities exceed the noise level standards?

[&]quot;Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-5 and 9-6, respectively. As indicated on Tables 9-5, the Project will generate a daytime operational noise level increases ranging from 0.0 to 1.5 dBA L_{eq} at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increase ranging from 0.0 to 2.1 dBA L_{eq} at the nearest receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented in Table 4-1, the increases at the sensitive receiver locations will be *less than significant*.

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	46.2	L1	67.4	67.4	0.0	1.5	No
R2	43.5	L1	67.4	67.4	0.0	1.5	No
R3	49.5	L2	58.9	59.4	0.5	5.0	No
R4	54.7	L3	58.4	59.9	1.5	5.0	No

¹ See Exhibit 8-A for the receiver locations.

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	45.6	L1	63.2	63.3	0.1	5.0	No
R2	42.8	L1	63.2	63.2	0.0	5.0	No
R3	49.4	L2	55.0	56.1	1.1	5.0	No
R4	54.7	L3	56.8	58.9	2.1	5.0	No

¹ See Exhibit 8-A for the receiver locations.



² Total Project daytime operational noise levels as shown on Table 9-2.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed daytime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance increase criteria as shown on Table 4-1.

² Total Project nighttime operational noise levels as shown on Table 9-3.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed nighttime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance increase criteria as shown on Table 4-1.

10 CONSTRUCTION ANALYSIS

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 activity boundaries in relation to the nearest sensitive receiver locations previously described in Section 10.

8.1 Construction Noise Levels

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

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (20) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.



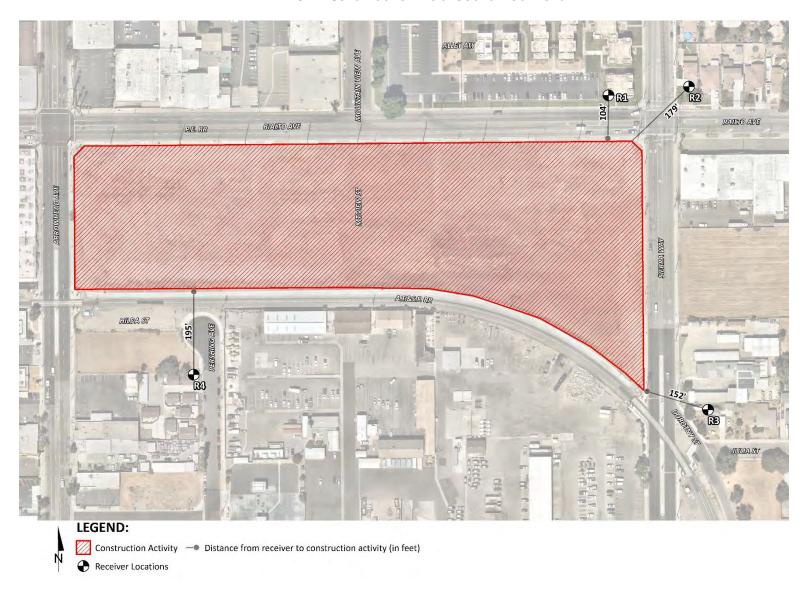


EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS



10.3 Construction Noise Analysis

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming they operate at the same time. As shown on Table 10-2, the construction noise levels are expected to range from 60.0 to 70.0 dBA Leq at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

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

¹ FHWA Roadway Construction Noise Model (RCNM).



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

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

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location ¹	Construction Noise Levels (dBA L _{eq})							
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²		
R1	67.0	70.0	68.0	70.0	64.0	70.0		
R2	63.5	66.5	64.5	66.5	60.5	66.5		
R3	64.1	67.1	65.1	67.1	61.1	67.1		
R4	63.0	66.0	64.0	66.0	60.0	66.0		

¹ Noise receiver locations are shown on Exhibit 10-A.

8.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

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

TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

	Construction Noise Levels (dBA L _{eq})					
Receiver Location ¹	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴			
R1	70.0	80	No			
R2	66.5	80	No			
R3	67.1	80	No			
R4	66.0	80	No			

¹ Noise receiver locations are shown on Exhibit 10-A.



² Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

² Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 10-2.

³ Construction noise level thresholds as shown on Table 4-1.

⁴ Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.5 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 pad area as shown on Exhibit 10-B. Since the nighttime concrete pours will take place outside the permitted City of San Bernardino Municipal Code, Section 8.54.070 the City of San Bernardino Municipal Code, indicates that construction activity is restricted to the hours within 7:00 a.m. and 8:00 p.m. The Project Applicant will be required to obtain authorization for nighttime work from the City of San Bernardino. Any nighttime construction noise activities shall satisfy the noise limits outlined in Table 4-1.

10.5.1 NIGHTTIME CONCRETE POUR REFERENCE NOISE LEVEL MEASUREMENTS

To estimate the noise levels due to nighttime concrete pour activities, sample reference noise level measurements were taken during a nighttime concrete pour at a construction site. Urban Crossroads, Inc. collected short-term nighttime concrete pour reference noise level measurements during the noise-sensitive nighttime hours between 1:00 a.m. to 2:00 a.m. at 27334 San Bernardino Avenue in the City of Redlands. The reference noise levels describe the expected concrete pour noise sources that may include concrete mixer truck movements and pouring activities, concrete paving equipment, rear mounted concrete mixer truck backup alarms, engine idling, air brakes, generators, and workers communicating/whistling.

To describe the nighttime concrete pour noise levels associated with the construction of the S. Arrowhead Avenue, this analysis relies on reference sound power level of 100.3 dBA L_w . While the Project noise levels will depend on the actual duration of activities and specific equipment fleet in use at the time of construction, the reference sound power level of 100.3 dBA L_w is used to describe the expected Project nighttime concrete pour noise activities.



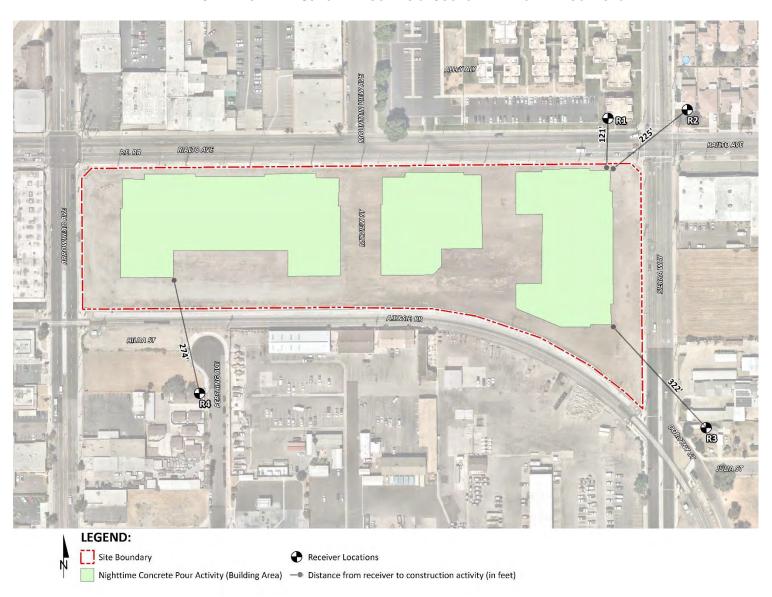


EXHIBIT 10-B: NIGHTTIME CONCRETE POUR NOISE SOURCE AND RECEIVER LOCATIONS



10.5.2 NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

As shown on Table 10-4, the noise levels associated with the nighttime concrete pour activities are estimated to range from 42.8 to 54.7 dBA L_{eq} and will satisfy the City of San Bernardino stationary-source exterior hourly average L_{eq} 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 10.2 includes the CadnaA nighttime concrete pour noise model inputs.

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

D in	Construction Noise Levels (dBA L _{eq})					
Receiver Location ¹	Paving Construction ²	Nighttime Threshold ³	Threshold Exceeded? ⁴			
R1	45.6	65	No			
R2	42.8	65	No			
R3	49.4	65	No			
R4	54.7	65	No			

¹ Noise receiver locations are shown on Exhibit 8-B.

10.6 Construction Vibration Analysis

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-5. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential for human response (annoyance) and building damage using the following vibration assessment methods defined by the FTA. To describe the vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual



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

³ Exterior nighttime noise level standards as shown on Table 4-1.

⁴ Do the estimated Project construction noise levels exceed the nighttime construction noise level threshold?

Table 10-6 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 104 to 195 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.010 to 0.025 in/sec PPV. Based on maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec), the typical Project construction vibration levels will fall below the building damage thresholds at all the noise sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

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

TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

	Distance to Const. Activity (Feet) ²	Typical Construction Vibration Levels PPV (in/sec) ³						Thresholds	Thresholds
Location ¹		Small bulldozer	Jackhammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level	PPV (in/sec) ⁴	Exceeded? ⁵
R1	104'	0.000	0.004	0.009	0.010	0.025	0.025	0.3	No
R2	179'	0.000	0.002	0.004	0.005	0.011	0.011	0.3	No
R3	152'	0.000	0.002	0.005	0.006	0.014	0.014	0.3	No
R4	195'	0.000	0.002	0.003	0.004	0.010	0.010	0.3	No

¹Receiver locations are shown on Exhibit 10-A.



² Distance from receiver building facade to Project construction boundary (Project site boundary).

³ Based on the Vibration Source Levels of Construction Equipment (Table 8-5).

⁴ Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19, p. 38.

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

[&]quot;PPV" = Peak Particle Velocity

11 REFERENCES

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- 9. **Office of Planning and Research.** *State of California General Plan Guidlines.* October 2019.
- 10. City of San Bernardino. General Plan, Noise Element. November 2005.
- 11. **California Department of Transportation.** *Transportation and Construction Vibration Guidance Manual.* April 2020.
- 12. **San Bernardino International Airport Authority.** *Final Environmental Assessment Eastgate Air Cargo Facility.* December 2019.
- 13. California Court of Appeal. *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.
- 14. **Federal Interagency Committee on Noise.** Federal Agency Review of Selected Airport Noise Analysis Issues. August 1992.
- 15. California Department of Transportation. Technical Noise Supplement. November 2009.
- 16. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
- 17. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.
- 18. California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.
- 19. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
- 20. **Urban Crossroads, Inc.** *S. Arrowhead Warehouse Traffic Analysis.* July, 2023.



21. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning. FHWA Roadway Construction Noise Model. January, 2006.



12 CERTIFICATIONS

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed S. Arrowhead Avenue 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 San Diego • March, 2018
Certified Acoustical Consultant – County of Orange • February, 2011
FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013



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APPENDIX 3.1:

CITY OF SAN BERNARDINO MUNICIPAL CODE



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Chapter 8.54 NOISE CONTROL

Sections:

8.54.010	Purpose and Intent
8.54.020	Prohibited Acts
8.54.030	Issuance of Written Notice and Impoundment
8.54.040	Cost Recovery for Second Response
8.54.050	Controlled Hours of Operation
8.54.060	Exemptions
8.54.070	Disturbances From Construction Activity
8.54.080	Violation - Penalty
8.54.090	Severability

8.54.010 Purpose and Intent

- A. It is the purpose and intent of these regulations to establish community-wide noise standards. It is further the purpose of these regulations to recognize that the existence of excessive noise within the City is a condition which 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 interest and necessity of the provisions and prohibitions hereinafter contained and enacted is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions hereinafter contained and enacted are in pursuance of, and for thepurpose 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. MC-1246, 5-23-07; Ord. 1925, 11-06-51)



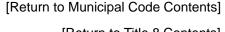


8.54.020 Prohibited Acts

It shall be unlawful for any person to engage in the following activities:

- Sounding any horn or signal device on any automobile, motorcycle, bus, or other Α. motor vehicle in any other manner or circumstances or for any other purpose than required or permitted by the California Vehicle Code, or other laws, for an unnecessary or unreasonable period of time;
- B. 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.
- 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.
- D. Using, operating, or permitting to be played, used or operated any radio receiving set, musical instrument, phonograph, or other sound amplification or production equipment for producing or reproducing sound in such a manner as to disturb the peace, guiet, or comfort of neighboring persons, or at any time with louder volume than is necessary for the convenient hearing of the person or persons who are in the room, vehicle, or other enclosure in which such machine or device is operated, and who are voluntary listeners thereto and that is:
 - 1. Plainly audible across property boundaries;
 - 2. Plainly audible through partitions common to two residences within a building;
 - 3. Plainly audible at a distance of 50 feet in any direction from the source of the music or sound between the hours of 8:00 a.m. and 10:00 p.m.; or
 - 4. Plainly audible at a distance of 25 feet in any direction from the source of the music or sound between the hours of 10:00 p.m. and 8:00 a.m.
- E. 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.





- F. Yelling, shouting, whistling, or singing in a loud and boisterous manner on the public streets so as to disturb the quiet, comfort, or repose of persons in any office, dwelling, hotel, or other type of residence, or neighborhood.
- G. The keeping of any animal, fowl, or bird which by causing frequent or long continued noise disturbs the comfort, quiet, or repose of any person or neighborhood.
- H. The unnecessary or excessive blowing of whistles, sounding of horns, ringing of bells, or use of signaling devices by operators of trains, motor trucks, and other transportation equipment.
- I. The creation of loud and excessive noise in connection with the loading or unloading of motor trucks and other vehicles.
- J. The shouting and crying of peddlers, hawkers, and vendors which disturbs the peace and quiet of any considerable number of persons or neighborhood.
- K. The doing of automobile, automotive body or fender repair work, or other work on metal objects and metal parts in a residential district so as to cause loud and excessive noise which disturbs the peace, quiet, and repose of any person occupying adjoining or closely situated property or neighborhood.
- L. The operation or use between the hours of 10:00 p.m. and 8:00 a.m. of any pile driver, steam shovel, pneumatic hammers, derrick, steam or electric hoist, power driven saw, or any other tool or apparatus, the use of which is attended by loud and excessive noise, except with the approval of the City.
- M. 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, provided conspicuous signs are displayed in such streets indicating the presence of a school, institution of learning, church, court, or hospital.
- N. 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:
 - 1. The level of noise:



-

- 2. The level of background noise;
- 3. The proximity of the noise to sleeping facilities;
- 4. The nature and zoning of the areas within which the noise emanates;
- 5. The density of the inhabitation of the area within which the noise emanates;
- 6. The time of day or night the noise occurs;
- 7. The duration of the noise;
- 8. Whether the noise is recurrent, intermittent, or constant; and
- 9. Whether the noise is produced by a commercial or noncommercial activity.

(Ord. MC-1246, 5-23-07; Ord. 2102, 4-03-56; Ord. 1925, 11-06-51)

8.54.030 Issuance of Written Notice and Impoundment

- A. Any officer who encounters a violation of this section may issue a written notice to the Responsible Person demanding immediate abatement of the violation. The written notice shall inform the recipient that a second violation of the same provision within a seventy two (72) hour period may result in the issuance of a criminal citation, the imposition of criminal and civil penalties, and confiscation and impoundment, as evidence, of the components that are amplifying or transmitting the prohibited noise.
 - 1. Responsible Person means (a) any person who owns, leases, or is lawfully in charge of the property or motor vehicle where the noise violation takes place, or (b) 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.
- B. Any officer who encounters a second violation of this chapter within a seventy two (72) hour period following the issuance of a written notice is empowered to confiscate and impound, as evidence, any or all of the components amplifying or transmitting the sound. The immediate confiscation of a motor vehicle to which a component is attached may be made if the same may not be removed without causing harm to the vehicle or component.



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C. Any person claiming legal ownership of the items confiscated and impounded under this chapter may request the return of the item by filing a written request with the police department within seven (7) calendar days of the confiscation. Such requests shall be processed in accordance with the procedures adopted by the department.

(Ord. MC-1246, 5-23-07; Ord. MC-649, 1-04-89; Ord. 1925, 11-06-51)

8.54.040 Cost Recovery for Second Response

- A. Whenever any officer issues a written notice 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 (72) hours of the issuance of the written warning.
- B. The bill for the response charge shall be served upon the Responsible Person within thirty (30) 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.
- C. The response charge shall be deemed to be a civil debt to the City.

(Ord. MC-1246, 5-23-07; Ord. MC-460, 5-15-85; Ord. 1925, 11-06-51)

8.54.050 Controlled Hours of Operation

It shall be unlawful for any person to engage in the following activities other than between the hours of 8:00 a.m. and 8:00 p.m. in residential zones and other than between the hours of 7:00 a.m. and 8:00 p.m. in all other 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 (1,000) 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.

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- 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 electrically operated compressor, fan, and other similar devices.
- G. Operate or permit the use of any motor vehicle with a gross vehicle weight rating in excess of ten thousand (10,000) 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 (15) minutes in any hour while the vehicle is stationary and on a public right-of-way or public space except when movement of said vehicle is restricted by other traffic.
- H. 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.

(Ord. MC-1246, 5-23-07)

8.54.060 Exemptions

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

- A. The use of horns, sirens, or other signaling or warning devices by persons vested with legal authority to use the same, and in pursuit of their lawful duties, such as on ambulances, fire, police, or other governmental or official equipment.
- B. Such noises as are an accompaniment and effect of a lawful business, commercial or industrial enterprise carried on in an area zoned for that purpose, except where there is evidence that such noise is a nuisance and that such a nuisance is a result of the employment of unnecessary and injurious methods of operation.
- C. Activities conducted on the grounds of any public or private school during regular hours of operation.
- D. Outdoor gatherings, public dances, shows, and sporting and entertainment events provided said events are authorized by the City.
- E. Activities conducted at public spaces during regular hours of operation.
- F. Any mechanical devices, apparatus, or equipment used, related to, or connected with emergency machinery, vehicle, or work.

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- G. Construction, repair, or excavation necessary for the immediate preservation of life or property.
- H. 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, but not limited to, trash collection and those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission.
- Ι. Construction, repair, or excavation work performed pursuant to a valid written agreement with the City, or any of its political subdivisions, which provides for noise mitigation measures.
- Any activity to the extent that regulation thereof has been preempted by State or Federal law.
- K. Sounds generated in connection with speech or communication protected by the United States Constitution or the California Constitution, except to the extent such sounds are subject to permissible time, place, and manner restrictions.

(Ord. MC-1246, 5-23-07)

8.54.070 Disturbances from Construction Activity

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 of 7:00 a.m. and 8:00 p.m.

(Ord. MC-1246, 5-23-07)

8.54.080 Violation - Penalty

Any person violating any of the provisions of this Chapter is guilty of an infraction or a misdemeanor, which upon conviction thereof is punishable in accordance with the provisions of Section 1.12.010 of this code.

(Ord. MC-1246, 5-23-07)

8.54.090 Severability

The provisions of this Chapter are severable, and, if any sentence, section or other part of this Chapter should be found to be invalid, such invalidity shall not affect the remaining provisions, and the remaining provisions shall continue in full force and effect.

(Ord. MC-1246, 5-23-07)

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[Rev. June 2022]

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APPENDIX 5.1:

STUDY AREA PHOTOS



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JN: 14660 Study Area Photos

L1_E 34, 6' 3.570000"117, 17' 7.960000"



L1_N 34, 6' 3.550000"117, 17' 7.960000"



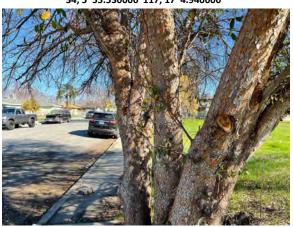
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L1_W 34, 6' 3.570000"117, 17' 7.990000"



L2_E 34, 5' 55.530000"117, 17' 4.940000"



L2_N 34, 5' 55.560000"117, 17' 4.890000"



JN: 14660 Study Area Photos

L2_S 34, 5' 55.530000"117, 17' 4.910000"



L2_W 34, 5' 55.550000"117, 17' 4.940000"



L3_E 34, 5' 58.510000"117, 17' 20.100000"



L3_N 34, 5' 58.550000"117, 17' 20.160000"



L3_S 34, 5' 58.570000"117, 17' 20.190000"



L3_W 34, 5' 58.540000"117, 17' 20.100000"



APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS



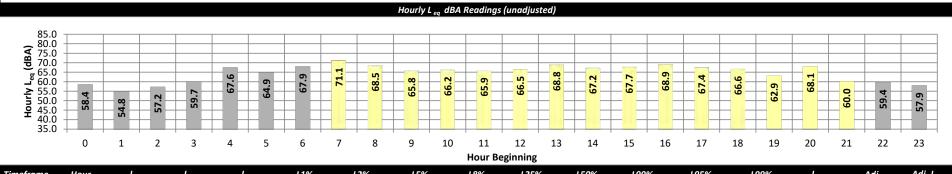
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24-Hour Noise Level Measurement Summary

Date: Tuesday, January 25, 2022 Location: L1- Located north of the Project site near Meadowbrook Park Meter: Piccolo II

Project: South Arrowhead Avenue Source: Family Apartments at 120 West Rialto Avenue. Analyst: A. Khan



Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	58.4	69.3	42.7	68.9	68.2	66.1	64.2	57.0	52.4	44.1	43.4	42.8	58.4	10.0	68.4
	1	54.8	65.5	42.8	65.1	64.8	62.6	60.1	52.2	47.9	43.9	43.3	42.9	54.8	10.0	64.8
	2	57.2	68.2	49.1	67.2	66.8	65.1	62.9	53.4	51.3	49.8	49.5	49.2	57.2	10.0	67.2
Night	3	59.7	71.4	50.7	71.0	70.4	67.2	64.4	56.8	53.7	51.5	51.2	50.8	59.7	10.0	69.7
	4	67.6	79.6	53.2	79.4	79.0	76.7	72.9	61.3	57.4	54.0	53.6	53.3	67.6	10.0	77.6
	5	64.9	75.0	56.2	74.5	73.5	71.6	69.8	64.2	60.1	57.1	56.7	56.3	64.9	10.0	74.9
	6	67.9	79.7	58.0	79.1	78.0	74.2	72.8	66.5	62.5	59.0	58.6	58.2	67.9	10.0	77.9
	7	71.1	83.1	58.3	82.8	81.7	78.8	76.6	68.0	63.9	59.5	59.0	58.5	71.1	0.0	71.1
	8	68.5	80.8	56.8	80.2	79.1	75.4	72.7	66.4	62.1	57.9	57.4	56.9	68.5	0.0	68.5
	9	65.8	76.9	52.2	76.5	75.8	73.1	70.1	64.7	60.2	54.1	53.2	52.4	65.8	0.0	65.8
	10	66.2	76.7	50.2	76.3	75.8	73.7	71.8	64.7	60.5	52.4	51.2	50.4	66.2	0.0	66.2
	11	65.9	77.6	51.0	77.1	76.3	73.1	70.7	64.2	59.9	53.5	52.4	51.3	65.9	0.0	65.9
	12	66.5	77.3	51.8	76.9	76.2	74.3	71.6	65.0	60.6	54.0	52.9	52.0	66.5	0.0	66.5
	13	68.8	80.5	52.3	80.1	79.3	77.1	73.8	66.3	61.1	54.7	53.6	52.5	68.8	0.0	68.8
Day	14	67.2	78.0	51.6	77.5	76.8	74.4	72.4	66.4	61.7	53.9	52.9	51.9	67.2	0.0	67.2
	15	67.7	79.7	53.6	79.4	78.5	74.8	72.0	65.9	61.0	55.2	54.4	53.8	67.7	0.0	67.7
	16	68.9	80.7	52.8	80.3	79.8	77.5	74.8	65.4	60.0	54.5	53.8	53.0	68.9	0.0	68.9
	17	67.4	78.7	53.5	78.3	77.5	75.2	72.9	65.5	60.6	55.1	54.5	53.8	67.4	0.0	67.4
	18	66.6	79.0	50.0	78.3	77.6	74.9	72.1	62.7	57.0	51.5	50.8	50.2	66.6	0.0	66.6
	19	62.9	74.3	47.4	74.0	73.5	70.6	68.1	60.6	55.3	49.2	48.4	47.6	62.9	5.0	67.9
	20	68.1	80.5	43.8	80.0	79.5	76.8	73.7	60.9	52.9	45.8	45.0	44.0	68.1	5.0	73.1
	21	60.0	71.8	42.6	71.3	70.5	67.7	65.2	57.8	51.4	44.3	43.4	42.8	60.0	5.0	65.0
Night	22	59.4	70.7	43.1	70.4	69.9	67.2	64.9	57.4	51.8	44.8	44.0	43.3	59.4	10.0	69.4
- i. 6	23	57.9 •	69.8	41.7	69.3	68.5	65.4	63.2	55.4	48.9	43.2	42.5	41.9	57.9	10.0	67.9
Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	60.0	71.8	42.6	71.3	70.5	67.7	65.2	57.8	51.4	44.3	43.4	42.8	24-Hour	Daytime	Nighttime
Enorgy	Max	71.1	83.1	58.3	82.8	81.7	78.8	76.6	68.0	63.9	59.5	59.0	58.5		(7am-10pm)	(10pm-7am)
Energy	Average	67.4	Aver		77.9	77.2	74.5	71.9	64.3	59.2	53.0	52.2	51.4	66.2	67 /	62.2
Night	Min	54.8 67.0	65.5 79.7	41.7	65.1	64.8	62.6	60.1	52.2	47.9	43.2	42.5	41.9 58.2	66.2	67.4	63.2
Fnergy	Max Average	67.9 63.2	79.7 Aver	58.0	79.4 71.7	79.0 71.0	76.7 68.5	72.9 66.1	66.5 58.2	62.5 54.0	59.0 49.7	58.6 49.2	48.7			
Lifergy	Average	03.2	Avei	age.	/1./	/1.0	6.80	00.1	58.2	54.0	49.7	49.2	48.7			

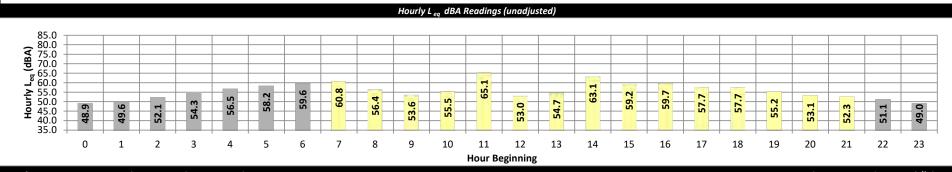


JN: 14660

24-Hour Noise Level Measurement Summary

Date: Tuesday, January 25, 2022 Location: L2-Located southeast of the Project site near singe-family Meter: Piccolo II

JN: 14660 Source: residence at 177 South Dorothy Street. Project: South Arrowhead Avenue Analyst: A. Khan



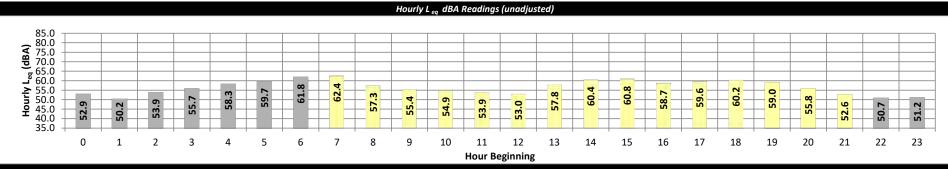
Timeframe	Hour	L_{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L eq	Adj.	Adj. L _{eq}
	0	48.9	55.9	45.3	55.5	54.9	53.2	52.1	49.0	47.5	45.8	45.6	45.4	48.9	10.0	58.9
	1	49.6	56.0	45.8	55.8	55.4	54.1	53.3	49.5	48.2	46.5	46.2	45.9	49.6	10.0	59.6
	2	52.1	56.8	49.3	56.5	56.2	55.4	54.8	52.5	51.2	49.9	49.7	49.4	52.1	10.0	62.1
Night	3	54.3	58.7	51.9	58.4	58.0	56.8	56.2	54.8	53.8	52.5	52.3	52.0	54.3	10.0	64.3
	4	56.5	62.9	53.2	62.6	62.4	61.2	59.6	56.7	55.1	53.8	53.6	53.3	56.5	10.0	66.5
	5	58.2	63.7	55.6	63.4	63.1	62.1	61.0	58.4	57.3	56.1	56.0	55.7	58.2	10.0	68.2
	6	59.6	65.5	57.0	65.0	64.5	63.4	62.2	59.7	58.6	57.5	57.4	57.1	59.6	10.0	69.6
	7	60.8	67.9	57.5	67.6	67.0	65.4	64.1	60.6	59.2	58.0	57.8	57.6	60.8	0.0	60.8
	8	56.4	62.8	52.8	62.5	62.1	60.8	59.6	56.6	55.0	53.5	53.2	53.0	56.4	0.0	56.4
	9	53.6	62.3	47.1	61.8	61.2	59.2	57.5	53.9	51.2	48.1	47.7	47.2	53.6	0.0	53.6
	10	55.5	66.0	44.9	65.7	65.2	62.6	60.7	53.9	49.6	45.8	45.4	45.0	55.5	0.0	55.5
	11	65.1	78.0	45.5	77.7	77.5	74.5	69.4	54.0	50.0	46.5	46.1	45.6	65.1	0.0	65.1
	12	53.0	61.9	44.7	61.5	60.9	59.1	57.6	53.4	49.7	45.9	45.4	44.9	53.0	0.0	53.0
	13	54.7	68.5	48.7	67.7	66.9	65.5	64.4	60.2	53.8	50.0	49.5	48.9	54.7	0.0	54.7
Day	14	63.1	76.2	52.2	75.3	74.0	71.6	68.0	57.3	55.3	53.0	52.6	52.3	63.1	0.0	63.1
	15	59.2	67.9	52.7	67.5	66.9	64.6	63.0	59.4	56.8	53.9	53.3	52.8	59.2	0.0	59.2
	16	59.7	71.0	50.8	70.6	69.4	66.3	64.3	58.3	55.1	51.9	51.4	51.0	59.7	0.0	59.7
	17	57.7	67.3	52.1	66.8	66.2	63.5	61.4	57.0	55.1	53.0	52.6	52.3	57.7	0.0	57.7
	18	57.7	67.5	51.4	67.1	66.4	63.3	61.4	57.2	54.9	52.4	52.0	51.5	57.7	0.0	57.7
	19	55.2	63.8	49.4	63.4	62.8	60.3	59.1	55.2	52.9	50.3	49.9	49.6	55.2	5.0	60.2
	20	53.1	63.5	45.6	62.9	62.1	59.7	57.6	52.1	49.0	46.5	46.2	45.8	53.1	5.0	58.1
	21	52.3	64.8	43.9	63.3	62.1	59.0	56.4	50.6	47.4	44.9	44.5	44.1	52.3	5.0	57.3
Night	22	51.1	59.0	42.9	58.8	58.5	57.6	56.8	51.3	46.7	43.7	43.4	43.1	51.1	10.0	61.1
-: (23	49.0	57.3	43.8	57.0	56.7	55.1	53.4	48.5	46.3	44.5	44.2	43.9	49.0	10.0	59.0
Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L eq (dBA)	All of Addison
Day	Min	52.3 65.1	61.9	43.9	61.5 77.7	60.9	59.0 74.5	56.4 69.4	50.6	47.4	44.9	44.5	44.1 57.6	24-Hour	Daytime	Nighttime
Energy	Max Average	58.9	78.0 Aver	57.5	66.8	77.5 66.0	63.7	61.6	60.6 56.0	59.2 53.0	58.0 50.2	57.8 49.8	49.4		(7am-10pm)	(10pm-7am)
Lifergy		48.9	55.9	42.9	55.5	54.9	53.2	52.1	48.5	46.3	43.7	49.8	49.4	57.8	E0 0	EE O
Night	Min Max	48.9 59.6	65.5	57.0	65.0	64.5	63.4	62.2	48.5 59.7	58.6	43.7 57.5	43.4 57.4	57.1	77.8	58.9	55.0
Fnergy	Average	55.0	Aver		59.2	58.9	57.7	56.6	53.4	51.6	50.0	49.8	49.5			
Littingy	71461486	55.0	AVCI	чъс.	J3.Z	30.3	37.7	50.0	55.4	51.0	50.0	43.0	+3.3			



24-Hour Noise Level Measurement Summary

Date: Tuesday, January 25, 2022 Location: L3- Located southeast of the Project site near singe-family Meter: Piccolo II Project: South Arrowhead Avenue

Source: residence at 162 South Pershing Avenue. Analyst: A. Khan



Timeframe	Hour	L eq	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L eq	Adj.	Adj. L _{eq}
	0	52.9	60.4	46.7	60.1	59.7	58.1	57.4	53.1	49.7	47.4	47.1	46.8	52.9	10.0	62.9
	1	50.2	55.3	46.9	54.9	54.5	53.6	53.0	50.9	49.3	47.6	47.3	47.0	50.2	10.0	60.2
	2	53.9	57.0	51.7	56.8	56.5	55.9	55.5	54.5	53.6	52.3	52.1	51.8	53.9	10.0	63.9
Night	3	55.7	60.4	52.9	60.1	59.6	58.7	58.2	56.2	55.0	53.6	53.3	53.0	55.7	10.0	65.7
	4	58.3	62.2	55.8	61.9	61.6	60.9	60.5	58.9	57.6	56.4	56.2	55.9	58.3	10.0	68.3
	5	59.7	64.9	56.8	64.5	64.2	63.3	62.5	59.9	58.8	57.4	57.2	56.9	59.7	10.0	69.7
	6	61.8	66.6	59.3	66.3	65.9	65.0	64.2	62.2	61.1	59.9	59.7	59.4	61.8	10.0	71.8
	7	62.4	71.3	58.3	70.9	70.2	68.3	67.2	61.5	60.2	58.9	58.7	58.4	62.4	0.0	62.4
	8	57.3	62.4	54.1	62.1	61.7	60.8	60.2	57.9	56.2	54.6	54.4	54.2	57.3	0.0	57.3
	9	55.4	62.4	50.4	62.0	61.4	60.0	58.9	55.9	53.8	51.4	51.0	50.6	55.4	0.0	55.4
	10	54.9	63.5	47.6	62.9	62.5	61.2	60.4	54.7	51.6	48.6	48.2	47.7	54.9	0.0	54.9
	11	53.9	61.9	47.8	61.3	60.6	59.0	57.4	54.3	52.1	49.1	48.6	48.0	53.9	0.0	53.9
	12	53.0	60.0	47.3	59.5	59.1	58.0	57.0	53.6	51.3	48.4	47.9	47.4	53.0	0.0	53.0
	13	57.8	67.2	52.1	66.7	65.9	64.7	62.8	59.3	56.2	53.3	52.8	52.3	57.8	0.0	57.8
Day	14	60.4	66.7	55.5	66.2	65.7	64.5	63.7	61.2	59.1	56.7	56.2	55.7	60.4	0.0	60.4
	15	60.8	66.9	55.6	66.5	66.1	64.9	64.2	61.6	59.6	57.0	56.5	55.8	60.8	0.0	60.8
	16	58.7	66.8	53.2	66.3	65.6	63.8	62.3	58.7	56.8	54.4	53.8	53.3	58.7	0.0	58.7
	17	59.6	66.8	54.6	66.3	65.7	64.2	63.6	59.9	58.2	55.7	55.3	54.8	59.6	0.0	59.6
	18	60.2	68.8	53.7	68.1	67.3	65.7	64.2	60.4	57.9	54.9	54.4	53.9	60.2	0.0	60.2
	19	59.0	66.0	52.6	65.5	64.9	63.8	63.1	59.7	57.2	53.9	53.4	52.7	59.0	5.0	64.0
	20	55.8	65.7	47.8	65.3	64.6	62.9	60.6	55.1	52.0	48.9	48.4	48.0	55.8	5.0	60.8
	21	52.6	62.1	46.3	61.4	59.9	57.8	56.8	52.8	50.0	47.2	46.8	46.4	52.6	5.0	57.6
Night	22	50.7	58.0	44.0	57.6	57.1	56.1	55.2	51.5	48.5	45.0	44.6	44.2	50.7	10.0	60.7
, in the second	23	51.2	57.4	47.7	56.8	56.3	55.0	54.1	51.7	50.1	48.4	48.2	47.8	51.2	10.0	61.2
Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	52.6	60.0	46.3	59.5	59.1	57.8	56.8	52.8	50.0	47.2	46.8	46.4	24-Hour	Daytime	Nighttime
	Max	62.4	71.3	58.3	70.9	70.2	68.3	67.2	61.6	60.2	58.9	58.7	58.4		(7am-10pm)	(10pm-7am)
Energy	Average	58.4	Aver		64.7	64.1	62.6	61.5	57.8	55.5	52.9	52.4	51.9	F7.0	FO 4	FC 0
Night	Min	50.2	55.3	44.0	54.9	54.5	53.6	53.0	50.9	48.5	45.0	44.6	44.2	57.9	58.4	56.8
Enorm	Max	61.8	66.6	59.3	66.3	65.9	65.0	64.2	62.2	61.1	59.9	59.7	59.4			
Energy	Average	56.8	Aver	age:	59.9	59.5	58.5	57.8	55.4	53.8	52.0	51.7	51.4			



JN: 14660

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APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS



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	FHWA-RI	D-77-108 HIGH	WAY N	OISE	PREDIC	TION M	ODEL (9/12/2	021)		
	io: E e: Arrowhed A nt: n/o Rialto A						Name: umber:		owhead W	arehou	ıse
SITE S	SPECIFIC IN	IPUT DATA				N	OISE N	ЛОDE	L INPUT	S	
Highway Data					Site Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	5,697 vehicle	es					Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2)	Axles)	: 15		
Peak H	our Volume:	577 vehicles	3		He	avy Truc	ks (3+)	Axles)	: 15		
Ve	hicle Speed:	25 mph		-	Vehicle N	Ai v					
Near/Far La	ne Distance:	68 feet		H		cleType		Dav	Evening	Nigh	t Daily
Site Data					*0///		utos:	71.99		15.9	
Par	rier Height:	0.0 feet			Me	dium Tr	ucks:	75.39	6 7.0%	17.7	7% 1.94%
Barrier Type (0-W	-	0.0 1661			F	leavy Tr	ucks:	60.49	6 12.0%	27.6	5% 11.21%
Centerline Dis		50.0 feet		L							
Centerline Dist.		50.0 feet		4	Noise So				eet)		
Barrier Distance		0.0 feet				Autos		000			
Observer Height (Above Pad):	5.0 feet				n Trucks		297			
	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.	004	Grade Ad	ijustm	ent: 0.0
	ad Flevation:	0.0 feet		1	Lane Equ	iivalent	Distan	ce (in	feet)		
,	Road Grade:	0.0%				Autos	: 37.	000			
	Left View:	-90.0 degree	es		Mediur	n Trucks	: 36.	760			
	Right View:	90.0 degree			Heav	y Trucks	36.	783			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr	iel	Barrier At	ten l	Berm Atten
Autos:	58.73	-2.28		1.8	6	-1.20		-4.65	0.	000	0.000
Medium Trucks:	70.80	-18.80		1.9	0	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	77.97	-11.18		1.9	0	-1.20		-5.43	0.	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	atten	uation)						
VehicleType	Leq Peak Hou	ur Leq Day	L	Leq E	vening	Leq I	Vight		Ldn		CNEL
Autos:	57	7.1	54.8		53.2		49.5	5	57.	1	57.6
Medium Trucks:	52	2.7	50.6		46.3		45.6	3	53.	0	53.2
Heavy Trucks:	67	7.5	64.5		63.4		62.3	3	69.	1	69.4
Vehicle Noise:	68	3.0	65.1		63.9		62.6	6	69.	4	69.7
Centerline Distance	e to Noise Co	ontour (in feet)								
•			L	70 (dBA	65 c	lBA		60 dBA		55 dBA
			Ldn:		46		99		213	3	458
		Ci	VEL:		48		104		223	3	481

	FHWA-RI	D-77-108 HIGH	WAY NO	DISE	PREDIC	TION MO	DDEL	(9/12/2	021)		
Road Nam	io: EA 2023 le: Arrowhed A nt: n/o Rialto A							S. Arro 14660	owhead Wa	arehouse	•
SITE	SPECIFIC IN	IPUT DATA				NO	DISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions (i	Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	5,868 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	cks (2	Axles).	15		
Peak H	lour Volume:	594 vehicles	3		He	avy Truci	ks (3+	Axles).	15		
Ve	hicle Speed:	25 mph		-	ehicle l	Miss					
Near/Far La	ne Distance:	68 feet		-		icleType		Day	Evening	Night	Dailv
Site Data							utos:	71.9%			86.85%
Par	rrier Height:	0.0 feet			М	edium Tru	icks:	75.3%	7.0%	17.7%	1.94%
Barrier Type (0-W		0.0			1	Heavy Tru	ıcks:	60.4%	12.0%	27.6%	11.21%
Centerline Di		50.0 feet		I.							
Centerline Dist.	to Observer:	50.0 feet		٨	ioise Sc	ource Ele			eet)		
Barrier Distance	to Observer:	0.0 feet				Autos.		0.000			
Observer Height (Above Pad):	5.0 feet		Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0							
Pa	ad Elevation:	0.0 feet			Heat	y Trucks.		.004	Grade Ad	jusunem	. 0.0
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent i	Distai	nce (in	feet)		
	Road Grade:	0.0%				Autos.	37	7.000			
	Left View:	-90.0 degree	es		Mediu	m Trucks.	: 36	6.760			
	Right View:	90.0 degree	es		Heav	y Trucks.	36	6.783			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fres	nel	Barrier Att	en Be	m Atten
Autos:	58.73	-2.16		1.86		-1.20		-4.65		000	0.000
Medium Trucks:	70.80			1.90		-1.20		-4.87		000	0.000
Heavy Trucks:	77.97	-11.05		1.90)	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou		_	eq Ev	rening	Leq N	_		Ldn	_	NEL
Autos:	57		55.0		53.3		49		57.2	_	57.7
Medium Trucks:	52		50.7		46.4		45		53.		53.3
Heavy Trucks: Vehicle Noise:	67		64.6 65.2		63.6		62 62		69.1 69.1		69.5
Centerline Distanc	e to Noise Co	ontour (in feet)								
ocinci inte Distant	.c to 140/36 CC	mour (III leet		70 d	ΒA	65 d	BA		60 dBA	55	dBA
			I dn:		47		10	1	217	,	467

Scenari Road Nam Road Segmer	e: Arrowhed A					.,		e: S. Arn r: 14660	owhead Wa	arehouse	•
SITE S	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Cor	ditions	(Harc	l = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	5,805 vehicle	es					Autos	15		
Peak Hour	Percentage:	10.13%			Me	dium T	rucks (2 Axles)	15		
Peak H	our Volume:	588 vehicles	6		He	avy Tru	ucks (3	+ Axles)	15		
Vel	nicle Speed:	25 mph		V	ehicle	Miv					
Near/Far Lar	ne Distance:	68 feet		-		icleTyp	e	Dav	Evening	Night	Dailv
Site Data							Autos:	. ,	-		87.10
Rar	rier Height:	0.0 feet			М	edium '	Trucks.	75.39	6 7.0%	17.7%	1.90
Barrier Type (0-W	-	0.0				Heavy	Trucks.	60.49	6 12.0%	27.6%	11.009
Centerline Dis	t. to Barrier:	50.0 feet		A	laisa S	ourco F	lovati	ons (in f	innt)		
Centerline Dist.	o Observer:	50.0 feet		74	UISE SI	Aut		0.000	eei)		
Barrier Distance	o Observer:	0.0 feet			Modiu	m Truc		2.297			
Observer Height (Above Pad):	5.0 feet				ry Truc		8.004	Grade Ad	liuctmont	- 0 0
Pa	d Elevation:	0.0 feet			пеа	ry Truc	KS.	0.004	Orado Ad	justinoni	- 0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivaler	nt Dista	ance (in	feet)		
F	Road Grade:	0.0%				Aut	os: 3	37.000			
	Left View:	-90.0 degree	es		Mediu	m Truc	ks: 3	36.760			
	Right View:	90.0 degree	es		Hear	y Truc	ks: 3	36.783			
FHWA Noise Mode	I Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fre	esnel	Barrier At	en Ber	rm Atter
Autos:	58.73	-2.19		1.86		-1.20		-4.65	0.	000	0.00
Medium Trucks:	70.80	-18.80		1.90	1	-1.20		-4.87	0.	000	0.00
Heavy Trucks:	77.97	-11.18		1.90		-1.20		-5.43	0.	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	ıation)						
	Leq Peak Hou			Leq Ev			y Night		Ldn		NEL
Autos:	57.	_	54.9		53.2			9.6	57.		57
Medium Trucks:	52.		50.6		46.3			5.6	53.	-	53
Heavy Trucks:	67.		64.5		63.4		6	2.3	69.		69
Vehicle Noise:	68.	0	65.1		63.9		6	2.6	69.	4	69
Centerline Distanc	e to Noise Co	ntour (in feet)								
			L	70 di		65	dBA	_	60 dBA		dBA
			Ldn:		46			99	213		45
		C1	NFI:		48		- 1	04	223		48

Wednesday, August 2, 2023

FHWA-	RD-77-108 HIGH	WAY NOI	SE PREDIC	CTION MC	DEL (9/12/	2021)		
Scenario: EAP 202 Road Name: Arrowhed Road Segment: n/o Rialto	d Av.				lame: S. Ar mber: 1466	rowhead Warel	house	
SITE SPECIFIC	INPUT DATA			NO	DISE MOD	EL INPUTS		
Highway Data			Site Cor	nditions (l	Hard = 10, S	Soft = 15)		
Average Daily Traffic (Adt).	5,976 vehicle	es			Auto	s: 15		
Peak Hour Percentage	10.13%		Me	edium Truc	cks (2 Axles): 15		
Peak Hour Volume	605 vehicle	S	He	avy Truck	s (3+ Axles): 15		
Vehicle Speed	25 mph		Vehicle					
Near/Far Lane Distance	: 68 feet			icleType	Dav	Evening N	light Daily	
Site Data			ver		tos: 71.9	-	5.9% 87.09%	
			- 4/	edium Tru			7.7% 1.90%	
Barrier Height				Heavy Tru			7.6% 11.01%	
Barrier Type (0-Wall, 1-Berm)				neavy III	chs. 00.4	/6 12.0/6 2	7.0% 11.01%	
Centerline Dist. to Barrier			Noise S	ource Ele	vations (in	feet)		
Centerline Dist. to Observer				Autos:	0.000			
Barrier Distance to Observer			Mediu	m Trucks:	2.297			
Observer Height (Above Pad)			Heavy Trucks: 8.004 Grade Adjustment: 0.0					
Pad Elevation Road Elevation			Lano Eo	uivalant l	Distance (ir	foot)		
Road Elevation Road Grade			Lane Lq	Autos:		i rect)		
Left View			Modis	m Trucks:				
				m mucks. vy Trucks:				
Right View	: 90.0 degree	es	пеа	vy Trucks.	30.703			
FHWA Noise Model Calculation	ons		•					
VehicleType REMEL	Traffic Flow	Distanc		Road	Fresnel	Barrier Atten	Berm Atten	
Autos: 58.7			1.86	-1.20	-4.65			
Medium Trucks: 70.8			1.90	-1.20	-4.87			
Heavy Trucks: 77.9	97 -11.05		1.90	-1.20	-5.43	0.000	0.000	
Unmitigated Noise Levels (wi	thout Topo and	barrier at	tenuation)					
VehicleType Leq Peak H	lour Leq Day	/ Lec	q Evening	Leq N	light	Ldn	CNEL	
Autos:	57.3	55.0	53.4		49.7	57.3	57.8	
Medium Trucks:	52.8	50.7	46.4		45.7	53.1	53.3	
		64.6	63.6		62.4	69.2	69.5	
Vehicle Noise:	68.1	65.2	64.0		62.8	69.6	69.9	
Centerline Distance to Noise	Contour (in feet							
			70 dBA	65 di		60 dBA	55 dBA	
		Ldn:	47		101	217	467	
	C	NEL:	49		106	228	491	

Wednesday, August 2, 2023

FHWA-RI	0-77-108 HIGH	WAY N	OISE	PREDIC	TION N	IODEL (9/12/20	021)		
Scenario: EAC 2023 Road Name: Arrowhed A Road Segment: n/o Rialto A						Name: lumber:		whead Wa	arehouse	!
SITE SPECIFIC IN	IPUT DATA				Ν	IOISE I	MODE	L INPUT	S	
Highway Data			5	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt):	6,110 vehicle	es					Autos:	15		
Peak Hour Percentage:	10.13%			Me	dium Tr	ucks (2	Axles):	15		
Peak Hour Volume:	619 vehicles	3		He	avy Tru	cks (3+	Axles):	15		
Vehicle Speed:	25 mph		,	Vehicle I	Wix					
Near/Far Lane Distance:	68 feet				icleType	,	Day	Evening	Night	Daily
Site Data						Autos:	71.9%	- 0	15.9%	
Barrier Height:	0.0 feet			M	edium T	rucks:	75.3%	7.0%	17.7%	1.94%
Barrier Type (0-Wall, 1-Berm):	0.0			1	leavy T	rucks:	60.4%	12.0%	27.6%	11.21%
Centerline Dist. to Barrier:	50.0 feet		١,	Voise So	F	lovention	o (in fe	2041		
Centerline Dist. to Observer:	50.0 feet		- '	voise sc	Auto			ei)		
Barrier Distance to Observer:	0.0 feet			Madiu	Auto m Truck		.000 .297			
Observer Height (Above Pad):	5.0 feet				y Truck		.004	Grade Ad	iustment	. 0 0
Pad Elevation:	0.0 feet			пеач	у писк	s. o.	.004	Orade Ad	usunon	. 0.0
Road Elevation:	0.0 feet		I	Lane Eq	uivalen	Distan	ce (in i	feet)		
Road Grade:	0.0%				Auto	s: 37	.000			
Left View:	-90.0 degree	es			m Truck	00	760			
Right View:	90.0 degree	es		Heav	y Truck	s: 36	.783			
FHWA Noise Model Calculation.	s									
VehicleType REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresi	nel	Barrier Att	en Bei	m Atten
VehicleType REMEL Autos: 58.73	-1.98	Dista	1.86	6	-1.20	Fresi	-4.65	0.0	000	0.000
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80	-1.98 -18.50	Dista	1.86	6 0	-1.20 -1.20	Fresi	-4.65 -4.87	0.0	000	0.000
VehicleType REMEL Autos: 58.73	-1.98	Dista	1.86	6 0	-1.20	Fresi	-4.65	0.0	000	0.000
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80	-1.98 -18.50 -10.87		1.86 1.90 1.90	6 0 0	-1.20 -1.20	Fresi	-4.65 -4.87	0.0	000 000	0.000
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80 Heavy Trucks: 77.97 Unmitigated Noise Levels (with VehicleType Leq Peak Hou	-1.98 -18.50 -10.87 out Topo and Ir Leg Day	barrier	1.86 1.90 1.90 atten	6 0 0 uation) vening	-1.20 -1.20 -1.20	Night	-4.65 -4.87 -5.43	0.0 0.0 0.0	000 000 000	0.000 0.000 0.000
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80 Heavy Trucks: 77.97 Unmitigated Noise Levels (with VehicleType Leq Peak Hot. Autos: 57	-1.98 -18.50 -10.87 out Topo and <i>ir</i> Leq Day	barrier , L 55.1	1.86 1.90 1.90 atten	6 0 0 uation) vening 53.5	-1.20 -1.20 -1.20	Night 49.	-4.65 -4.87 -5.43	0.0 0.0 0.0 <i>Ldn</i>	000 000 000 000	0.000 0.000 0.000 NEL 57.9
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80 Heavy Trucks: 77.97 Unmitigated Noise Levels (with VehicleType Leq Peak Hot. Autos: 57 Medium Trucks: 53	-1.98 -18.50 -10.87 out Topo and Ir Leq Day .4	barrier 55.1 50.9	1.86 1.90 1.90 atten	6 0 0 0 uation) vening 53.5 46.6	-1.20 -1.20 -1.20	Night 49.	-4.65 -4.87 -5.43	0.0 0.0 0.0 <i>Ldn</i> 57.4 53.3	000 000 000 000 C	0.000 0.000 0.000 NEL 57.9 53.5
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80 Heavy Trucks: 77.97 Unmitigated Noise Levels (with VehicleType Leq Peak Hot. Autos: 57	-1.98 -18.50 -10.87 out Topo and <i>Ir</i> Leq Day :4 .0	barrier , L 55.1	1.86 1.90 1.90 atten	6 0 0 uation) vening 53.5	-1.20 -1.20 -1.20	Night 49.	-4.65 -4.87 -5.43	0.0 0.0 0.0 <i>Ldn</i>	000 000 000 000 4 3	0.000 0.000 0.000 NEL 57.9 53.5 69.7
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80 Heavy Trucks: 77.97 Unmitigated Noise Levels (with VehicleType Leq Peak Hot Autos: 57 Medium Trucks: 53 Heavy Trucks: 67 Vehicle Noise: 68	-1.98 -18.50 -10.87 out Topo and ir Leq Day .4 .0 .8	barrier 55.1 50.9 64.8 65.4	1.86 1.90 1.90 atten	6 0 0 uation) vening 53.5 46.6 63.8	-1.20 -1.20 -1.20	Night 49. 45. 62.	-4.65 -4.87 -5.43	0.0 0.0 0.0 <i>Ldn</i> 57 53.: 69	000 000 000 000 4 3	0.000 0.000 0.000 NEL 57.9 53.5 69.7
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80 Heavy Trucks: 77.97 Unmitigated Noise Levels (with VehicleType Leq Peak Hot Autos: 57 Medium Trucks: 53 Heavy Trucks: 67	-1.98 -18.50 -10.87 out Topo and ir Leq Day .4 .0 .8	barrier 55.1 50.9 64.8 65.4	1.86 1.90 1.90 atten	6 0 0 0 vening 53.5 46.6 63.8 64.2	-1.20 -1.20 -1.20	Night 49. 45. 62.	-4.65 -4.87 -5.43 8 9 6	0.0 0.0 0.0 <i>Ldn</i> 57 53.: 69	000 000 000 000 C.	0.000
VehicleType REMEL Autos: 58.73 Medium Trucks: 70.80 Heavy Trucks: 77.97 Unmitigated Noise Levels (with VehicleType Leq Peak Hot Autos: 57 Medium Trucks: 53 Heavy Trucks: 67 Vehicle Noise: 68	-1.98 -18.50 -10.87 out Topo and ir Leq Day .4 .0 .8 .3	barrier 55.1 50.9 64.8 65.4	1.86 1.90 1.90 atten Leq Ev	6 0 0 0 vening 53.5 46.6 63.8 64.2	-1.20 -1.20 -1.20	Night 49. 45. 62. 62.	-4.65 -4.87 -5.43 8 9 6	0.0 0.0 0.0 <i>Ldn</i> 57.4 53.3 69.4	000 000 000 000 C. 4 3 4	0.000 0.000 0.000 NEL 57.9 53.8 69.7

	FHWA-RD	0-77-108 HIGH	WAY NO	ISE I	PREDIC	TION MO	DDEL	(9/12/2	021)		
Road Nam	io: HY 2040 e: Arrowhed A nt: n/o Rialto A							S. Arro 14660	owhead Wa	arehouse	•
SITE S	SPECIFIC IN	IPUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions (Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	6,721 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	cks (2	Axles).	15		
Peak H	our Volume:	681 vehicles	;		He	avy Truc	ks (3+	Axles).	15		
Vei	hicle Speed:	25 mph		V	ehicle l	Miv					
Near/Far Lai	ne Distance:	68 feet		F.		icleType		Dav	Evening	Night	Dailv
Site Data							utos:	71.9%		15.9%	86.85%
Rar	rier Height:	0.0 feet			М	edium Tru	ıcks:	75.3%	6 7.0%	17.7%	1.94%
Barrier Type (0-W		0.0			- 1	Heavy Tru	ıcks:	60.4%	6 12.0%	27.6%	11.21%
Centerline Dis	. ,	50.0 feet			·- · 0	ource Ele		/! 6	41		
Centerline Dist.	to Observer:	50.0 feet		N	ioise so	Autos		n s (in 1	eet)		
Barrier Distance	to Observer:	0.0 feet			Modiu	Autos m Trucks		.297			
Observer Height (Above Pad):	5.0 feet				n rrucks vy Trucks	-	.004	Grade Ad	liuetman	- 0.0
Pa	ad Elevation:	0.0 feet								jusurierii	. 0.0
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Dista	nce (in	feet)		
F	Road Grade:	0.0%				Autos		7.000			
	Left View:	-90.0 degree	:S		Mediu	m Trucks	: 36	6.760			
	Right View:	90.0 degree	s		Heav	y Trucks	: 36	5.783			
FHWA Noise Mode	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fres		Barrier Att	en Be	rm Atten
Autos:	58.73	-1.57		1.86		-1.20		-4.65		000	0.000
Medium Trucks:	70.80	-18.09		1.90		-1.20		-4.87		000	0.000
Heavy Trucks:	77.97	-10.46		1.90		-1.20		-5.43	0.0	000	0.000
Unmitigated Noise											
	Leq Peak Hou			eq Ev	ening	Leq N	_		Ldn	_	NEL
Autos:	57		55.5		53.9		50		57.		58.3
Medium Trucks:	53		51.3		47.0		46		53.		53.9
Heavy Trucks: Vehicle Noise:	68 68		65.2 65.8		64.2		63 63		69. 70.		70.1 70.5
Centerline Distanc	e to Noise Co	ontour (in feet									
Contentine Distant	110/38 00	Jui (iii ieet)		70 d	BA	65 a	ΒA		60 dBA	55	dBA
			Ldn:		51		11	0	237		511

	FHWA-RD	-77-108 HIGH	WAY NO	DISE	PREDIC	TION	MODEL	(9/12/20	021)		
Road Nam	o: EAPC 2023 e: Arrowhed A nt: n/o Rialto A						t Name: Vumber:		whead Wa	arehouse	•
SITE S	SPECIFIC IN	PUT DATA					NOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	6,218 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium T	rucks (2	Axles):	15		
Peak H	our Volume:	630 vehicles	8		He	avy Tru	icks (3+	Axles):	15		
Vei	hicle Speed:	25 mph		H	Vehicle i	Miv					
Near/Far Lar	ne Distance:	68 feet		-		icleTyp	e	Day	Evening	Night	Daily
Site Data						,,	Autos:	71.9%	- 0		87.08
Rar	rier Height:	0.0 feet			М	edium 1	rucks:	75.3%	7.0%	17.7%	1.90
Barrier Type (0-W	-	0.0				Heavy 1	rucks:	60.4%	12.0%	27.6%	11.02
Centerline Dis		50.0 feet		H	Noise So	F	lovetion	o (in f	2041		
Centerline Dist.	to Observer:	50.0 feet		H.	WOISE SC	Auto		.000	et)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truci		.297			
Observer Height (A	Above Pad):	5.0 feet				ry Truci		.004	Grade Ad	iuetmant	. 0 0
Pa	d Elevation:	0.0 feet		L	пеан	ry Truci	18. 0	.004	Grade Ad	Justinoni	. 0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivaler	t Distar	ce (in i	feet)		
F	Road Grade:	0.0%				Auto	os: 37	.000			
	Left View:	-90.0 degree	es		Mediu	m Truci	ks: 36	.760			
	Right View:	90.0 degree	es		Heav	y Truci	ks: 36	.783			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Distai	псе	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atter
Autos:	58.73	-1.89		1.8	6	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	70.80	-18.50		1.9	0	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	77.97	-10.87		1.9	0	-1.20		-5.43	0.0	000	0.0
Unmitigated Noise											
	Leq Peak Hou			eq E	vening		Night		Ldn	_	NEL
Autos:	57.		55.2		53.5		49.		57.		57
Medium Trucks:	53.	-	50.9		46.6		45.	-	53.	-	53
		8	64.8		63.8		62. 62.		69.4		69
Heavy Trucks:	67.		CE A								
Heavy Trucks: Vehicle Noise:	68.	3	65.4		64.2		62.	9	69.	′	70
Heavy Trucks:	68.	3		70 -							
Heavy Trucks: Vehicle Noise:	68.	3 ntour (in feet)		70	64.2 dBA 48		dBA 10:	6	69. 60 dBA	55	70 dBA 48

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOIS	E PREDIC	TION M	ODEL	(9/12/2	021)		
Road Nam	o: HYP 2040 e: Arrowhed A nt: n/o Rialto A							: S. Arro : 14660	whead Wa	rehouse	1
SITE S	SPECIFIC IN	NPUT DATA				N	OISE	MODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	6,829 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	ıcks (2	Axles):	15		
Peak H	our Volume:	692 vehicles	3		He	avy Truc	cks (3+	Axles):	15		
Ve	hicle Speed:	25 mph			Vehicle I	Miss					
Near/Far Lai	ne Distance:	68 feet				icleType		Dav	Evening	Night	Daily
Site Data					* 011		lutos:	71.9%			87.06%
	rier Heiaht:	0.0 feet			Me	edium Tı		75.3%		17.7%	
Barrier Type (0-W		0.0 feet			F	Heavy Tr	ucks:	60.4%	12.0%	27.6%	11.03%
Centerline Dis		50.0 feet									
Centerline Dist.		50.0 feet			Noise So				eet)		
Barrier Distance		0.0 feet				Autos		0.000			
Observer Height (5.0 feet				m Trucks		2.297			
	ad Flevation:	0.0 feet			Heav	y Trucks	s: 8	3.004	Grade Adj	ustment	: 0.0
	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos	s: 37	7.000			
	Left View:	-90.0 degree	s		Mediu	m Trucks	s: 36	6.760			
	Right View:	90.0 degree			Heav	y Truck	s: 36	6.783			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fres		Barrier Atte		m Atten
Autos:	58.73			1.8		-1.20		-4.65	0.0		0.000
Medium Trucks:	70.80			1.9		-1.20		-4.87		00	0.000
Heavy Trucks:	77.97	-10.46		1.9	90	-1.20		-5.43	0.0	100	0.000
Unmitigated Noise	Levels (with	out Topo and	barri	er atte	nuation)						
VehicleType	Leq Peak Hou	ur Leq Day		Leq E	vening	Leq	Night		Ldn		NEL
Autos:	57		55.6		54.0		50		57.9		58.4
Medium Trucks:			51.3		47.0		46		53.7		53.9
Heavy Trucks:		·-	65.2		64.2		63		69.8		70.1
Vehicle Noise:	68	3.7	65.8		64.6		63	.3	70.1		70.5
Centerline Distanc	e to Noise Co	ontour (in feet))								
				70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		51		11	0	237		512
		CI	VEL:		54		11	6	249		537

Wednesday, August 2, 2023 Wednesday, August 2, 2023

	FHWA-RD	-77-108 HIGH	WAY N	IOISE	PREDIC	TION N	IODEL (9	9/12/2	021)		
	io: E ne: Arrowhed A nt: s/o Rialto A						Name: S lumber:		owhead Wa	rehou	se
SITE	SPECIFIC IN	PUT DATA				١	IOISE N	/ODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	5,893 vehicle	es					Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	dium Tr	ucks (2 A	(xles	: 15		
Peak H	lour Volume:	597 vehicles	S		He	avy Tru	cks (3+ A	(xles	: 15		
Ve	hicle Speed:	25 mph		F	Vehicle I	/liv					
Near/Far La	ne Distance:	68 feet		F		cleType	,	Dav	Evening	Nigh	Daily
Site Data								71.9%		15.9	,
	rrier Height:	0.0 feet			Me	edium T		75.39		17.7	
Barrier Type (0-W		0.0			F	leavy T	rucks:	60.49	6 12.0%	27.6	% 11.21%
Centerline Di		50.0 feet		L							
Centerline Dist.		50.0 feet			Noise So			_	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height ((Above Pad):	5.0 feet				n Truck		297			
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	ustme	nt: 0.0
	ad Elevation:	0.0 feet		Ī	Lane Equ	uivalen	t Distanc	e (in	feet)		
	Road Grade:	0.0%				Auto	s: 37.0	000			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 36.	760			
	Right View:	90.0 degree	es		Heav	y Truck	s: 36.	783			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en E	erm Atten
Autos:	58.73	-2.14		1.8	6	-1.20		-4.65	0.0	00	0.000
Medium Trucks:	70.80	-18.66		1.9	10	-1.20		-4.87	0.0	100	0.000
Heavy Trucks:	77.97	-11.03		1.9	10	-1.20		-5.43	0.0	00	0.000
Unmitigated Noise	e Levels (witho	out Topo and	barrier	atter	nuation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq E	vening	Leq	Night		Ldn		CNEL
Autos:	57.	.3	55.0		53.3		49.7		57.3	3	57.7
Medium Trucks:	52.	.8	50.8		46.4		45.7		53.1		53.4
Heavy Trucks:	67.	6	64.6		63.6		62.5		69.2	!	69.5
Vehicle Noise:	68.	2	65.2		64.1		62.8		69.6	i	69.9
Centerline Distance	ce to Noise Co	ntour (in feet)								
				70	dBA	65	dBA		60 dBA		55 dBA
			Ldn:		47		101		217		468
		C	NEL:		49		106		228		492

	FHWA-RI	D-77-108 HIGH	WAY N	DISE	PREDIC	TION MC	DEL	(9/12/2	021)				
	o: EA 2023 e: Arrowhed A nt: s/o Rialto A					Project I Job Nu			owhead Wa	arehouse			
SITE S	SPECIFIC IN	IPUT DATA				NO	DISE	MODE	L INPUT	S			
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	6,070 vehicle	es					Autos.	15				
Peak Hour	Percentage:	10.13%			Me	dium Truc	cks (2	Axles).	15				
Peak H	our Volume:	615 vehicles	3		He	avy Truck	(S (3+	Axles).	15				
Vei	hicle Speed:	25 mph		١,	/ehicle l	Miss							
Near/Far Lai	ne Distance:	68 feet		١,		icleType		Day	Evening	Night	Daily		
Site Data					71 7 0 0								
		0.0 feet			Autos: 71.9% 12.2% 15.9% 86.89 Medium Trucks: 75.3% 7.0% 17.7% 1.99								
Barrier Type (0-W	rier Height:	0.0 reet 0.0			F	Heavy Tru	icks:	60.4%	6 12.0%	27.6%	11,219		
Centerline Dis		50.0 feet											
	Centerline Dist. to Observer: 50.0 feet					Noise Source Elevations (in feet)							
	Barrier Distance to Observer: 0.0 feet					Autos: 0.000							
Observer Height (5.0 feet			Medium Trucks: 2.297								
	nd Elevation:	0.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0								
	d Elevation:	0.0 feet		L	ane Eq	uivalent l	Distar	nce (in	feet)				
	Road Grade:	0.0%				Autos:	37	.000					
	Left View:	-90.0 degree	es		Mediui	m Trucks:	36	.760					
	Right View:	90.0 degree			Heav	y Trucks:	36	5.783					
FHWA Noise Mode	l Calculation	s											
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres	nel	Barrier Att	en Bei	m Atten		
Autos:	58.73	-2.01		1.86	3	-1.20		-4.65	0.0	000	0.00		
Medium Trucks:	70.80			1.90		-1.20		-4.87		000	0.00		
Heavy Trucks:	77.97	-10.90		1.90)	-1.20		-5.43	0.0	000	0.00		
Unmitigated Noise													
	Leq Peak Hou			eq Ev	rening	Leq N	_		Ldn		NEL		
Autos:	57		55.1		53.4		49	-	57.		57.8		
Medium Trucks:	53		50.9		46.6		45		53.		53.		
Heavy Trucks: Vehicle Noise:	67		64.7 65.3		63.7		62 62		69. 69.		69.6 70.0		
Centerline Distanc	o to Noiso Co	antour (in foot											
сетенне ызтапс	e io ivoise co	ontour (iii reet		70 a	IBA	65 d	BA		60 dBA	55	dBA		
Ldn:							478						
	Lan: CNEL:					48 103 222 478 50 108 233 502							

	io: E+P								whead Wa	arehouse	
	e: Arrowhed A					Job I	Vumber	14660			
Road Segmei	nt: s/o Rialto A	1.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data					Site Cor	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	6,066 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium T	rucks (2	Axles):	15		
Peak H	lour Volume:	614 vehicles	8		He	eavy Tru	ıcks (3+	Axles):	15		
Ve	hicle Speed:	25 mph		f	Vehicle	Mix					
Near/Far La	ne Distance:	68 feet		F		icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	85.71
Rai	rier Height:	0.0 feet			М	edium 1	rucks:	75.3%	7.0%	17.7%	2.14
Barrier Type (0-W	-	0.0				Heavy 1	rucks:	60.4%	12.0%	27.6%	12.15
Centerline Dis		50.0 feet		-	M-1 0			/! 6	41		
Centerline Dist.	to Observer:	50.0 feet		-	Noise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		0.000			
Observer Height (Above Pad):	5.0 feet				m Truci		2.297	Grade Ad	ii ratmant	
Pa	ad Elevation:	0.0 feet			Hear	vy Truci	KS: 8	3.004	Grade Ad	justrient	0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivaler	t Dista	nce (in	feet)		
	Road Grade:	0.0%				Auto	os: 3	7.000			
	Left View:	-90.0 degree	es		Mediu	m Truci	ks: 3	6.760			
	Right View:	90.0 degree	es		Hear	vy Truci	ks: 3	6.783			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fre	snel	Barrier Att	en Ber	m Atter
Autos:	58.73	-2.07		1.8		-1.20		-4.65		000	0.00
Medium Trucks:	70.80	-18.10		1.9	90	-1.20		-4.87		000	0.00
Heavy Trucks:	77.97	-10.55		1.9	90	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	-										
VehicleType	Leq Peak Hou	, ,		Leq E	vening	_	Night		Ldn		VEL
Autos:	57.	-	55.0		53.4		49		57.3		57
Medium Trucks:	53.		51.3		47.0		46		53.7		53
Heavy Trucks:	68.		65.1		64.1		62		69.7		70
Vehicle Noise:	68.		65.7		64.5		63	.2	70.0)	70
Centerline Distanc	e to Noise Co	ntour (in feet))	70	-10.4		-/0.4		20 -ID4		-10.4
			L	70	dBA	65	dBA	_	60 dBA		dBA
			Ldn: NFI:		50 53		10		233 245		50 52

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MO	DEL	(9/12/20	021)			
Road Na	rio: EAP 2023 ne: Arrowhed A ent: s/o Rialto A							S. Arro 14660	whead Wa	arehouse	1	
SITE	SPECIFIC IN	IPUT DATA							L INPUT	S		
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	6,243 vehicle	s					Autos:	15			
Peak Hou	r Percentage:	10.13%			Me	dium Tru	cks (2	Axles):	15			
Peak	Hour Volume:	632 vehicles	;		He	avy Truci	ks (3+	Axles):	15			
V	ehicle Speed:	25 mph		ŀ	Vehicle I	Miv						
Near/Far L	ane Distance:	68 feet		-		icleType		Dav	Evening	Night	Daily	
Site Data					Autos: 71.9% 12.2% 15.9% 85.							
D.	arrier Heiaht:	0.0 feet			Me	edium Tru	icks:	75.3%	7.0%	17.7%	2.13%	
Barrier Type (0-1		0.0			F	leavy Tru	icks:	60.4%	12.0%	27.6%	12.13%	
,,,,	ist. to Barrier:	50.0 feet		-	M-1 0-			(:- 6	41			
Centerline Dist	to Observer:	50.0 feet		-	Noise So				eet)			
Barrier Distance	to Observer:	0.0 feet			A de ellere	Autos. n Trucks		2.297				
Observer Height	(Above Pad):	5.0 feet				n Trucks. v Trucks.	-	3.004	Grade Ad	livotmont		
F	Pad Elevation:	0.0 feet			Heav	y Trucks.		3.004	Grade Ad	jusuneni	. 0.0	
Ro	oad Elevation:	0.0 feet			Lane Equ	uivalent l	Dista	nce (in i	feet)			
	Road Grade:	0.0%				Autos	3	7.000				
	Left View:	-90.0 degree	s		Mediur	n Trucks	3	6.760				
	Right View:	90.0 degree	:S		Heav	y Trucks	31	5.783				
FHWA Noise Mod	lel Calculation	s										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre		Barrier At		m Atten	
Autos		-1.94		1.8		-1.20		-4.65		000	0.000	
Medium Trucks				1.9		-1.20		-4.87		000	0.000	
Heavy Trucks	77.97	-10.44		1.9	90	-1.20		-5.43	0.	000	0.000	
Unmitigated Nois	e Levels (with	out Topo and I	barri	er atter	nuation)							
VehicleType	Leq Peak Hou			Leq E	vening	Leq №	_		Ldn		NEL	
Autos			55.2		53.5		49		57.		57.9	
Medium Trucks			51.4		47.1		46		53.	-	54.0	
Heavy Trucks			65.2		64.2		63		69.		70.1	
Vehicle Noise	: 68	3.7	65.8		64.6		63	.3	70.	1	70.5	
Centerline Distan	ce to Noise Co	ontour (in feet)										
			L	70	dBA	65 d			60 dBA		dBA	
			Ldn:		51		11	-	237		511	
		CI	VEL:		54		11	6	249)	537	

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	YAW 1	NOISE	PREDIC	TION MO	DDEL (S	9/12/2	021)			
	o: EAC 2023 e: Arrowhed A nt: s/o Rialto A						Vame: S Imber:		owhead V	Vareh	ouse	
SITE S	SPECIFIC IN	IPUT DATA				N	DISE N	/ODE	L INPU	TS		
Highway Data					Site Cond	ditions (Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	6,316 vehicle	es					Autos.	15			
Peak Hour	Percentage:	10.13%			Med	dium Tru	cks (2 A	(xles	15			
Peak H	our Volume:	640 vehicles	3		Hea	avy Truci	ks (3+ A	(xles	15			
Ve	hicle Speed:	25 mph		ŀ	Vehicle N	Niv						
Near/Far Lai	ne Distance:	68 feet		ŀ		cleType		Dav	Evening	n Nie	aht	Daily
Site Data					VCIII			71.9%		-	_	86.85%
Par	rier Heiaht:	0.0 feet			Ме	dium Tru	ıcks:	75.3%	6 7.09	6 17	7.7%	1.94%
Barrier Type (0-W		0.0			H	leavy Tru	ıcks:	60.4%	6 12.09	6 27	7.6%	11.21%
Centerline Dis		50.0 feet		ļ								
Centerline Dist.		50.0 feet		Ļ	Noise So			•	eet)			
Barrier Distance		0.0 feet				Autos		000				
Observer Height (Above Pad):	5.0 feet				n Trucks		297				
	d Elevation:	0.0 feet			Heav	y Trucks	: 8.0	004	Grade A	Aajusti	nent:	0.0
Ros	d Elevation:	0.0 feet		Ī	Lane Equ	iivalent	Distand	e (in	feet)			
F	Road Grade:	0.0%		Ī		Autos	: 37.0	000				
	Left View:	-90.0 degree	es		Mediun	n Trucks	36.	760				
	Right View:	90.0 degree			Heav	y Trucks	36.	783				
FHWA Noise Mode	l Calculation	s										
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el	Barrier A	Atten	Bern	n Atten
Autos:	58.73	-1.84		1.8	86	-1.20		-4.65	(0.000		0.000
Medium Trucks:	70.80	-18.36		1.9	90	-1.20		-4.87	(0.000		0.000
Heavy Trucks:	77.97	-10.73		1.9	90	-1.20		-5.43	(0.000		0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r atter	nuation)							
VehicleType	Leq Peak Ho	ır Leq Day	,	Leq E	vening	Leq N	light		Ldn		CN	EL
Autos:	57	.6	55.3		53.6		50.0)	5	7.6		58.0
Medium Trucks:	53	3.1	51.1		46.7		46.0)	53	3.4		53.7
Heavy Trucks:	67	'.9	64.9		63.9		62.8	}	69	9.5		69.8
Vehicle Noise:	68	3.5	65.5		64.4		63.1		69	9.9		70.2
Centerline Distance	e to Noise C	ontour (in feet)									
•				70	dBA	65 a	BA .	- 4	60 dBA		55 c	lBA
			Ldn:		49		106		22	28		490
		C	VEL:		51		111		23	39		515

	FHWA-RI	D-77-108 HIGH	WAY NO	SE PRE	DICTION MO	DDEL	(9/12/2	021)				
Road Nam	io: HY 2040 le: Arrowhed A nt: s/o Rialto A						S. Arro 14660	owhead Wa	arehouse	•		
SITE	SPECIFIC IN	IPUT DATA			N	OISE	MODE	L INPUT	S			
Highway Data				Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	7,374 vehicle	es				Autos:	15				
Peak Hour	Percentage:	10.13%			Medium Trucks (2 Axles): 15							
Peak H	lour Volume:	747 vehicles	3		Heavy Truc	ks (3+	Axles).	15				
Ve	hicle Speed:	25 mph		Vohi	le Mix							
Near/Far La	ne Distance:	68 feet			VehicleType		Day	Evening	Night	Dailv		
Site Data				Autos: 71.9% 12.2% 15.9% 8								
Pa	rrier Height:	0.0 feet		Medium Trucks: 75.3% 7.0% 17.7% 1.94								
Barrier Type (0-W		0.0			Heavy Trucks: 60.4% 12.0% 27.6% 11.21%							
Centerline Di		50.0 feet		A1-1-	Noise Source Elevations (in feet)							
Centerline Dist.	to Observer:		Noise Source Elevations (in feet) Autos: 0.000									
Barrier Distance	to Observer:			Medium Trucks: 2.297								
Observer Height	Above Pad):	5.0 feet		Heavy Trucks: 8.004 Grade Adjustment: 0.0								
P	ad Elevation:	0.0 feet		,	leavy Trucks	. с	.004	Grade Au	jusuneni	. 0.0		
Ro	ad Elevation:	0.0 feet		Lane	Equivalent	Distar	nce (in	feet)				
	Road Grade:	0.0%			Autos	: 37	7.000					
	Left View:	-90.0 degree	es	Me	dium Trucks	: 36	6.760					
	Right View:	90.0 degree	es	F	leavy Trucks	: 36	5.783					
FHWA Noise Mode	el Calculation	s		-								
VehicleType	REMEL	Traffic Flow	Distan	e Fi	nite Road	Fres	nel	Barrier Att	en Bei	m Atten		
Autos:	58.73	-1.16		1.86	-1.20		-4.65		000	0.000		
Medium Trucks:	70.80			1.90	-1.20		-4.87		000	0.000		
Heavy Trucks:	77.97	-10.06		1.90	-1.20		-5.43	0.0	000	0.000		
Unmitigated Noise												
VehicleType	Leq Peak Hou		_	q Evenir	. ,			Ldn		NEL		
Autos:	58		55.9		4.3	50		58.2	_	58.7		
Medium Trucks:	53		51.7		7.4	46.7		54.		54.3		
Heavy Trucks: Vehicle Noise:	68		65.6 66.2		i4.6	63 63		70.: 70.:		70.5		
Centerline Distant	e to Noise Co	ontour (in feet)									
oemenine Distant	.c 10 110/36 CC	mour (III leet,		70 dBA	65 c	IBA	-	60 dBA	55	dBA		
			Ldn:		54	11	7	252	!	544		
	Lan: CNEL:					54 117 252 544 57 123 265 571						

	FHWA-RD	-77-108 HIGH	WAY N	IOISE	PREDIC	CTION I	MODEL	(9/12/2	021)		
Road Nam	io: EAPC 2023 ne: Arrowhed A nt: s/o Rialto A						t Name: Number:		whead Wa	arehouse	,
SITE :	SPECIFIC IN	PUT DATA					VOISE	MODE	L INPUT	S	
Highway Data					Site Cor	ditions	(Hard:	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	6,489 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium T	rucks (2	Axles):	15		
Peak H	lour Volume:	657 vehicles	3		He	avy Tru	icks (3+	Axles):	15		
Ve	hicle Speed:	25 mph			Vehicle	Miv					
Near/Far La	ne Distance:	68 feet				icleTyp	e	Dav	Evening	Night	Dailv
Site Data					., , , ,						85.789
	rrier Height:	0.0 feet			М	edium 7	rucks:	75.3%	7.0%	17.7%	
Barrier Type (0-W	-	0.0				Heavy T	rucks:	60.4%	12.0%	27.6%	12.099
Centerline Dis		50.0 feet									
Centerline Dist.	to Observer:	50.0 feet		1	Noise S				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height (Above Pad):	5.0 feet				m Truci		.297	Grade Ad	liustmon	+ 0 0
Pa	ad Elevation:	0.0 feet			Hear	vy Truci	KS: E	.004	Grade Ad	jusunem	. 0.0
Ros	ad Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distai	ice (in	feet)		
1	Road Grade:	0.0%				Auto	os: 37	.000			
	Left View:	-90.0 degree	es		Mediu	m Truci	ks: 36	.760			
	Right View:	90.0 degree	es		Hear	vy Truci	ks: 36	5.783			
FHWA Noise Mode	el Calculations										
VehicleType	REMEL	Traffic Flow	Dista			Road	Fres		Barrier Att		rm Atten
Autos:	58.73	-1.77		1.8	-	-1.20		-4.65		000	0.00
Medium Trucks:	70.80	-17.83		1.9	-	-1.20		-4.87		000	0.00
Heavy Trucks:	77.97	-10.28		1.9	0	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	•									1	
VehicleType	Leq Peak Hou	, ,		Leq E	vening		Night		Ldn		NEL
Autos:	57.	-	55.3		53.7		50		57.0	-	58.
Medium Trucks:	53.		51.6		47.3		46		53.		54.
Heavy Trucks: Vehicle Noise:	68.		65.4 65.9		64.8		63 63		70.0		70. 70.
		-			64.8	'	63	.5	70.	3	70.
Centerline Distanc	ce to Noise Co	ntour (in feet)) 	70.0	dBA	65	dBA	-	60 dBA	55	dBA
			Ldn:	,,,	52		11	_	243		52 ⁴
	Lan: CNFI:				55		11		255		550
		Oi.			55			-	200		551

Wednesday, August 2, 2023

	FHWA-RI	0-77-108 HIGHW	AY NOIS	SE PREDIC	CTION MO	DEL (9/12/	2021)						
Road Nar	rio: HYP 2040 me: Arrowhed A ent: s/o Rialto A					lame: S. Ar mber: 1466	rowhead War 0	ehouse					
SITE	SPECIFIC IN	IPUT DATA			NC	ISE MOD	EL INPUTS						
Highway Data				Site Con	ditions (F	lard = 10, S	Soft = 15)						
Average Daily	Traffic (Adt):	7,547 vehicles		Autos: 15									
Peak Hou	r Percentage:	10.13%		Medium Trucks (2 Axles): 15									
Peak I	Hour Volume:	765 vehicles		He	avy Truck	s (3+ Axles): 15						
V	ehicle Speed:	25 mph		1/-1-1-1-									
Near/Far La	ane Distance:	68 feet		Vehicle Mix VehicleType Day Evening Night Daily									
Site Data				ven		tos: 71.9		,					
				.,	Au ledium Tru			15.9% 85.93% 17.7% 2.10%					
	arrier Height:	0.0 feet			eaium mu Heavy Tru			27.6% 11.97%					
Barrier Type (0-V	. ,	0.0			neavy IIu	CKS. 60.4	76 12.0%	21.0% 11.91%					
	ist. to Barrier:	50.0 feet		Noise S	ource Elev	vations (in	feet)						
	Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet					0.000							
						Medium Trucks: 2.297							
	. ,	5.0 feet		Heavy Trucks: 8.004 Grade Adjustment: 0.0									
	Pad Elevation:	0.0 feet		Lana Em	uivalant F	Distance (ir	a foot)						
Ro	oad Elevation:	0.0 feet		Lane Eq			i reet)						
	Road Grade:	0.0%			Autos:								
	Left View:	-90.0 degrees			m Trucks:								
	Right View:	90.0 degrees		Hear	vy Trucks:	36.783							
FHWA Noise Mod	lel Calculation	s		•									
VehicleType	REMEL		Distance		Road	Fresnel	Barrier Atte						
Autos		-1.11		.86	-1.20	-4.65							
Medium Trucks		-17.23		.90	-1.20	-4.87							
Heavy Trucks	77.97	-9.67	1	.90	-1.20	-5.43	3 0.00	0.000					
Unmitigated Nois	e Levels (with	out Topo and ba	rrier att	enuation)									
VehicleType	Leq Peak Hou	ır Leq Day	Leq	Evening	Leq N	ight	Ldn	CNEL					
Autos	: 58	.3 56.	0	54.3		50.7	58.3	58.7					
Medium Trucks	: 54	.3 52.	2	47.9		47.1	54.5	54.8					
Heavy Trucks	69	.0 66.	0	65.0		63.8	70.6	70.9					
Vehicle Noise	: 69	.5 66.	5	65.4		64.1	70.9	71.2					
Centerline Distan	ce to Noise Co	ontour (in feet)											
			0 dBA	65 dE		60 dBA	55 dBA						
		Ld		58 124			267 575						
		CNE	L:	60		130	280	604					

Wednesday, August 2, 2023

	FHWA-RD	0-77-108 HIGH	WAY N	NOISE	PREDIC	TION M	ODEL (9/12/2	021)			
						Project		S. Arr	owhead W	areho	use	
SITE	SPECIFIC IN	PUT DATA				N	OISE I	MODE	L INPUT	S		
Highway Data					Site Cond	ditions (Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	6,211 vehicle	es					Autos	: 15			
Peak Hour	Percentage:	10.13%			Med	dium Tru	icks (2	Axles)	: 15			
Peak H	lour Volume:	629 vehicles	3		Hea	avy Truc	ks (3+)	Axles)	: 15			
Ve	hicle Speed:	40 mph		-	Vehicle N	Ai.						
Near/Far La	ne Distance:	68 feet		H		cleType		Dav	Evening	Nig	ht	Daily
Site Data					*01111		utos:	71.99				86.85%
Par	rrier Height:	0.0 feet			Ме	dium Tr	ucks:	75.39	6 7.0%	17	7%	1.94%
Barrier Type (0-W		0.0			H	leavy Tr	ucks:	60.49	6 12.0%	27	.6%	11.21%
Centerline Di		50.0 feet		-								
Centerline Dist.		50.0 feet		-	Noise So				eet)			
Barrier Distance	to Observer:	0.0 feet				Autos		000				
Observer Height ((Above Pad):	5.0 feet				n Trucks		297				
	ad Elevation:	0.0 feet			Heav	y Trucks	8: 8.	004	Grade A	ajustn	nent:	0.0
Roa	ad Elevation:	0.0 feet			Lane Equ	iivalent	Distan	ce (in	feet)			
1	Road Grade:	0.0%				Autos	37.	.000				
	Left View:	-90.0 degree	es		Mediun	n Trucks	36.	760				
	Right View:	90.0 degree	es		Heav	y Trucks	36.	783				
FHWA Noise Mode	el Calculations	s										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresi	nel	Barrier At	ten	Bern	n Atten
Autos:	66.51	-3.95		1.8	36	-1.20		-4.65	0.	.000		0.000
Medium Trucks:	77.72	-20.47		1.9	90	-1.20		-4.87	0.	.000		0.000
Heavy Trucks:	82.99	-12.84		1.9	90	-1.20		-5.43	0.	.000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	r atter	nuation)							
VehicleType	Leq Peak Hou	ır Leq Day	,	Leq E	vening	Leq I	Night		Ldn		CN	EL
Autos:	63	.2	60.9		59.3		55.0	6	63	.2		63.7
Medium Trucks:	57	.9	55.9		51.6		50.8	3	58	.2		58.5
Heavy Trucks:	70	.8	67.8		66.8		65.	7	72	.4		72.7
Vehicle Noise:	71	.7	68.8		67.6		66.2	2	73	.1		73.4
Centerline Distance	ce to Noise Co	ntour (in feet)									
				70	dBA	65 (/BA		60 dBA		55 c	iBA
			Ldn:		80		172	!	37	1		799
		Ci	VEL:		84		181		39	0		840

	FHWA-RI	0-77-108 HIGH	WAY I	NOISE	PREDIC	TION MC	DEL	(9/12/2	021)				
	o: EA 2023 e: Arrowhed A nt: s/o Dwy. 2	ıv.				Project I Job Nu			owhead Wa	arehouse	•		
SITE S	SPECIFIC IN	IPUT DATA				NO	DISE	MODE	L INPUT	S			
Highway Data					Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	6,397 vehicl	es		Autos: 15								
Peak Hour	Percentage:	10.13%			Medium Trucks (2 Axles): 15								
Peak H	our Volume:	648 vehicle	s		He	avy Truck	(S (3+	Axles).	15				
Ve	hicle Speed:	40 mph			Vehicle I	Miv							
Near/Far Lai	ne Distance:	68 feet		H		icleType		Day	Evening	Night	Dailv		
Site Data					Autos: 71.9% 12.2% 15.9% 86								
Par	rier Height:	0.0 feet			Medium Trucks: 75.3% 7.0% 17.7% 1.949								
Barrier Type (0-W		0.0			Heavy Trucks: 60.4% 12.0% 27.6% 11.21%								
Centerline Dis		50.0 feet		-	Noise Source Elevations (in feet)								
Centerline Dist.	<u> </u>	. ,											
Barrier Distance	Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet					Autos: 0.000 Medium Trucks: 2.297							
Observer Height (Above Pad):	5.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Pa	d Elevation:	0.0 feet			пеач	ry Trucks.	٥	.004	Grade Au	jusuneni	. 0.0		
Roa	ad Elevation:	0.0 feet		1	Lane Eq	uivalent l	Distar	ice (in	feet)				
F	Road Grade:	0.0%				Autos:	37	.000					
	Left View:	-90.0 degre	es		Mediu	m Trucks:	36	.760					
	Right View:	90.0 degre	es		Heav	y Trucks:	36	.783					
FHWA Noise Mode	l Calculation	s											
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fres	nel	Barrier Att	en Bei	m Atten		
Autos:	66.51	-3.82		1.8		-1.20		-4.65		000	0.000		
Medium Trucks:	77.72	-20.34		1.9	-	-1.20		-4.87		000	0.000		
Heavy Trucks:	82.99	-12.71		1.9	0	-1.20		-5.43	0.0	000	0.000		
Unmitigated Noise													
	Leq Peak Hou			Leq E		Leq N	_		Ldn		NEL		
Autos:	63		61.1		59.4		55.	-	63.3		63.8		
Medium Trucks:	58		56.0		51.7		50		58.4		58.6		
Heavy Trucks: Vehicle Noise:	71		67.9		66.9 67.7		65 66	-	72.5	-	72.9 73.5		
					37.7		00.		70.		70.0		
Centerline Distanc	e to Noise Co	ontour (in feet)	70 (4D A	65 d	DΛ	Т.	60 dBA	55	dBA		
			Ldn:	700	81	65 U	17		378		815		

	FHWA-RD	-77-108 HIGH	MAY N	IOISE F	PREDIC	TION	IODEL	(9/12/2	021)		
Scenario Road Name Road Segmen	e: Arrowhed A	v.				.,		S. Arn 14660	owhead Wa	arehouse	
SITE S	PECIFIC IN	PUT DATA				1	NOISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard	= 10, S	oft = 15)		
Average Daily 1	raffic (Adt):	6,397 vehicle	es					Autos	15		
Peak Hour I	Percentage:	10.13%			Me	dium Ti	ucks (2	Axles)	15		
Peak Ho	our Volume:	648 vehicle	S		He	avy Tru	cks (3+	Axles)	: 15		
Veh	icle Speed:	40 mph		V	ehicle	Mix					
Near/Far Lar	e Distance:	68 feet		_		icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	71.99	6 12.2%	15.9%	85.17
Ran	rier Height:	0.0 feet			М	edium 7	rucks:	75.39	6 7.0%	17.7%	2.23
Barrier Type (0-Wa	all, 1-Berm):	0.0			1	Heavy 7	rucks:	60.49	6 12.0%	27.6%	12.60
Centerline Dis		50.0 feet		N	oise So	ource E	levatio	ns (in f	eet)		
Centerline Dist. t		50.0 feet				Auto		0.000	,		
Barrier Distance t		0.0 feet			Mediu	m Truck		2.297			
Observer Height (A	,	5.0 feet			Heav	vy Truck		3.004	Grade Ad	ljustmen	0.0
	d Elevation:	0.0 feet		<u> </u>							
	d Elevation:	0.0 feet		L	ane Eq	uivalen			feet)		
F	Road Grade:	0.0%				Auto		7.000			
	Left View:	-90.0 degre	es			m Truck		6.760			
	Right View:	90.0 degre	es		Heav	y Truck	is: 31	6.783			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dista			Road	Fre		Barrier At	_	rm Atte
Autos:	66.51	-3.91		1.86		-1.20		-4.65		000	0.0
Medium Trucks:	77.72	-19.73		1.90		-1.20		-4.87		000	0.0
Heavy Trucks:	82.99	-12.21		1.90		-1.20		-5.43	0.	000	0.0
VehicleType	Levels (witho Leg Peak Hou	-		attenu Leg Eve		100	Nicolat		Ldn		NEL
Autos:	63.		61.0	LOY EVE	59.3		Night 55	7	63.		63
Medium Trucks:	58.	-	56.6		52.3		51		59.	-	59
Heavy Trucks:	71.		68.4		67.4		66		73.	-	73
Vehicle Noise:	72.		69.4		68.2		66		73.		74
Centerline Distance	e to Noise Co	ntour (in feet)								
				70 dl		65	dBA		60 dBA	55	dBA
	Ldn:				87 188 405			87			

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOIS	E PREDIC	TION M	ODEL	(9/12/2	021)				
	o: EAP 2023 e: Arrowhed A nt: s/o Dwy. 2	Av.						: S. Arro : 14660	whead Wa	rehouse			
SITE S	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUTS	6			
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)				
Average Daily	Traffic (Adt):	6,583 vehicle	es					Autos:	15				
Peak Hour	Percentage:	10.13%			Me	dium Tri	icks (2	Axles):	15				
Peak H	our Volume:	667 vehicles	3		He	avy Truc	cks (3+	- Axles):	15				
Ve	hicle Speed:	40 mph			Vehicle I	Miss							
Near/Far Lai	ne Distance:	68 feet			VehicleType Day Evening Night L								
Site Data					Autos: 71.9% 12.2% 15.9%								
					Medium Trucks: 75.3% 7.0% 17.7% 2.22								
Barrier Type (0-W	rier Height:	0.0 feet 0.0				Heavy Ti		60.4%			12.56%		
Centerline Dis		50.0 feet											
Centerline Dist.		50.0 feet			Noise Sc				eet)				
Barrier Distance		0.0 feet				Auto		0.000					
Observer Height (5.0 feet				m Truck		2.297					
	ad Flevation:	0.0 feet			Heav	y Truck	s: 8	3.004	Grade Adj	ustment	: 0.0		
	d Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)				
	Road Grade:	0.0%				Auto	s: 3	7.000					
-	Left View:	-90.0 degree	es		Mediu	m Truck	s: 3	6.760					
	Right View:	90.0 degree			Heav	y Truck	s: 3	6.783					
FHWA Noise Mode	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fre		Barrier Atte		m Atten		
Autos:	66.51			1.8		-1.20		-4.65	0.0		0.000		
Medium Trucks:	77.72			1.9		-1.20		-4.87	0.0		0.000		
Heavy Trucks:	82.99	-12.10		1.9	90	-1.20		-5.43	0.0	00	0.000		
Unmitigated Noise	Levels (with	out Topo and	barrie	er atte	nuation)								
VehicleType	Leq Peak Hou	ur Leq Day	'	Leq E	vening	Leq	Night		Ldn	C	NEL		
Autos:	63	3.4	61.1		59.4		55	.8	63.4		63.8		
Medium Trucks:			56.7		52.4		51		59.1		59.3		
Heavy Trucks:			68.6		67.5		66		73.2		73.5		
Vehicle Noise:	72	2.4	69.5		68.3		66	i.9	73.7		74.1		
Centerline Distanc	e to Noise Co	ontour (in feet)											
				70	dBA	65	dBA	6	60 dBA	55	dBA		
			Ldn:		89		19		412		889		
		CI	VEL:		93		20	11	433		934		

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY I	NOISE	E PREDIC	TION MO	ODEL (9/12/2	021)			
	o: EAC 2023 e: Arrowhed A nt: s/o Dwy. 2	Av.				Project I Job Nu	Name: : ımber:			Wareh	ouse	
SITE S	SPECIFIC IN	IPUT DATA				N	OISE N	/ODE	L INP	UTS		
Highway Data					Site Cond	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	6,643 vehicle	es					Autos	: 15			
Peak Hour	Percentage:	10.13%			Med	dium Tru	cks (2 /	Axles)	: 15			
Peak H	our Volume:	673 vehicles	3		Hea	avy Truci	ks (3+ /	Axles)	: 15			
Ve	hicle Speed:	40 mph		1	Vehicle N	Niv						
Near/Far Lai	ne Distance:	68 feet		ł		cleType		Dav	Evenii	na Ni	ght	Daily
Site Data					10111			71.99		-	5.9%	86.85%
Par	rier Heiaht:	0.0 feet			Me	dium Tru	ucks:	75.39	6 7.0	0% 1	7.7%	1.94%
Barrier Type (0-W		0.0			H	leavy Tru	ucks:	60.49	6 12.0)% 2	7.6%	11.21%
Centerline Dis		50.0 feet										
Centerline Dist.		50.0 feet		-	Noise So				eet)			
Barrier Distance		0.0 feet				Autos		000				
Observer Height (Above Pad):	5.0 feet				n Trucks		297				
	d Elevation:	0.0 feet			Heav	y Trucks	: 8.	004	Grade	Adjust	ment:	0.0
Ros	d Elevation:	0.0 feet		İ	Lane Equ	iivalent	Distan	ce (in	feet)			
F	Road Grade:	0.0%		İ		Autos	: 37.	000				
	Left View:	-90.0 degree	es		Mediun	n Trucks	: 36.	760				
	Right View:	90.0 degree			Heav	y Trucks	36.	783				
FHWA Noise Mode	l Calculation	s										
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresr	iel	Barrier	Atten	Berr	n Atten
Autos:	66.51	-3.66		1.8	36	-1.20		-4.65		0.000		0.000
Medium Trucks:	77.72	-20.18		1.9	90	-1.20		-4.87		0.000		0.000
Heavy Trucks:	82.99	-12.55		1.9	90	-1.20		-5.43		0.000		0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r atte	nuation)							
VehicleType	Leq Peak Ho	ır Leq Day	,	Leq E	vening	Leq N	light		Ldn		C٨	IEL
Autos:	63	1.5	61.2		59.6		55.9)		63.5		64.0
Medium Trucks:	58	3.2	56.2		51.8		51.1	l	:	58.5		58.8
Heavy Trucks:	71	.1	68.1		67.1		66.0)		72.7		73.0
Vehicle Noise:	72	2.0	69.1		67.9		66.5	5		73.3		73.7
Centerline Distance	e to Noise C	ontour (in feet)									
				70	dBA	65 a	IBA .		60 dBA		55 (dBA
			Ldn:		84		180			388		836
		C	VEL:		88		189			408		878

	FHWA-RE	0-77-108 HIGH	IWAY	NOISE	PREDIC	CTION M	ODEL	(9/12/2	021)		
	io: HY 2040 e: Arrowhed A nt: s/o Dwy. 2	iv.					Name: umber:		owhead Wa	arehous	Э
SITE S	SPECIFIC IN	IPUT DATA				Ν	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard :	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	7,308 vehicle	es					Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	dium Tr	ıcks (2	Axles)	: 15		
Peak H	our Volume:	740 vehicles	S		He	avy Tru	cks (3+	Axles)	: 15		
Ve	hicle Speed:	40 mph		-	/ehicle	Miv					
Near/Far Lai	ne Distance:	68 feet		H.		icleType		Day	Evening	Night	Daily
Site Data							Autos:	71.99		15.9%	
Par	rier Heiaht:	0.0 feet			М	edium T	rucks:	75.39	6 7.0%	17.7%	1.94%
Barrier Type (0-W		0.0 1001				Heavy T	rucks:	60.49	6 12.0%	27.6%	11.21%
Centerline Dis	. ,	50.0 feet		L							
Centerline Dist.		50.0 feet		- /	voise S	ource El			eet)		
Barrier Distance	to Observer:	0.0 feet			11-15	Auto m Truck		.000			
Observer Height (Above Pad):	5.0 feet				m Truck v Truck		.004	Grade Ad	iustmon	t 0.0
Pa	ad Elevation:	0.0 feet			пеа	y Huck	s. c	.004	Grade Ad	Justineri	i. 0.0
Roa	ad Elevation:	0.0 feet		1	ane Eq	uivalent	Distar	nce (in	feet)		
F	Road Grade:	0.0%				Auto	s: 37	.000			
	Left View:	-90.0 degree	es			m Truck		.760			
	Right View:	90.0 degree	es		Hear	y Truck	s: 36	.783			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	66.51	-3.24		1.86		-1.20		-4.65		000	0.00
Medium Trucks:	77.72	-19.76		1.90	-	-1.20		-4.87		000	0.00
Heavy Trucks:	82.99	-12.14		1.90)	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise											
VehicleType	Leq Peak Hou			Leg E			Night		Ldn	_	NEL
Autos:	63		61.6		60.0		56		63.9		64.
Medium Trucks:	58		56.6		52.3		51		58.9	-	59.2
Heavy Trucks: Vehicle Noise:	71 72		68.5 69.6		67.5 68.3		66 66		73.°		73.4
Centerline Distanc	e to Noise Co	ontour (in feet)								
Jones III Distanc		mou. (m reet	_	70 c	IBA	65	dBA		60 dBA	55	5 dBA
			Ldn:		89		19	2	413		890
	CNEL:				94 202 434 93						

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	CTION	MODEL	(9/12/2	021)		
	io: EAPC 2023 ne: Arrowhed A nt: s/o Dwy. 2	v.					t Name: Number:		whead Wa	arehouse	
SITE :	SPECIFIC IN	PUT DATA					NOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	6,829 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium T	rucks (2	Axles):	15		
Peak H	lour Volume:	692 vehicles	s		He	eavy Tro	ıcks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		ŀ	Vehicle	Miv					
Near/Far La	ne Distance:	68 feet		H		icleTyp	е	Day	Evening	Night	Daily
Site Data						,,	Autos:	71.9%	-		85.28
Rai	rrier Height:	0.0 feet			M	ledium '	Trucks:	75.3%	7.0%	17.7%	2.21
Barrier Type (0-W	-	0.0				Heavy	Trucks:	60.4%	12.0%	27.6%	12.51
Centerline Dis		50.0 feet			Noise S		lovetio	no (in f	004)		
Centerline Dist.	to Observer:	50.0 feet		ŀ	Noise 3	Aut		0.000	eet)		
Barrier Distance	to Observer:	0.0 feet			Modis	m Truc		2.297			
Observer Height (Above Pad):	5.0 feet				vy Truc		3.004	Grade Ad	liuetmani	- 0.0
Pa	ad Elevation:	0.0 feet		L	пеа	vy IIuc	18. C	.004	Orade Ad	jusunone	- 0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivaler	ıt Distaı	nce (in	feet)		
I	Road Grade:	0.0%				Aut	os: 37	7.000			
	Left View:	-90.0 degree	es		Mediu	m Truc	ks: 36	6.760			
	Right View:	90.0 degree	es		Hea	vy Truc	ks: 36	6.783			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Attei
Autos:	66.51	-3.62		1.8	36	-1.20		-4.65	0.0	000	0.0
Medium Trucks:	77.72	-19.48		1.9	90	-1.20		-4.87	0.0	000	0.0
Heavy Trucks:	82.99	-11.95		1.9	90	-1.20		-5.43	0.0	000	0.0
Unmitigated Noise	e Levels (witho	out Topo and	barrie	er atter	nuation)						
VehicleType	Leq Peak Hou			Leq E	vening		Night		Ldn		NEL
Autos:	63.		61.3		59.6		56		63.0		64
Medium Trucks:	58.	-	56.9		52.5		51		59.	_	59
Heavy Trucks:	71.	-	68.7		67.7		66		73.		73
Vehicle Noise:	72.	-	69.7		68.4		67	.0	73.	9	74
Centerline Distanc	ce to Noise Co	ntour (in feet)	70	dBA	-	: dDA		eo alba		dD1
			I dn:	70	<i>aBA</i> 91	68	6 dBA 19	_	60 dBA 422		dBA
			Lan: NFI:		91 95		19 20	-	422		90 95
		Ci	VEL.		95		20	О	443	•	95

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MO	DDEL	(9/12/20	021)		
Road Na	rio: HYP 2040 ne: Arrowhed A ent: s/o Dwy. 2	Av.						: S. Arro : 14660	whead Wa	arehouse	1
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	ft = 15)		
Average Daily	Traffic (Adt):	7,494 vehicle	:S					Autos:	15		
Peak Hou	r Percentage:	10.13%			Me	dium Tru	cks (2	Axles):	15		
Peak	Hour Volume:	759 vehicles	5		He	avy Truc	ks (3+	- Axles):	15		
V	ehicle Speed:	40 mph		-	Vehicle I	Miv					
Near/Far L	ane Distance:	68 feet				icleType		Dav	Evening	Night	Daily
Site Data							utos:	71.9%	-	15.9%	,
D.	arrier Height:	0.0 feet			Me	edium Tri	ıcks:	75.3%	7.0%	17.7%	
Barrier Type (0-1		0.0			F	leavy Tru	ıcks:	60.4%	12.0%	27.6%	12.39%
,, ,	ist to Barrier:	50.0 feet									
Centerline Dist		50.0 feet		-	Noise Sc				et)		
Barrier Distance	to Observer:	0.0 feet				Autos		0.000			
Observer Height	(Above Pad):	5.0 feet				n Trucks		2.297	0		
	Pad Elevation:	0.0 feet			Heav	y Trucks	: 1	3.004	Grade Ad	justment	0.0
Ro	ad Elevation:	0.0 feet			Lane Equ	uivalent	Dista	nce (in i	eet)		
	Road Grade:	0.0%		ĺ		Autos	: 3	7.000			
	Left View:	-90.0 degree	:S		Mediur	n Trucks	: 3	6.760			
	Right View:	90.0 degree	:S		Heav	y Trucks	: 3	6.783			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre.		Barrier Att		m Atten
Autos		-3.21		1.8		-1.20		-4.65		000	0.000
Medium Trucks				1.9		-1.20		-4.87		000	0.000
Heavy Trucks	82.99	-11.59		1.9	90	-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er attei	nuation)						
VehicleType	Leq Peak Hou			Leq E	vening	Leq N	_		Ldn		NEL
Autos	-		61.7		60.0		56		64.0	-	64.4
Medium Trucks			57.2		52.9		52		59.	-	59.8
Heavy Trucks			69.1		68.1		66		73.		74.0
Vehicle Noise	. 72	2.9	70.0		68.8		67	'.4	74.	3	74.6
Centerline Distar	ce to Noise Co	ontour (in feet)									
			L	70	dBA	65 a			i0 dBA		dBA
			Ldn:		96		20		446		961
		CI	VEL:		101		21	8	469)	1,010

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9/12/2	021)		
						Project i		S. Arro	owhead Wa	arehou	se
SITE	SPECIFIC IN	IPUT DATA				N	OISE I	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	4,562 vehicle	es					Autos.	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	cks (2	Axles).	15		
Peak H	lour Volume:	462 vehicles	3		Hea	avy Truc	ks (3+)	Axles).	15		
Ve	hicle Speed:	25 mph		-	Vehicle N	Niv					
Near/Far La	ne Distance:	33 feet		ł		cleType		Dav	Evening	Night	Daily
Site Data							utos:	71.9%			% 86.85%
Pa	rrier Height:	0.0 feet			Me	dium Tr	ucks:	75.3%		17.7	% 1.94%
Barrier Type (0-W	-	0.0			F	leavy Tr	ucks:	60.4%	6 12.0%	27.6	% 11.21%
Centerline Di		44.0 feet		-				<i></i>			
Centerline Dist.	to Observer:	44.0 feet			Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		000			
Observer Height	(Above Pad):	5.0 feet				n Trucks		297	Grade Ad	liuotmo	n4: 0 0
Pi	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.	004	Grade Ad	jusune	nt. 0.0
Ro	ad Elevation:	0.0 feet			Lane Equ	iivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%		ĺ		Autos	: 41.	094			
	Left View:	-90.0 degree	es		Mediur	n Trucks	: 40.	879			
	Right View:	90.0 degree	es		Heav	y Trucks	: 40.	900			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Att	ten B	erm Atten
Autos:	58.73	-3.25		1.1	17	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	70.80	-19.77		1.3	21	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	77.97	-12.14		1.3	21	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	er atte	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	,	Leq E	vening	Leq N	Vight		Ldn		CNEL
Autos:	55	i.5	53.2		51.5		47.9	9	55.	5	55.9
Medium Trucks:	51	.0	49.0		44.6		43.9	9	51.	3	51.6
Heavy Trucks:	65	i.8	62.8		61.8		60.	7	67.	4	67.7
Vehicle Noise:	66	i.3	63.4		62.3		61.0)	67.	8	68.1
Centerline Distant	ce to Noise Co	ontour (in feet,)								
				70	dBA	65 c	IBA	-	60 dBA		55 dBA
			Ldn:		31		67	_	145	5	313
		CI	VEL:		33		71		152	2	328

	FHWA-RE	D-77-108 HIGH	WAY NC	ISE I	PREDIC	TION MO	DDEL	(9/12/2	021)		
	o: EA 2023 e: Sierra Wy. at: n/o Rialto A	ıv.						S. Arr	owhead Wa	arehou	se
SITE S	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions (Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	4,699 vehicle	es					Autos	: 15		
Peak Hour I	Percentage:	10.13%			Me	dium Tru	cks (2	Axles)	: 15		
Peak He	our Volume:	476 vehicles	3		He	avy Truc	ks (3+	Axles)	: 15		
Vel	nicle Speed:	25 mph		1/	ehicle l	Miv					
Near/Far Lar	ne Distance:	33 feet		-		icleType		Day	Evening	Night	Daily
Site Data					1011		utos:	71.99	-	15.9	
	ula u Halada	0.0 feet			Me	edium Tru		75.39		17.7	,
Barrier Type (0-Wa	rier Height:	0.0 reet 0.0				Heavy Tru		60.49	6 12.0%	27.6	% 11.21%
Centerline Dis		44.0 feet									
Centerline Dist. t		44.0 feet		Λ	loise Sc	ource Ele			eet)		
Barrier Distance t		0.0 feet				Autos		0.000			
Observer Height (/		5.0 feet				m Trucks	-	.297			
	d Elevation:	0.0 feet			Heav	ry Trucks	: 8	3.004	Grade Ad	justme	nt: 0.0
	d Elevation:	0.0 feet		L	ane Eq	uivalent	Dista	nce (in	feet)		
F	Road Grade:	0.0%				Autos	: 4	.094			
	Left View:	-90.0 degree	s		Mediui	m Trucks	: 40	.879			
	Right View:	90.0 degree	es.		Heav	y Trucks	: 40	0.900			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan			Road	Fres		Barrier Att		erm Atten
Autos:	58.73	-3.12		1.17		-1.20		-4.61		000	0.00
Medium Trucks:	70.80			1.21		-1.20		-4.87		000	0.000
Heavy Trucks:	77.97			1.21		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise								_		1	O. / E/
	Leq Peak Hou			eq Ev	ening	Leq N			Ldn	1	CNEL
Autos:	55		53.3		51.6		48		55.	-	56.0
Medium Trucks:	51		49.1		44.8		44		51.		51.7
Heavy Trucks: Vehicle Noise:	66 66		62.9 63.5		61.9 62.4		60		67. 67.		67.8 68.2
Centerline Distanc	e to Noise Co	ontour (in feet)								
				70 d	BA.	65 a	IBA		60 dBA		55 dBA
			Ldn:		32	00 0	6	9	148	,	319

	FHWA-RD	-77-108 HIGH	MAY N	NOISE F	PREDIC	CTION	MODEL	(9/12/2	021)		
Road Nam	io: E+P ne: Sierra Wy. nt: n/o Rialto A	<i>I</i> .					t Name: Vumber:		whead Wa	arehous	е
SITE :	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Cor	nditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	4,643 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium T	rucks (2	Axles):	15		
Peak H	lour Volume:	470 vehicles	3		He	eavy Tru	icks (3+	Axles):	15		
Ve	hicle Speed:	25 mph		V	ehicle	Miv					
Near/Far La	ne Distance:	33 feet		ľ		icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.99	6 87.089
Bai	rrier Heiaht:	0.0 feet			М	ledium 1	rucks:	75.3%	7.0%	17.79	6 1.909
Barrier Type (0-W		0.0				Heavy 1	rucks:	60.4%	12.0%	27.69	6 11.029
Centerline Dis	st. to Barrier:	44.0 feet		N	loise Si	ource F	levation	s (in f	oet)		
Centerline Dist.	to Observer:	44.0 feet			0136 01	Auto		.000	JC1)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Trucl		.297			
Observer Height (Above Pad):	5.0 feet				vy Truci		.004	Grade Ad	liustmer	nt: 0 0
Pa	ad Elevation:	0.0 feet				•				,	0.0
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	ce (in	feet)		
ı	Road Grade:	0.0%				Auto		.094			
	Left View:	-90.0 degree	es			m Truci		.879			
	Right View:	90.0 degree	es		Hear	vy Truci	ks: 40	.900			
FHWA Noise Mode	el Calculations			- '							
VehicleType	REMEL	Traffic Flow	Dist	ance		Road	Fres		Barrier Att		erm Atten
Autos:	58.73	-3.16		1.17		-1.20		-4.61		000	0.00
Medium Trucks:	70.80	-19.77		1.21		-1.20		-4.87		000	0.00
Heavy Trucks:	77.97	-12.14		1.21		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise								,			
	Leq Peak Hou			Leq Ev			Night		Ldn		CNEL
Autos:	55.	-	53.3		51.6		48.	-	55.	-	56.
Medium Trucks:	51.	-	49.0		44.6		43.		51.3		51.
Heavy Trucks: Vehicle Noise:	65. 66.		62.8 63.4		61.8		60.		67.4		67. 68.
Centerline Distance		•			32.0				07	-	
Centernile Distant	e to Moise Co.	inoui (III leet)		70 di	BA	65	dBA	(60 dBA	5	5 dBA
			Ldn:		31		6	7	145	5	313
		CI	NEL:		33		7	1	152	2	328

Wednesday, August 2, 2023

	FHWA-RI	0-77-108 HIGHW <i>A</i>	Y NOIS	E PREDIC	CTION MO	DEL (9/12/:	2021)	
Road Nar	rio: EAP 2023 me: Sierra Wy. ent: n/o Rialto A	v.				lame: S. Ari mber: 1466	rowhead War)	ehouse
SITE	SPECIFIC IN	IPUT DATA			NC	ISE MOD	EL INPUTS	
Highway Data				Site Con	ditions (F	lard = 10, S	oft = 15)	
Average Daily	Traffic (Adt):	4,779 vehicles				Autos	s: 15	
,	r Percentage:	10.13%		Ме	dium Truc	ks (2 Axles): 15	
	Hour Volume:	484 vehicles		He	avy Truck	s (3+ Axles): 15	
V	ehicle Speed:	25 mph						
	ane Distance:	33 feet		Vehicle		1 5	1	
	and Biotaneo.	00 1001		Veh	icleType	Day		Night Daily
Site Data						tos: 71.9		15.9% 87.08%
	arrier Height:	0.0 feet			edium Tru			17.7% 1.90%
Barrier Type (0-V	Vall, 1-Berm):	0.0		,	Heavy Tru	cks: 60.4	% 12.0%	27.6% 11.02%
Centerline D	ist. to Barrier:	44.0 feet		Noise So	ource Elev	ations (in	feet)	
Centerline Dist	to Observer:	44.0 feet			Autos:	0.000	,	
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks:	2.297		
Observer Height	(Above Pad):	5.0 feet		Heav	y Trucks:	8.004	Grade Adju	stment: 0.0
F	Pad Elevation:	0.0 feet			*			
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent E	Distance (in	feet)	
	Road Grade:	0.0%			Autos:	41.094		
	Left View:	-90.0 degrees		Mediu	m Trucks:	40.879		
	Right View:	90.0 degrees		Heav	y Trucks:	40.900		
FHWA Noise Mod								
VehicleType	REMEL		Distance		Road	Fresnel	Barrier Atter	
Autos		-3.04		17	-1.20	-4.61		
Medium Trucks		-19.64		21	-1.20	-4.87		
Heavy Trucks		-12.01		21	-1.20	-5.50	0.00	0.000
Unmitigated Nois								
VehicleType	Leq Peak Hou			Evening	Leq N	•	Ldn	CNEL
Autos	: 55	.7 53.	4	51.7		48.1	55.7	56.1
Medium Trucks	: 51	.2 49.	1	44.8		44.0	51.4	51.7
Heavy Trucks	66	.0 62.	9	61.9		60.8	67.5	67.8
Vehicle Noise	: 66	.5 63.	5	62.4		61.1	67.9	68.2
Centerline Distan	ce to Noise Co	ontour (in feet)	70	-104	05 -11	24	00 -ID4	55 -IDA
		I di		dBA 32	65 dE		60 dBA 148	55 dBA
		Lai CNFI		32		69 72	148 155	319
		CNEL		33		12	155	335

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MC	DEL (9/12/2	021)		
Road Nam	io: EAC 2023 ne: Sierra Wy. nt: n/o Rialto A						lame:	S. Arro	whead Wa	arehous	3e
SITE	SPECIFIC IN	IPUT DATA				NO	DISE N	/IODE	L INPUT	S	
Highway Data					Site Cond	litions (l	Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	4,883 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Med	dium Trud	cks (2 /	(xles	15		
Peak H	lour Volume:	495 vehicles	3		Hea	avy Truck	(S (3+ A	(xles	15		
Ve	hicle Speed:	25 mph		H	Vehicle N	liv					
Near/Far La	ne Distance:	33 feet		F		cleType		Dav	Evening	Night	Daily
Site Data					*01111			71.9%			% 86.85%
Pa	rrier Height:	0.0 feet			Ме	dium Tru		75.3%		17.79	% 1.94%
Barrier Type (0-W		0.0			H	leavy Tru	icks:	60.4%	12.0%	27.69	% 11.21%
Centerline Di		44.0 feet									
Centerline Dist.	to Observer:	44.0 feet		Ļ	Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:		000			
Observer Height	(Above Pad):	5.0 feet				n Trucks:		297			
	ad Elevation:	0.0 feet			Heav	/ Trucks:	8.0	004	Grade Ad	justmei	nt: 0.0
Ro	ad Elevation:	0.0 feet		Ī	Lane Equ	ivalent l	Distan	e (in	feet)		
	Road Grade:	0.0%		Ī		Autos:	41.	094			
	Left View:	-90.0 degree	es		Mediun	Trucks:	40.	879			
	Right View:	90.0 degree	es		Heav	Trucks:	40.	900			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresr	el	Barrier Att	en B	erm Atten
Autos:	58.73	-2.95		1.1	7	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	70.80	-19.47		1.2	21	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	77.97	-11.85		1.2	21	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	r atter	nuation)						
VehicleType	Leq Peak Hou	ur Leq Day	,	Leq E	vening	Leq N	light		Ldn	(CNEL
Autos:	55	5.8	53.5		51.8		48.2		55.	3	56.2
Medium Trucks:	51	.3	49.3		44.9		44.2		51.	ŝ	51.9
Heavy Trucks:	66	6.1	63.1		62.1		60.9)	67.	7	68.0
Vehicle Noise:	66	6.6	63.7		62.5		61.3	3	68.	1	68.4
Centerline Distant	ce to Noise Co	ontour (in feet,)								
			T	70	dBA	65 d	BA	- (60 dBA	5	55 dBA
			Ldn:		33		70		152	!	327
		CI	VEL:		34		74		159)	343

	FHWA-RI	D-77-108 HIGH	łWAY	' NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
Road Nam	io: HY 2040 le: Sierra Wy. nt: n/o Rialto A	ıv.						S. Arro 14660	owhead Wa	arehouse	
SITE S	SPECIFIC IN	IPUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	5,371 vehicl	es					Autos:	: 15		
Peak Hour	Percentage:	10.13%			Me	edium Tr	ucks (2	Axles).	: 15		
Peak H	lour Volume:	544 vehicle	s		He	eavy Tru	cks (3+	Axles).	: 15		
Ve	hicle Speed:	25 mph		-	Vehicle	Mix					
Near/Far La	ne Distance:	33 feet		-		icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	6 12.2%	15.9%	86.85%
Bai	rrier Height:	0.0 feet			M	ledium T	rucks:	75.3%	6 7.0%	17.7%	1.94%
Barrier Type (0-W		0.0				Heavy T	rucks:	60.4%	6 12.0%	27.6%	11.21%
Centerline Dis	st. to Barrier:	44.0 feet			Noise S	ourco E	lovatio	ne (in f	innt)		
Centerline Dist.	to Observer:	44.0 feet		ľ	WOISE S	Auto		0.000	eei)		
Barrier Distance	to Observer:	0.0 feet			Madiu	m Truck		.297			
Observer Height (Above Pad):	5.0 feet				vy Truck		.004	Grade Ad	liustmen	r 0.0
Pa	ad Elevation:	0.0 feet								,	
Ros	ad Elevation:	0.0 feet			Lane Eq			_ •	feet)		
I	Road Grade:	0.0%				Auto		.094			
	Left View:	-90.0 degre	es			m Truck).879			
	Right View:	90.0 degre	es		Hea	vy Truck	s: 40	0.900			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		rm Atten
Autos:	58.73	-2.54		1.1		-1.20		-4.61		000	0.00
Medium Trucks:	70.80	-19.06		1.2		-1.20		-4.87		000	0.00
Heavy Trucks:	77.97	-11.43		1.2		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou		_	Leq E	vening		Night	_	Ldn		NEL
Autos:	56		53.9		52.2		48		56.2	_	56.0
Medium Trucks:	51 66		49.7 63.5		45.4 62.5		44 61		52.0 68.1		52.3 68.4
Heavy Trucks: Vehicle Noise:	67		64.1		63.0		61		68.		68.8
Centerline Distance	e to Noise Co	ontour (in fee	t)								
		(<u></u>	70 (dBA	65	dBA	-	60 dBA	55	dBA
			Ldn:		35		7	5	162		348
	CNEL:				37 79 170 3					366	

	o: EAPC 2023 e: Sierra Wy.	3					: Name: lumber:		owhead Wa	arehouse	
Road Segmer	nt: n/o Rialto A	iV.									
SITE S	SPECIFIC IN	IPUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	: 10, S	oft = 15)		
Average Daily	Traffic (Adt):	4,963 vehicle	es					Autos.	15		
Peak Hour	Percentage:	10.13%			Me	edium Tr	ucks (2	Axles).	: 15		
Peak H	our Volume:	503 vehicles	3		He	avy Tru	cks (3+	Axles).	: 15		
Vel	hicle Speed:	25 mph			Vehicle i	Miss					
Near/Far Lar	ne Distance:	33 feet		H		icleType		Dav	Evenina	Niaht	Daily
Site Data					V C//		Autos:	71.99	- 5	15.9%	
	wiew Heimh*	0.0 feet		-	М	edium T		75.39		17.7%	1.909
Barrier Type (0-W	rier Height:	0.0 feet 0.0				Heavy T		60.49			11.039
Centerline Dis		0.0 44.0 feet		L							
Centerline Dist.		44.0 feet		1	Noise So	ource E	levation	ıs (in f	eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height (5.0 feet				m Truck		.297			
	ad Flevation:	0.0 feet			Heav	vy Truck	s: 8	.004	Grade Ad	justment	0.0
	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto		.094	,		
•	Left View:	-90.0 degree	24		Mediu	m Truck	s: 40	.879			
	Right View:	90.0 degree			Heav	vy Truck	s: 40	.900			
FHWA Noise Mode	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres		Barrier Att	en Ber	m Atten
Autos:	58.73	-2.87		1.1		-1.20		-4.61		000	0.00
Medium Trucks:	70.80	-19.47		1.2		-1.20		-4.87		000	0.00
Heavy Trucks:	77.97	-11.85		1.2		-1.20		-5.50	0.0	000	0.00
Inmitigated Noise											
VehicleType Autos:	Leq Peak Hou	- 1 - 7		Leq E	vening		Night		Ldn	_	VEL
Medium Trucks:	55		53.6		51.9		48.		55.8		56.
	51		49.3		44.9		44.	_	51.6	-	51.
Heavy Trucks: Vehicle Noise:	66 66		63.1 63.7		62.1 62.6		60. 61.	_	67.7		68. 68.
Centerline Distanc	e to Noise Co	ontour (in feet)								
	. ,	, , ,		70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		33		7	1	152		32

Wednesday, August 2, 2023

	FHWA-RI	0-77-108 HIGHW <i>A</i>	AY NOIS	E PREDIC	CTION MO	DEL (9/12/	2021)	
Road Nar	rio: HYP 2040 ne: Sierra Wy. ent: n/o Rialto A	v.				lame: S. Ari mber: 1466	rowhead War 0	ehouse
SITE	SPECIFIC IN	IPUT DATA			NC	ISE MOD	EL INPUTS	
Highway Data				Site Con	ditions (F	lard = 10, S	Soft = 15)	
Average Daily	Traffic (Adt):	5,452 vehicles				Autos	s: 15	
Peak Hou	Percentage:	10.13%		Me	dium Truc	ks (2 Axles): 15	
Peak I	Hour Volume:	552 vehicles		He	avy Truck	s (3+ Axles): 15	
Ve	ehicle Speed:	25 mph						
Near/Far La	ane Distance:	33 feet		Vehicle		D	E-maine.	Nints Daile
8 ′′ 8 ′				ven	icleType	Day		Night Daily
Site Data					Au edium Tru	itos: 71.9 cks: 75.3		15.9% 87.05%
	rrier Height:	0.0 feet						17.7% 1.91%
Barrier Type (0-V	. ,	0.0		,	Heavy Tru	cks: 60.4	% 12.0%	27.6% 11.04%
	ist. to Barrier:	44.0 feet		Noise So	ource Elev	vations (in	feet)	
Centerline Dist.		44.0 feet			Autos:	0.000		
Barrier Distance		0.0 feet		Mediu	m Trucks:	2.297		
Observer Height	. ,	5.0 feet		Heav	y Trucks:	8.004	Grade Adju	stment: 0.0
-	ad Elevation:	0.0 feet			*			
Ro	ad Elevation:	0.0 feet		Lane Eq		Distance (in	ı feet)	
	Road Grade:	0.0%			Autos:			
	Left View:	-90.0 degrees			m Trucks:			
	Right View:	90.0 degrees		Heav	y Trucks:	40.900		
FHWA Noise Mod								
VehicleType	REMEL		Distance		Road	Fresnel	Barrier Atter	
Autos:		-2.47		17	-1.20	-4.61		
Medium Trucks:		-19.06		21	-1.20	-4.87		
Heavy Trucks:		-11.43		21	-1.20	-5.50	0.00	0.000
Unmitigated Nois								
VehicleType	Leq Peak Hou			Evening	Leq N	•	Ldn	CNEL
Autos:			-	52.3		48.7	56.2	56.7
Medium Trucks:				45.4		44.6	52.0	52.3
Heavy Trucks:	66	.5 63.	5	62.5		61.4	68.1	68.4
Vehicle Noise.	67	.1 64.	1	63.0		61.7	68.5	68.8
Centerline Distan	ce to Noise Co	ontour (in feet)	70	-104	05 -11		00 -104	55 -IDA
		1 -1) dBA	65 dE		60 dBA	55 dBA
		Ldr CNFI		35 37		75 79	162 170	349 366
		CNEL	L	37		79	170	366

Wednesday, August 2, 2023

	FHWA-RD	0-77-108 HIGH	IWAY	NOISE	E PREDIC	TION N	MODEL	(9/12/2	2021)			
Scenario: Road Name: Road Segment:	Sierra Wy.	v.				.,	t Name: lumber:		owhead W	arehou	ise	
SITE SE	PECIFIC IN	PUT DATA				1	NOISE	MODI	EL INPUT	S		
Highway Data					Site Con	ditions	(Hard:	= 10, S	oft = 15)			
Average Daily Tr	affic (Adt):	2,933 vehicle	es					Autos	: 15			
Peak Hour Pe	ercentage:	10.13%			Me	dium Tı	ucks (2	Axles,	: 15			
Peak Hou	ır Volume:	297 vehicles	s		He	avy Tru	cks (3+	Axles,	: 15			
Vehic	cle Speed:	40 mph		-	Vehicle I	Miv						
Near/Far Lane	Distance:	33 feet		-		icleType	2	Day	Evening	Nigh	ıt	Daily
Site Data					*07.		Autos:	71.9		15.9	_	86.85%
Parri	er Height:	0.0 feet			Me	edium 7	rucks:	75.39	% 7.0%	17.7	7%	1.94%
Barrier Type (0-Wal		0.0			F	Heavy 7	rucks:	60.49	% 12.0%	27.6	8%	11.21%
Centerline Dist.		44.0 feet										
Centerline Dist. to		44.0 feet		-	Noise Sc				leet)			
Barrier Distance to	Observer:	0.0 feet				Auto		.000				
Observer Height (Al	ove Pad):	5.0 feet				m Truck		.297	0			
• ,	Elevation:	0.0 feet			Heav	y Truck	s: 8	.004	Grade Ad	ijustme	ent: ().0
Road	Elevation:	0.0 feet		ĺ	Lane Eq	uivalen	t Distar	ice (in	feet)			
Ro	ad Grade:	0.0%		ĺ		Auto	s: 41	.094				
	Left View:	-90.0 degree	es		Mediui	m Truck	s: 40	.879				
F	Right View:	90.0 degree	es		Heav	y Truck	s: 40	.900				
FHWA Noise Model	Calculation	S										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier At	ten E	Berm	Atten
Autos:	66.51	-7.21		1.1	17	-1.20		-4.61	0.	000		0.000
Medium Trucks:	77.72	-23.73		1.3	21	-1.20		-4.87	0.	000		0.000
Heavy Trucks:	82.99	-16.10		1.2	21	-1.20		-5.50	0.	000		0.000
Unmitigated Noise L	evels (with	out Topo and	barrie	er atte	nuation)							
	eq Peak Hou	ır Leq Day	/	Leq E	vening	Leq	Night		Ldn		CNE	ΞL
Autos:	59		57.0		55.3		51		59.			59.7
Medium Trucks:	54		51.9		47.6		46	-	54.	-		54.5
Heavy Trucks:	66		63.9		62.9		61		68.	-		68.8
Vehicle Noise:	67	.8	64.9		63.7		62	.3	69.	1		69.4
Centerline Distance	to Noise Co	ntour (in feet)									
			L	70	dBA	65	dBA		60 dBA	_	55 d	
			Ldn:		38		8		178			383
		C	NEL:		40		8	7	187	,		403

	FHWA-RD	0-77-108 HIGI	HWAY	NOISE	PREDIC	TION M	ODEL (9/12/2	021)			
Road Nam	o: EA 2023 e: Sierra Wy. nt: s/o Rialto A	v.					Name: umber:		whead Wa	arehouse		
SITE S	SPECIFIC IN	PUT DATA				Ν	IOISE I	MODE	L INPUT	S		
Highway Data					Site Con	ditions	(Hard =	: 10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	3,021 vehic	les					Autos:	15			
Peak Hour	Percentage:	10.13%			Me	dium Tr	icks (2	Axles):	15			
Peak H	our Volume:	306 vehicle	es		He	avy Tru	cks (3+.	Axles):	15			
Ve	hicle Speed:	40 mph		-	Vehicle I	Miv						
Near/Far Lai	ne Distance:	33 feet				icleType		Day	Evening	Night	Daily	
Site Data					Autos: 71.9% 12.2% 15.9%							
Rar	rier Height:	0.0 feet			Medium Trucks: 75.3% 7.0% 17.7% 1.9							
Barrier Type (0-W		0.0			1	Heavy T	rucks:	60.4%	12.0%	27.6%	11.219	
Centerline Dis	. ,	44.0 feet			Noise So	a. Fi	ovetlen	o (in f	2041			
Centerline Dist.	to Observer:	44.0 feet		l l	Noise 30	Auto.		.000	et)			
Barrier Distance	to Observer:	0.0 feet			Modiu	Auto m Truck		297				
Observer Height (Above Pad):	5.0 feet						.004	Grade Ad	li voteno nt		
Pa	ad Elevation:	0.0 feet			пеац	y Truck	s. o.	.004	Grade Au	jusunem	. 0.0	
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalent	Distan	ce (in :	feet)			
F	Road Grade:	0.0%				Auto	s: 41	.094				
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 40	.879				
	Right View:	90.0 degre	es		Heav	y Truck	s: 40	.900				
FHWA Noise Mode	el Calculation:	s										
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten	
Autos:	66.51	-7.08	3	1.1	7	-1.20		-4.61	0.0	000	0.00	
Medium Trucks:	77.72	-23.60)	1.2	11	-1.20		-4.87	0.0	000	0.00	
Heavy Trucks:	82.99	-15.97	7	1.2	11	-1.20		-5.50	0.0	000	0.00	
Unmitigated Noise	Levels (with	out Topo and	l barri	er atten	nuation)							
	Leq Peak Hou		,	Leq E	vening		Night		Ldn		NEL	
Autos:	59		57.1		55.4		51.		59.4		59.9	
Medium Trucks:	54		52.0		47.7		47.		54.4		54.	
Heavy Trucks:_ Vehicle Noise:	67 67		64.0		63.0		61.	-	68.6	-	68.	
					00.0		02.		09.	_	03.	
Centerline Distanc	e to Noise Co	ontour (in fee	t)	70	dBA	65	dBA	1 6	60 dBA	55	dBA	
			Ldn:		39		84		182		391	

	FHWA-RD	-77-108 HIGH	IWAY	NOISI	E PREDI	CTION I	MODEL	(9/12/2	021)				
Road Nan	rio: E+P ne: Sierra Wy. ent: s/o Rialto A	v.					t Name: Number:		owhead Wa	arehous	Э		
SITE	SPECIFIC IN	PUT DATA					NOISE	MODE	L INPUT	S			
Highway Data					Site Conditions (Hard = 10, Soft = 15)								
	Traffic (Adt): Percentage:	3,057 vehicle 10.13% 310 vehicle				ledium T leavy Tri		,	: 15				
	ehicle Speed:	40 mph	5		,	cavy III	ichs (ST	ANICS).	. 13				
	ane Distance:	33 feet			Vehicle Mix								
	ine Distance.	33 leet			Ve	hicleTyp		Day	Evening	Night	Daily		
Site Data							Autos:	71.9%		15.9%			
Ва	rrier Height:	0.0 feet			1	Леdium		75.3%		17.7%	,		
Barrier Type (0-V	Vall, 1-Berm):	0.0				Heavy	Trucks:	60.49	6 12.0%	27.6%	11.209		
Centerline D	ist. to Barrier:	44.0 feet			Noise 5	Source E	levatio	ns (in f	eet)				
Centerline Dist.	to Observer:	44.0 feet			110,00	Aut		.000	001)				
Barrier Distance	to Observer:	0.0 feet			Medi	um Truc		.297					
Observer Height	(Above Pad):	5.0 feet				avy Truc		.004	Grade Ad	liustmen	t: 0.0		
P	ad Elevation:	0.0 feet				-				,			
	ad Elevation:	0.0 feet			Lane E	quivaler			feet)				
	Road Grade:	0.0%				Aut		.094					
	Left View:	-90.0 degre				um Truc		.879					
	Right View:	90.0 degre	es		Hea	avy Truc	ks: 40	0.900					
FHWA Noise Mod													
VehicleType	REMEL	Traffic Flow		stance	_	e Road	Fres		Barrier At		rm Atten		
Autos:		-7.03			17	-1.20		-4.61		000	0.00		
Medium Trucks:		-23.52			21	-1.20		-4.87		000	0.00		
Heavy Trucks:	82.99	-15.92		1.:	21	-1.20	1	-5.50	0.	000	0.00		
Unmitigated Nois			barri	ier atte	nuation)							
VehicleType	Leq Peak Hou	r Leq Day	/	Leq I	Evening	Lec	y Night		Ldn	C	NEL		
Autos:	00.		57.2		55.	-	51	-	59.	-	59.		
Medium Trucks:	0	_	52.1		47.	-	47		54.	-	54.		
Heavy Trucks:			64.0		63.	-	61		68.		69.		
Vehicle Noise:	68.	.0	65.1		63.	8	62	.4	69.	3	69.		
Centerline Distan	ce to Noise Co	ntour (in feet)			1		_		1			
				70) dBA	65	i dBA	- (60 dBA	55	i dBA		

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MC	DEL (9/	12/20	21)		
	o: EAP 2023 e: Sierra Wy. t: s/o Rialto A	v.		·			Vame: S. mber: 14		whead Wa	rehouse	
SITE S	PECIFIC IN	IPUT DATA				NO	DISE MO	DDEL	INPUTS	3	
Highway Data					Site Cor	ditions (l	Hard = 1	0, So	ft = 15)		
Average Daily 7	raffic (Adt):	3,145 vehicle	es				A	utos:	15		
Peak Hour F	Percentage:	10.13%			Me	dium True	cks (2 Ax	des):	15		
Peak Ho	our Volume:	319 vehicles	3		He	avy Truck	ks (3+ Ax	les):	15		
Veh	icle Speed:	40 mph			1/-1-1-1-						
Near/Far Lan	e Distance:	33 feet			Vehicle	icleType	1.0	ay	Evening	Night	Daily
Site Data					ven			ay 1.9%	12.2%	15.9%	86.85%
						All edium Tri		5.3%	7.0%	17.7%	1.95%
	rier Height:	0.0 feet				Heavy Tru		0.4%	12.0%		11.20%
Barrier Type (0-Wa		0.0				leavy III	ichs. U	0.476	12.076	21.076	11.2076
Centerline Dis		44.0 feet		L	Noise S	ource Ele	vations	(in fe	et)		
Centerline Dist. to		44.0 feet				Autos:	0.00	00			
Barrier Distance to		0.0 feet			Mediu	m Trucks:	2.29	97			
Observer Height (A	,	5.0 feet			Hear	y Trucks:	8.00)4	Grade Adj	ustment.	0.0
	d Elevation: d Flevation:	0.0 feet 0.0 feet		ŀ	l ano Fo	uivalent l	Dietance	(in f	oot)		
	a Elevation: Road Grade:	0.0 reet 0.0%		ŀ	Lane Ly	Autos		•	oct)		
, n	l eft View:		_		Modiu	m Trucks:					
		-90.0 degree						-			
	Right View:	90.0 degree	es		Hea	y Trucks.	40.90)()			
FHWA Noise Mode	l Calculation										
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresne	/ I	Barrier Atte	en Ber	m Atten
Autos:	66.51	-6.91		1.1		-1.20		1.61	0.0		0.000
Medium Trucks:	77.72	-23.40		1.2		-1.20		1.87	0.0		0.000
Heavy Trucks:	82.99	-15.80		1.2	1	-1.20		5.50	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	er atter	uation)						
VehicleType I	Leq Peak Hou	ır Leq Day		Leq E	vening	Leq N	light		Ldn	CI	VEL
Autos:	59	.6	57.3		55.6		52.0		59.6	6	60.0
Medium Trucks:	54	.3	52.3		47.9		47.2		54.6	6	54.8
Heavy Trucks:	67	.2	64.2		63.2		62.0		68.8	3	69.1
Vehicle Noise:	68	.1	65.2		64.0		62.6		69.4	1	69.7
Centerline Distance	e to Noise Co	ontour (in feet)	,								
			L	70	dBA	65 d		6	0 dBA	55	dBA
			Ldn:		40		87		186		402
		CI	VEL:		42		91		196		422

Wednesday, August 2, 2023

	FHWA-RD	-77-108 HIGH	WAY N	NOISE	PREDIC	TION N	IODEL (9	9/12/2	021)		
Road Nam	io: EAC 2023 ne: Sierra Wy. nt: s/o Rialto A	v.					t Name: \$ lumber: *		owhead Wa	rehous	se
SITE S	SPECIFIC IN	PUT DATA				N	NOISE N	/ODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	3,305 vehicle	es					Autos	15		
Peak Hour	Percentage:	10.13%			Me	dium Tr	ucks (2 A	(xles	15		
Peak H	lour Volume:	335 vehicles	S		He	avy Tru	cks (3+ A	(xles	15		
Ve	hicle Speed:	40 mph		H	Vehicle I	/iv					
Near/Far La	ne Distance:	33 feet		H		cleType		Dav	Evening	Night	Daily
Site Data								71.99		15.99	,
Rai	rrier Height:	0.0 feet			Me	edium T	rucks:	75.39	6 7.0%	17.79	% 1.94%
Barrier Type (0-W		0.0			F	leavy T	rucks:	60.49	6 12.0%	27.69	% 11.21%
Centerline Dis		44.0 feet		-	M-1 0-			- /! /	41		
Centerline Dist.	to Observer:	44.0 feet		-	Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height (Above Pad):	5.0 feet				n Truck		297	Grade Adj	inatma	nti o o
Pa	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	usune	и. 0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distand	e (in	feet)		
1	Road Grade:	0.0%				Auto	s: 41.	094			
	Left View:	-90.0 degree	es		Mediui	n Truck	s: 40.	879			
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.	900			
FHWA Noise Mode	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Atte	en B	erm Atten
Autos:	66.51	-6.69		1.1	7	-1.20		-4.61	0.0	00	0.000
Medium Trucks:	77.72	-23.21		1.2	21	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	82.99	-15.58		1.2	21	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r atter	nuation)						
VehicleType	Leq Peak Hou	r Leq Day	,	Leq E	vening	Leq	Night		Ldn	- (CNEL
Autos:	59		57.5		55.8		52.2		59.8	}	60.2
Medium Trucks:	54		52.4		48.1		47.4		54.8		55.0
Heavy Trucks:	67		64.4		63.4		62.2		69.0		69.3
Vehicle Noise:	68	.3	65.4		64.2		62.8		69.6	;	69.9
Centerline Distance	ce to Noise Co	ntour (in feet)								
			L	70	dBA	65	dBA		60 dBA	5	5 dBA
			Ldn:		42		89		193		415
		Ci	NEL:		44		94		203		436

	FHWA-RE	D-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL	(9/12/2	021)		
	o: HY 2040 e: Sierra Wy. nt: s/o Rialto A	v.				.,		S. Arro 14660	whead Wa	arehouse	•
SITE S	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	Hard:	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	3,635 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2	Axles):	15		
Peak H	our Volume:	368 vehicles	S		He	avy Truc	ks (3+	Axles):	15		
Vei	hicle Speed:	40 mph			Vehicle I	Miss					
Near/Far Lai	ne Distance:	33 feet		-							Daily
Site Data					*0//		utos:	71.9%	-	15.9%	
		0.0 feet			Me	edium Tı		75.3%		17.7%	
Barrier Type (0-W	rier Height:	0.0 reet 0.0			ŀ	Heavy Tr	ucks:	60.4%	12.0%	27.6%	11.21%
Centerline Dis		44.0 feet									
Centerline Dist		44.0 feet		ļ	Noise Sc			_	eet)		
Barrier Distance		0.0 feet				Autos		.000			
Observer Height (5.0 feet				m Trucks	-	.297			
	d Flevation:	0.0 feet			Heav	y Trucks	3: 8	.004	Grade Ad	justmen	t: 0.0
	d Elevation:	0.0 feet		-	Lane Eq	uivalent	Distar	ice (in	feet)		
	Road Grade:	0.0%		Ī		Autos	3: 41	.094			
•	Left View:	-90.0 degree	es		Mediui	m Trucks		.879			
	Right View:	90.0 degree			Heav	y Trucks	3: 40	.900			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	66.51	-6.28		1.1	17	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	77.72	-22.80		1.2	21	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-15.17		1.2	21	-1.20		-5.50	0.0	000	0.000
Inmitigated Noise	Levels (with	out Topo and	barrie	er attei	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	′	Leq E	vening	Leq	Vight		Ldn	С	NEL
Autos:	60	.2	57.9		56.3		52	.6	60.2	2	60.7
Medium Trucks:	54	.9	52.9		48.5		47	.8	55.2	2	55.4
Heavy Trucks:	67		64.8		63.8		62		69.4		69.7
Vehicle Noise:	68	.7	65.8		64.6		63	.2	70.0)	70.4
Centerline Distanc	e to Noise Co	ontour (in feet)								
				70	dBA	65 (dBA	(60 dBA	55	dBA
			Ldn:		44		9		205		442
		0	NEL:		46		10	n	216		465

	FHWA-RD	-77-108 HIGH	WAY I	NOISE	PREDIC	TION	MODEL	(9/12/2	021)			
Road Nam	o: EAPC 2023 e: Sierra Wy. nt: s/o Rialto A						t Name: Number:		whead Wa	arehouse	•	
SITE S	SPECIFIC IN	PUT DATA					NOISE	MODE	L INPUT	S		
Highway Data					Site Cor	ditions	(Hard:	= 10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	3,429 vehicle	es					Autos:	15			
Peak Hour	Percentage:	10.13%			Me	dium T	rucks (2	Axles):	15			
Peak H	our Volume:	347 vehicles	S		He	avy Tru	icks (3+	Axles):	15			
Ve	hicle Speed:	40 mph		+	Vehicle	Miv						
Near/Far Lai	ne Distance:	33 feet		F		icleTyp	e	Day	Evening	Night	Daily	
Site Data							Autos:	71.9%	-		86.85	
	rier Height:	0.0 feet		\neg	Medium Trucks: 75.3% 7.0% 17.7%							
Barrier Type (0-W	-	0.0			Heavy Trucks: 60.4% 12.0% 27.6% 11.20							
Centerline Dis	st. to Barrier:	44.0 feet		- h	Noise S	ource F	levatio	ns (in f	oet)			
Centerline Dist.	to Observer:	44.0 feet		ľ	,,,,,,,	Auto		0.000	,,,			
Barrier Distance	to Observer:	0.0 feet			Madiu	m Truci		.297				
Observer Height (Above Pad):	5.0 feet				v Truci		3.004	Grade Ad	liustment	. 0 0	
Pa	ad Elevation:	0.0 feet		L		•				,	. 0.0	
Roa	ad Elevation:	0.0 feet		1	Lane Eq	uivaler	t Distai	nce (in	feet)			
I	Road Grade:	0.0%				Auto		1.094				
	Left View:	-90.0 degree	es			m Truci		0.879				
	Right View:	90.0 degree	es		Hear	ry Truci	ks: 4(0.900				
FHWA Noise Mode	el Calculations	-		- 1								
VehicleType	REMEL	Traffic Flow	Dist	tance		Road	Fres		Barrier Att		m Atter	
Autos:	66.51	-6.53		1.1		-1.20		-4.61		000	0.00	
Medium Trucks:	77.72	-23.02		1.2		-1.20		-4.87		000	0.00	
Heavy Trucks:	82.99	-15.42		1.2		-1.20		-5.50	0.0	000	0.00	
Unmitigated Noise	•		_									
VehicleType Autos:	Leq Peak Hou	.,.,		Leq E	vening		Night	4	Ldn		NEL	
Medium Trucks:	60. 54		57.7 52.6		56.0 48.3		52 47		60.0 55.0		60 55	
Heavy Trucks:	54. 67.		52.6 64.5		48.3 63.5		62		69.	-	69	
Vehicle Noise:	68.		65.6		64.3		62		69.		70	
Centerline Distanc	e to Noise Co	ntour (in feet)									
				70	dBA	65	dBA	(60 dBA	55	dBA	
			Ldn:		43		9	2	197		42	
			NFI:		45			6	208		44	

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MC	DEL	(9/12/20	021)		
Road Na	rio: HYP 2040 me: Sierra Wy. ent: s/o Rialto A	Av.						: S. Arro : 14660	whead Wa	arehouse	•
SITE	SPECIFIC IN	IPUT DATA				NO	DISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (l	Hard	= 10, Sc	oft = 15)		
Average Daily	/ Traffic (Adt):	3,776 vehicle	s					Autos:	15		
Peak Hou	r Percentage:	10.13%			Me	dium True	cks (2	Axles):	15		
Peak	Hour Volume:	382 vehicles	;		He	avy Truck	ks (3+	- Axles):	15		
V	ehicle Speed:	40 mph		ŀ	Vehicle I	/liv					
Near/Far L	ane Distance:	33 feet		-		cleType		Dav	Evening	Night	Daily
Site Data							ıtos:	71.9%	-	15.9%	,
D.	arrier Heiaht:	0.0 feet			Me	edium Tru	icks:	75.3%	7.0%	17.7%	2.01%
Barrier Type (0-1		0.0			F	leavy Tru	icks:	60.4%	12.0%	27.6%	11.52%
,,,,	ist. to Barrier:	44.0 feet		-	M-1 0-			/ 6-	41		
Centerline Dist	to Observer:	44.0 feet			Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet			A deceller	Autos: n Trucks:		0.000 2.297			
Observer Height	(Above Pad):	5.0 feet				n Trucks: y Trucks:	-	2.297 3.004	Grade Ad	liuctmont	. 0.0
F	Pad Elevation:	0.0 feet			пеач	y Trucks.		5.004	Grade Ad	ijusuneni	. 0.0
Ro	oad Elevation:	0.0 feet			Lane Equ	ıivalent l	Dista	nce (in i	feet)		
	Road Grade:	0.0%				Autos:	4	1.094			
	Left View:	-90.0 degree	:S		Mediur	n Trucks:	4	0.879			
	Right View:	90.0 degree	:S		Heav	y Trucks:	41	0.900			
FHWA Noise Mod	del Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre		Barrier Att		m Atten
Autos				1.1		-1.20		-4.61		000	0.000
Medium Trucks				1.2		-1.20		-4.87		000	0.000
Heavy Trucks	: 82.99	-14.89		1.2	21	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atter	nuation)						
VehicleType	Leq Peak Hou	, ,	_	Leq E	vening	Leq ∧	_		Ldn		NEL
Autos			58.1		56.4		52		60.4		60.8
Medium Trucks			53.2		48.9		48		55.	-	55.8
Heavy Trucks			65.1		64.1		62		69.		70.0
Vehicle Noise	: 69	9.0	66.1		64.9		63	1.5	70.	3	70.6
Centerline Distan	ice to Noise Co	ontour (in feet)	_								
			L	70	dBA	65 d			60 dBA		dBA
			Ldn:		46		_	19	214		461
		CI	VEL:		48		10	14	225	j.	485

Wednesday, August 2, 2023

	FHWA-RE	0-77-108 HIGH	WAY	NOISE	E PREDIC	CTION N	MODEL ((9/12/2	021)			
	io: E ne: Sierra Wy. nt: s/o Dwy. 6						t Name: lumber:		owhead Wa	areho	use	
SITE	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	L INPUT	S		
Highway Data					Site Cor	nditions	(Hard =	: 10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	2,913 vehicle	es					Autos:	15			
Peak Hour	Percentage:	10.13%			Me	edium Ti	rucks (2	Axles):	15			
Peak H	lour Volume:	295 vehicle	S		He	eavy Tru	cks (3+	Axles):	15			
Ve	hicle Speed:	40 mph		1	Vehicle	Miv						
Near/Far La	ne Distance:	33 feet		-		icleType	۵ .	Day	Evening	Nigl	nt l	Daily
Site Data					*07.		Autos:	71.9%	-			6.85%
	rrier Height:	0.0 feet			M	edium 7	rucks:	75.3%		17.		1.94%
Barrier Type (0-W		0.0 feet				Heavy 7	rucks:	60.4%	6 12.0%	27.	6% 1	1.21%
Centerline Di		44.0 feet										
Centerline Dist.		44.0 feet			Noise S				eet)			
Barrier Distance		0.0 feet				Auto		.000				
Observer Height (5.0 feet				m Truck		.297				
	ad Elevation:	0.0 feet			Hea	vy Truck	rs: 8	.004	Grade Ad	justm	ent: 0	.0
	ad Flevation:	0.0 feet		İ	Lane Eq	uivalen	t Distan	ce (in	feet)			
	Road Grade:	0.0%		İ		Auto	s: 41	.094				
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 40	.879				
	Right View:	90.0 degree	es		Hea	vy Truck	s: 40	.900				
FHWA Noise Mode	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en .	Berm.	Atten
Autos:	66.51	-7.24		1.1	17	-1.20		-4.61	0.0	000		0.000
Medium Trucks:	77.72	-23.76		1.3	21	-1.20		-4.87	0.0	000		0.000
Heavy Trucks:	82.99	-16.13		1.2	21	-1.20		-5.50	0.0	000		0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	er atte	nuation)							
VehicleType	Leq Peak Hou	ır Leq Day	′	Leq E	vening	Leq	Night		Ldn		CNE	L
Autos:	59	.2	57.0		55.3		51.	7	59.2	2		59.7
Medium Trucks:	54	.0	51.9		47.6	i	46.	8	54.2	2		54.5
Heavy Trucks:	66	.9	63.8		62.8		61.	7	68.4	1		68.7
Vehicle Noise:	67	.7	64.9		63.6	i	62.	2	69.	1		69.4
Centerline Distance	ce to Noise Co	ontour (in feet)									
				70	dBA	65	dBA	(60 dBA		55 dE	BA
			Ldn:		38		82	-	177			382
		C	NEL:		40		86	3	186			401

	FHWA-RE)-77-108 HIGH	WAY	NOISE	PREDIC	TION MO	DDEL	(9/12/2	021)		
Road Nan	ne: Sierra Wy. nt: s/o Dwy. 6					Project I Job Nu			owhead Wa	arehous	е
SITE	SPECIFIC IN	IPUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (i	Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	3,000 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	cks (2	Axles):	15		
Peak F	lour Volume:	304 vehicles			He	avy Truci	ks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		-	Vehicle I	Miv					
Near/Far La	ne Distance:	33 feet		F		icleType		Dav	Evening	Night	Dailv
Site Data					****		utos:	71.9%		15.9%	. ,
	rrier Heiaht:	0.0 feet			М	edium Tri		75.3%		17.7%	
Barrier Type (0-W		0.0 reet 0.0				Heavy Tru	ıcks:	60.4%	12.0%	27.6%	6 11.21%
Centerline Di		44.0 feet		L							
Centerline Dist.		44.0 feet		L	Noise So	ource Ele		٠,	eet)		
Barrier Distance		0.0 feet				Autos.	-	.000			
Observer Height		5.0 feet				m Trucks.		.297			
	ad Flevation:	0.0 feet			Heav	y Trucks.	: 8	.004	Grade Ad	ljustmen	t: 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent i	Distar	ce (in	feet)		
	Road Grade:	0.0%				Autos.	: 41	.094			
	Left View:	-90.0 degree	s		Mediu	m Trucks.	40	.879			
	Right View:	90.0 degree	S		Heav	y Trucks.	40	.900			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fres		Barrier Att		rm Atten
Autos:		-7.11		1.1	7	-1.20		-4.61		000	0.000
Medium Trucks:		-23.63		1.2		-1.20		-4.87		000	0.000
Heavy Trucks:		-16.00		1.2		-1.20		-5.50	0.0	000	0.000
Unmitigated Nois			barrie					_			
VehicleType Autos:	Leq Peak Hou		57.1	Leq E	vening 55.4	Leq N	lignt 51	0	Ldn 59.		59.8
Medium Trucks:	59		52.0		55.4 47.7		47	-	54.		59.8
Heavy Trucks:			64.0		63.0		61.	-	68.		68.9
Vehicle Noise:			55.0		63.8		62		69.		69.5
Centerline Distan	ce to Noise Co	ontour (in feet)									
				70	dBA	65 d	BA	(60 dBA	55	5 dBA
		ı	dn:		39		8-	4	181		389
			IFI:		41		8		190		409

	e: Sierra Wy.						Name:		whead Wa	rehouse	
Road Segmer	nt: s/o Dwy. 6										
SITE :	SPECIFIC IN	IPUT DATA				١	NOISE I	MODE	L INPUT	3	
Highway Data					Site Cor	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	2,967 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	301 vehicles	S		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	40 mph			Vehicle	Miss					
Near/Far La	ne Distance:	33 feet		ŀ		icleType		Dav	Evenina	Niaht	Dailv
Site Data					Ven		Autos:	71.9%		15.9%	- /
		0.0 feet		\rightarrow	M	edium T		75.3%		17.7%	1.909
	rier Height:					Heavy T		60.4%	,.		11.019
Barrier Type (0-W Centerline Dis		0.0 44.0 feet				loury .	ruono.	00.17	, 12.070	27.070	
Centerline Dist.		44.0 feet 44.0 feet			Noise S	ource E	levation	s (in f	eet)		
Barrier Distance		0.0 feet				Auto	s: 0.	.000			
		5.0 feet			Mediu	m Truck	s: 2	.297			
Observer Height (ad Flevation:	0.0 feet			Hear	y Truck	s: 8.	.004	Grade Ad	iustment	0.0
	ad Elevation:	0.0 feet		ŀ	Lane Eq	uivələn	t Dietan	ce (in	foot)		
	Road Grade:	0.0 reet 0.0%		ŀ	Lanc Lq	Auto		094	icci)		
,	Left View:	-90.0 degree			Modiu	m Truck		.879			
	Right View:	90.0 degree				vy Truck	10	.900			
	ragni view.	90.0 degree	#5		1100	ry rruon	3. 40	.500			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	-7.15		1.1	7	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	77.72	-23.76		1.2	21	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-16.13		1.2	21	-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er atter	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	,	Leq E	vening	Leq	Night		Ldn	CI	VEL
Autos:	59).3	57.1		55.4		51.	8	59.3	3	59
Medium Trucks:	54	1.0	51.9		47.6		46.	8	54.2	2	54
Heavy Trucks:	66	6.9	63.8		62.8		61.	7	68.4	1	68
Vehicle Noise:	67	.8	64.9		63.7		62.	2	69.		69
Centerline Distanc	e to Noise Co	ontour (in feet)								
				70	dBA	65	dBA	- (60 dBA	55	dBA
			Ldn:		38		82	2	177		38:

Wednesday, August 2, 2023

	FHWA-RI	0-77-108 HIGHW	AY NOIS	E PREDIC	CTION MO	DEL (9/12/:	2021)	
Road Nar	rio: EAP 2023 me: Sierra Wy. ent: s/o Dwy. 6					lame: S. Ari mber: 1466	rowhead Ware 0	ehouse
SITE	SPECIFIC IN	IPUT DATA			NC	ISE MOD	EL INPUTS	
Highway Data				Site Con	ditions (F	lard = 10, S	Soft = 15)	
Average Daily	Traffic (Adt):	3,054 vehicles				Autos	s: 15	
,	r Percentage:	10.13%		Ме	dium Truc	ks (2 Axles): 15	
	Hour Volume:	309 vehicles		He	avy Truck	s (3+ Axles): 15	
V	ehicle Speed:	40 mph						
	ane Distance:	33 feet		Vehicle I				
	and Biotaneo.	00 1001		Veh	icleType	Day	-	Night Daily
Site Data						tos: 71.9		15.9% 87.09%
Ba	arrier Height:	0.0 feet			edium Tru			17.7% 1.90%
Barrier Type (0-V	Vall, 1-Berm):	0.0		,	Heavy Tru	cks: 60.4	% 12.0%	27.6% 11.01%
Centerline D	ist. to Barrier:	44.0 feet		Noise So	ource Elev	ations (in	feet)	
Centerline Dist	. to Observer:	44.0 feet			Autos:	0.000	,	
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks:	2.297		
Observer Height	(Above Pad):	5.0 feet			y Trucks:	8.004	Grade Adju	stment: 0.0
F	Pad Elevation:	0.0 feet			*			
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent E	Distance (in	feet)	
	Road Grade:	0.0%			Autos:	41.094		
	Left View:	-90.0 degrees		Mediu	m Trucks:	40.879		
	Right View:	90.0 degrees		Heav	y Trucks:	40.900		
FHWA Noise Mod				'				
VehicleType	REMEL		Distance		Road	Fresnel	Barrier Atter	
Autos		-7.02		17	-1.20	-4.61		
Medium Trucks		-23.63		21	-1.20	-4.87		
Heavy Trucks		-16.00		21	-1.20	-5.50	0.00	0.000
Unmitigated Nois								
VehicleType	Leq Peak Hou			Evening	Leq N	•	Ldn	CNEL
Autos	: 59	.5 57.	.2	55.5		51.9	59.5	59.9
Medium Trucks		.1 52.	.0	47.7		47.0	54.4	54.6
Heavy Trucks	67	.0 64.	.0	63.0		61.8	68.6	68.9
Vehicle Noise	67	.9 65.	.0	63.8		62.4	69.2	69.5
Centerline Distan	ce to Noise Co	ontour (in feet)	7/) dBA	65 dE	34	60 dBA	55 dBA
		I d		39	03 GE	84	181	390
		CNE		39 41		84 88	190	390 410
		CIVE	L.	41		00	190	410

Wednesday, August 2, 2023

Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Barrier Distance to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Distance for feet Centerline Distance feet Centerline Distance for feet Centerline Distance feet Center		FHWA-R	D-77-108 HIGH	IWAY N	NOISE F	REDIC	TION N	MODEL	(9/12/20	021)		
Site Conditions (Hard = 10, Soft = 15)	Road Name	e: Sierra Wy.								whead Wa	arehous	se
Average Daily Traffic (Adt): 3,084 vehicles Peak Hour Vehicle Speed: 40 mph Near/Far Lane Distance: 33 feet Vehicle Mix Vehicle Type Day Evening Nlight Daily Near/Far Lane Distance: 33 feet Vehicle Type Day Evening Nlight Daily Near/Far Lane Distance: 33 feet Vehicle Type Day Evening Nlight Daily Near/Far Lane Distance: 33 feet Vehicle Mix Vehicle Type Day Evening Nlight Daily Near/Far Lane Distance: 33 feet Vehicle Mix Vehicle Type Day Evening Nlight Daily Near/Far Lane Distance: 71.9% 12.2% 15.9% 68.59 Medium Trucks: 75.3% 7.0% 17.7% 1.94% Heavy Trucks: 60.4% 12.0% 27.6% 11.21% Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 60.4% 12.0% 27.6% 11.21% Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 8.004 Grade Adjustment: 0.0 Grade Adjustment	SITE S	SPECIFIC IN	NPUT DATA				1	VOISE	MODE	L INPUT	S	
Peak Hour Percentage: 10.13% Medium Trucks (2 Axles): 15	Highway Data				Si	te Cor	ditions	(Hard =	: 10, Sc	ft = 15)		
Peak Hour Volume:	Average Daily	Traffic (Adt):	3,084 vehicl	es					Autos:	15		
Vehicle Speed: Near/Fer Lane Distance: 33 feet Vehicle Mix Vehicle Type Day Evening Night Daily	Peak Hour	Percentage:	10.13%			Me	edium Ti	ucks (2	Axles):	15		
Near/Far Lane Distance: 33 feet	Peak H	our Volume:	312 vehicle	s		He	avy Tru	cks (3+	Axles):	15		
Namificated Noise Model Calculations VehicleType Day Evening Night Daily	Vel	nicle Speed:	40 mph		1/	hiolo	Miv					
Site Data Barrier Height: Barrier Height: D.0 feet Barrier Type (O-Wall, 1-Berm): 0.0 Centerline Dist. to Diserver: 44.0 feet 44.0 feet Autos: 60.4 12.0 17.7 19.4	Near/Far Lar	ne Distance:	33 feet		-			9	Dav	Evenina	Niaht	Daily
Barrier Type (C-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet	Site Data											
Barrier Type (0-Wall, 1-Berm):	Rar	rior Hoiaht	0.0 feet			М	edium 7	rucks:	75.3%	7.0%	17.7	% 1.94%
Centerline Dist. to Observer: Barrier Distance to Observer: A4.0 feet Content of Distance to Observer: A4.0 feet Content of Distance to Observer: A4.0 feet Content of Distance to Observer: A4.0 feet Content of Distance to Observer: A4.0 feet Content of Distance to Observer: A4.0 feet Content of Distance Content o		-					Heavy 7	rucks:	60.4%	12.0%	27.6	% 11.21%
Autos: 0.000	Centerline Dis	t. to Barrier:	44.0 feet		N	nise Si	ource F	levation	s (in fe	et)		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297	Centerline Dist.	to Observer:	44.0 feet			,,,,,,				,		
Diserver Height (Above Pad):	Barrier Distance t	o Observer:	0.0 feet			Mediu						
Pad Elevation: 0.0 feet	Observer Height (Above Pad):	5.0 feet							Grade Ad	liustme	nt: 0.0
Road Grade: 0.0%			0.0 feet				•				,	
Left View:			0.0 feet		Lá	ne Eq				eet)		
FHWA Noise Mode Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 66.51 -6.99 1.17 -1.20 -4.61 0.000 0.00	F											
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten												
VehicleType		Right View:	90.0 degre	es		Hear	y Truck	rs: 40	.900			
Autos: 66.51	FHWA Noise Mode	l Calculation	IS									
Medium Trucks: 77.72 -23.51 1.21 -1.20 -4.87 0.000 0.000 Unmitigated Noise Levels (without Tropo and barrier attenuation) Vehicle Type Leq Peak How Leq Day Leq Evening Leq Right Ldn CNIEL Autos: 59.5 57.2 55.5 51.9 59.5 59. Medium Trucks: 54.2 52.1 47.8 47.1 54.5 54.9 Heavy Trucks: 67.1 64.1 63.1 61.9 68.7 69. Vehicle Noise: 68.0 65.1 63.9 62.5 69.3 69. Centerline Distance to Noise Contour (In Feet) Lada: 40 85 184 397	VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en B	erm Atten
Heavy Trucks: 82.99 -15.88 1.21 -1.20 -5.50 0.000 0.000 Unmitigated Noise: Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 59.5 57.2 55.5 51.9 59.5 59.5 Medium Trucks: 54.2 52.1 47.8 47.1 54.5 54. Heavy Trucks: 67.1 64.1 63.1 61.9 68.7 69. Vehicle Noise: 68.0 65.1 63.9 62.5 69.3 69. Centerline Distance to Noise Contour (In feet) Total Balance to Noise Contour (In feet) Ldn: 40 85 184 397												0.000
VehicleType												0.000
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL							-1.20		-5.50	0.0	000	0.000
Autos: 59.5 57.2 55.5 51.9 59.5 59.5 Medium Trucks: 54.2 52.1 47.8 47.1 54.5 54. Heavy Trucks: 67.1 64.1 63.1 61.9 68.7 69. Vehicle Noise: 68.0 65.1 63.9 62.5 69.3 69. Centerline Distance to Noise Contour (In Feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 40 85 184 397	•								1			
Medium Trucks: 54.2 52.1 47.8 47.1 54.5 54. Heavy Trucks: 67.1 64.1 63.1 61.9 68.7 69. Vehicle Noise: 68.0 65.1 63.9 62.5 69.3 69. Centerline Distance to Noise Contour (in feet) To dBA 65 dBA 60 dBA 55 dBA Ldn: 40 85 184 397					Leq Eve						_	
Heavy Trucks: 67.1 64.1 63.1 61.9 68.7 69.1 Vehicle Noise: 68.0 65.1 63.9 62.5 69.3 69.1 Centerline Distance to Noise Contour (In feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 40 85 184 397									-		-	59.9
Vehicle Noise: 68.0 65.1 63.9 62.5 69.3 69.0 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 40 85 184 397		-									-	
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 40 85 184 397	· · · · · -											
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 40 85 184 397		-				63.9		62.	5	69.3	3	69.6
Ldn: 40 85 184 397	Centerline Distanc	e to Noise C	ontour (in feet)	70 dF	RA.	65	dBA	-	n dBA	-	5 dBA
==== ==================================				I dn:	, 0 uL		00		_ ~			397
OIVEE. 42 50 193 417			С			42			-	193		417

	FHWA-RI	0-77-108 HIGH	IWAY	' NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
	io: HY 2040 e: Sierra Wy. nt: s/o Dwy. 6						Name: lumber:		whead Wa	arehouse	•
SITE S	SPECIFIC IN	IPUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	3.393 vehicl	es					Autos:	15		
,	Percentage:	10.13%			Ме	edium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	344 vehicle	:S		He	avy Tru	cks (3+	Axles):	15		
Vei	hicle Speed:	40 mph			Vehicle	Miss					
Near/Far Lai	ne Distance:	33 feet		-		iviix nicleType	,	Day	Evening	Night	Daily
Site Data							Autos:	71.9%		15.9%	
Par	rier Height:	0.0 feet			М	ledium T	rucks:	75.3%	7.0%	17.7%	
Barrier Type (0-W		0.0				Heavy T	rucks:	60.4%	12.0%	27.6%	11.21%
Centerline Dis	st. to Barrier:	44.0 feet			Noise S	ource E	levation	ıs (in fe	eet)		
Centerline Dist.		44.0 feet		Ī		Auto		.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2	.297			
Observer Height (,	5.0 feet			Hear	vy Truck	s: 8	.004	Grade Ad	justment	: 0.0
	ad Elevation:	0.0 feet		L							
	ad Elevation:	0.0 feet		L	Lane Eq				feet)		
F	Road Grade:	0.0%				Auto		.094			
	Left View:	-90.0 degre				m Truck		.879			
	Right View:	90.0 degre	es		Hear	vy Truck	s: 40	.900			
FHWA Noise Mode	el Calculation										
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		m Atten
Autos:	66.51	-6.58		1.1		-1.20		-4.61		000	0.00
Medium Trucks:	77.72	-23.09		1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	82.99	-15.47		1.2		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise								_			
	Leq Peak Hou		_	Leq E	vening		Night		Ldn		NEL
Autos:	59		57.6		56.0		52.	-	59.9	-	60.4
Medium Trucks:	54		52.6		48.2		47.		54.9		55.2
Heavy Trucks: Vehicle Noise:	67		64.5 65.5		63.5 64.3		62. 62.		69.7 69.7		69.4 70.1
Centerline Distance	o to Noiso Co	ntour (in foot	£)								
Centernile Distant	e to Moise Co	miour (III leei	9	70	dBA	65	dBA	1 6	60 dBA	55	dBA
			Ldn:		42		9	1	196		423

		-77-108 HIGH	WAY N	IOISE	PREDIC						
Road Nar	rio: EAPC 2023 me: Sierra Wy.					.,	t Name: Number:		owhead Wa	rehouse	•
Road Segme	ent: s/o Dwy. 6										
	SPECIFIC IN	PUT DATA							L INPUTS	5	
Highway Data					Site Cor	nditions	(Hard =	10, S	oft = 15)		
Average Daily	/ Traffic (Adt):	3,138 vehicle	:S					Autos:	15		
Peak Hou	r Percentage:	10.13%			Me	edium Ti	rucks (2 .	Axles):	15		
Peak I	Hour Volume:	318 vehicles			He	eavy Tru	icks (3+ .	Axles):	15		
Ve	ehicle Speed:	40 mph		H	Vehicle	Mix					
Near/Far La	ane Distance:	33 feet		F		icleType	9	Dav	Evening	Night	Daily
Site Data							Autos:	71.9%	-		87.08%
		0.0 feet			М	ledium 7	rucks:	75.3%	7.0%	17.7%	
	arrier Height:	0.0 reet 0.0				Heavy 7	rucks:	60.4%			11.02%
Barrier Type (0-V	vali, 1-Berm): ist. to Barrier:	0.0 44.0 feet				, .					
Centerline Dist.		44.0 feet			Noise S	ource E	levation	s (in f	eet)		
Barrier Distance		0.0 feet				Auto	os: 0.	000			
					Mediu	m Truck	rs: 2.	297			
Observer Height	(Above Pad): Pad Flevation:	5.0 feet			Hear	vy Truck	rs: 8.	004	Grade Ad	iustmen	0.0
-	ad Elevation: and Flevation:	0.0 feet			Lane Eq	uivalon	t Dietan	co (in	foot)		
RO	Road Grade:	0.0 feet		H	Lane Ly	Auto		094	ieei)		
		0.0%			A 4 15 -	m Truck					
	Left View:	-90.0 degree						.879			
	Right View:	90.0 degree	:S		неа	vy Truck	(S: 40.	.900			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow	Dista			Road	Fresi		Barrier Att		m Atten
Autos:		-6.90		1.1		-1.20		-4.61	0.0		0.000
Medium Trucks:		-23.51		1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	: 82.99	-15.88		1.2	21	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois								1			
VehicleType Autos:	Leq Peak Hou			Leq E	vening		Night		Ldn		NEL
Medium Trucks			57.3		55.6		52.0		59.6		60.0
Heavy Trucks:			52.1		47.8		47.		54.5		54.7
Vehicle Noise.			64.1 65.1		63.1		61.9		68.7 69.3		69.0
Centerline Distan	ice to Noise Co.	ntour (in feet)									
		(1111001)		70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		40		86	i	184		397
		CI	VEL:		42		90)	194		417

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	E PREDIC	TION M	ODEL	. (9/12/20	021)		
Road Nan	rio: HYP 2040 ne: Sierra Wy. ent: s/o Dwy. 6							: S. Arro : 14660	whead Wa	arehouse	;
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	3,447 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2	Axles):	15		
Peak I	Hour Volume:	349 vehicles	S		He	avy Truc	cks (3-	- Axles):	15		
Ve	ehicle Speed:	40 mph			Vehicle I	Miss					
Near/Far La	ane Distance:	33 feet		ł		icleType		Dav	Evening	Night	Daily
Site Data					* 077		lutos:	71.9%	0	15.9%	. ,
D.	rrier Height:	0.0 feet			M	edium Tı	ucks:	75.3%	7.0%	17.7%	
Barrier Type (0-V		0.0 reet			F	Heavy Tr	ucks:	60.4%	12.0%	27.6%	11.04%
,, ,	ist. to Barrier:	44.0 feet									
Centerline Dist		44.0 feet			Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		0.000			
Observer Height	(Above Pad):	5.0 feet				m Trucks		2.297	0	E	
	ad Elevation:	0.0 feet			Heav	y Trucks	S.	B.004	Grade Ad	ijustmeni	: 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in i	feet)		
	Road Grade:	0.0%		ĺ		Autos	s: 4	1.094			
	Left View:	-90.0 degree	es		Mediu	m Trucks	s: 4	0.879			
	Right View:	90.0 degree	es		Heav	y Truck	s: 4	0.900			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fre		Barrier At		rm Atten
Autos:				1.1		-1.20		-4.61		000	0.000
Medium Trucks:				1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	82.99	-15.47		1.2	21	-1.20		-5.50	0.	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq E	vening	Leq	Night		Ldn		NEL
Autos:			57.7		56.0			2.4	60.	-	60.4
Medium Trucks:	-		52.6		48.2			7.5	54.	-	55.2
Heavy Trucks:			64.5		63.5			2.3	69.		69.4
Vehicle Noise:			65.5		64.3		62	2.9	69.	7	70.1
Centerline Distan	ce to Noise Co	ontour (in feet)								
			L	70	dBA	65 (dBA		60 dBA		dBA
			Ldn:		42			91	196		423
		CI	VEL:		44			96	206	j .	445

Wednesday, August 2, 2023 Wednesday, August 2, 2023

	FHWA-RI	0-77-108 HIGH	WAY	NOISE	E PREDIC	CTION N	MODEL	(9/12/2	2021)		
						Projec		S. Arr	owhead Wa	arehou	se
SITE	SPECIFIC IN	IPUT DATA				1	NOISE	MODE	EL INPUT	S	
Highway Data					Site Cor	nditions	(Hard	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	8,630 vehicle	es					Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	edium Ti	rucks (2	Axles)): 15		
Peak H	lour Volume:	874 vehicle	S		He	eavy Tru	icks (3+	Axles)): 15		
Ve	hicle Speed:	35 mph		ŀ	Vehicle	Miv					
Near/Far La	ne Distance:	33 feet		ŀ		icleTyp	ρ	Dav	Evening	Nigh	t Daily
Site Data							Autos:	71.99		15.9	
Ra	rrier Height:	0.0 feet			M	ledium 7	Trucks:	75.39		17.7	% 1.94%
Barrier Type (0-W		0.0				Heavy 7	Trucks:	60.49	% 12.0%	27.6	% 11.21%
Centerline Di		44.0 feet		-							
Centerline Dist.	to Observer:	44.0 feet		ŀ	Noise S				reet)		
Barrier Distance	to Observer:	0.0 feet				Auto		0.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		2.297	Crada As	livoteno	mt 0.0
Pi	ad Elevation:	0.0 feet			Hea	vy Truck	ks: E	3.004	Grade Ad	jusune	ent. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Dista	nce (in	feet)		
	Road Grade:	0.0%				Auto	os: 41	1.094			
	Left View:	-90.0 degree	es		Mediu	m Truck	ks: 40	0.879			
	Right View:	90.0 degree	es		Hea	vy Truci	ks: 40	0.900			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	snel	Barrier Att	en E	Berm Atten
Autos:	64.30	-1.94		1.1	17	-1.20		-4.61	0.	000	0.000
Medium Trucks:	75.75	-18.46		1.2	21	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	81.57	-10.83		1.2	21	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	er attei	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	′	Leq E	vening	Leq	Night		Ldn		CNEL
Autos:	62	.3	60.1		58.4		54	.7	62.	3	62.8
Medium Trucks:	57	.3	55.2		50.9	1	50	.2	57.	ŝ	57.8
Heavy Trucks:	70	.7	67.7		66.7	•	65	.6	72.	3	72.6
Vehicle Noise:	71	.5	68.6		67.4		66	.0	72.	9	73.2
Centerline Distant	ce to Noise Co	ontour (in feet)								
				70	dBA	65	dBA		60 dBA		55 dBA
			Ldn:		68		14	7	316	,	682
		C	NEL:		72		15	4	332	!	716

FHWA-F	RD-77-108 HIGH	IWAY NO	DISE F	PREDIC	TION M	DDEL	(9/12/2	021)		
Scenario: EA 2023 Road Name: Rialto Av. Road Segment: w/o Arrow					Project I Job Nu			owhead Wa	arehouse	÷
SITE SPECIFIC I	NPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data			S	ite Con	ditions (Hard =	= 10, S	oft = 15)		
Average Daily Traffic (Adt):	8,889 vehicle	es					Autos.	15		
Peak Hour Percentage:	10.13%			Me	dium Tru	cks (2	Axles).	15		
Peak Hour Volume:	900 vehicle	s		He	avy Truc	ks (3+	Axles).	15		
Vehicle Speed:	35 mph		1/	ehicle l	Miv					
Near/Far Lane Distance:	33 feet				icleType		Day	Evening	Night	Dailv
Site Data						utos:	71.9%		15.9%	. ,
Barrier Height:	0.0 feet			Me	edium Tr	ucks:	75.3%		17.7%	
Barrier Type (0-Wall, 1-Berm):	0.0 feet			F	leavy Tr	ucks:	60.4%	12.0%	27.6%	11.21%
Centerline Dist. to Barrier:	44.0 feet		-							
Centerline Dist. to Observer:	44.0 feet		N	oise Sc	ource Ele			eet)		
Barrier Distance to Observer:	0.0 feet				Autos		.000			
Observer Height (Above Pad):	5.0 feet				m Trucks		.297	Crada Ad	livotmon	
Pad Elevation:	0.0 feet			Heav	y Trucks	: 8	.004	Grade Ad	jusunen	. 0.0
Road Elevation:	0.0 feet		Li	ane Eq	uivalent	Distar	ice (in	feet)		
Road Grade:	0.0%				Autos	: 41	.094			
Left View:	-90.0 degree	es		Mediui	m Trucks	: 40	.879			
Right View:	90.0 degree	es		Heav	y Trucks	: 40	.900			
FHWA Noise Model Calculatio	ns									
VehicleType REMEL	Traffic Flow	Distar	псе	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos: 64.3	0 -1.81		1.17		-1.20		-4.61	0.0	000	0.00
Medium Trucks: 75.7			1.21		-1.20		-4.87		000	0.00
Heavy Trucks: 81.5	7 -10.71		1.21		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise Levels (wit		_					_			1151
VehicleType Leq Peak H			eq Eve	ening 58.5	Leq I	_		Ldn	_	NEL
	32.5 57.4	60.2 55.3		51.0		54. 50.		62.5 57.1		62.9 57.9
		67.8		66.8		50. 65.		72.4		72.
		68.7		67.5		66.	-	73.0		73.3
Centerline Distance to Noise (Contour (in feet)								
							_	00 10 1		
Centernine Distance to Noise (70 dE	BA	65 c	IBA .		60 dBA	55	dBA
Senterinie Distance to Noise (Ldn:	70 dE	<i>7</i> 0	65 c	<i>IBA</i> 150		323 323		695

		-77-108 HIGH	WAY	NOISE	PREDIC			•			
Scenari									whead Wa	arehouse	
	e: Rialto Av.					Job I	Number	14660			
Road Segmer	nt: w/o Arrowhe	ed Av.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
lighway Data					Site Cor	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	8,711 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium T	rucks (2	Axles):	15		
Peak H	our Volume:	882 vehicles	8		He	eavy Tru	ıcks (3+	Axles):	15		
Vel	hicle Speed:	35 mph		f	Vehicle	Mix					
Near/Far Lar	ne Distance:	33 feet		ŀ		icleTyp	е	Day	Evening	Night	Daily
ite Data							Autos:	71.9%	12.2%	15.9%	86.989
Rar	rier Height:	0.0 feet			М	edium 1	Trucks:	75.3%	7.0%	17.7%	1.929
Barrier Type (0-W	-	0.0				Heavy 1	Trucks:	60.4%	12.0%	27.6%	11.119
Centerline Dis	t. to Barrier:	44.0 feet		- 1	Noise S	E	lovetio	no (in f	2041		
Centerline Dist.	to Observer:	44.0 feet		- 1	Noise 3	Auto			et)		
Barrier Distance	to Observer:	0.0 feet			14-45	Auto m Truci		2.297			
Observer Height (Above Pad):	5.0 feet						3.004	Grade Ad	liustmont	
Pa	d Elevation:	0.0 feet			Hea	vy Truci	KS: E	3.004	Grade Ad	jusunem	. 0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivaler	nt Dista	nce (in	feet)		
F	Road Grade:	0.0%				Auto	os: 4°	1.094			
	Left View:	-90.0 degree	es		Mediu	m Truci	ks: 4(0.879			
	Right View:	90.0 degree	es		Hear	vy Truci	ks: 4(0.900			
HWA Noise Mode	l Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	snel	Barrier Att	en Ber	m Atten
Autos:	64.30	-1.90		1.1	7	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	75.75	-18.46		1.2	21	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	81.57	-10.83		1.2	21	-1.20		-5.50	0.0	000	0.00
Inmitigated Noise	Levels (with	out Topo and	barri	er atter	nuation)						
	Leq Peak Hou	r Leq Day	,	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	62.	-	60.1		58.4		54		62.		62.
Medium Trucks:	57.	-	55.2		50.9		50	-	57.	-	57.
Heavy Trucks:	70.		67.7		66.7		65		72.		72.
Vehicle Noise:	71.	5	68.6		67.4		66	.0	72.	9	73.
Centerline Distanc	e to Noise Co	ntour (in feet))								
			L	70	dBA	65	dBA	_	60 dBA		dBA
			Ldn:		68		14		317		682
			NFI:		72		15		333		717

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	IWAY	NOISE	PREDIC	TION M	ODEL	. (9/12/20	021)		
Road Nan	rio: EAP 2023 ne: Rialto Av. ent: w/o Arrowh	ed Av.						: S. Arro : 14660	whead Wa	arehouse	•
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	8,970 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2	Axles):	15		
Peak I	Hour Volume:	909 vehicle	s		He	avy Truc	ks (3+	Axles):	15		
Ve	ehicle Speed:	35 mph		F	Vehicle I	Miss					
Near/Far La	ane Distance:	33 feet		ŀ		icleType		Dav	Evening	Night	Daily
Site Data					* 01.11		lutos:	71.9%	0	15.9%	,
		0.0 feet			Me	edium Tr		75.3%		17.7%	
Barrier Type (0-V	rrier Height:	0.0 reet				Heavy Tr		60.4%	12.0%		11.11%
,,,,	ist. to Barrier:	44.0 feet		-		·					
Centerline Dist	to Observer:	44.0 feet		-	Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		0.000			
Observer Height	(Above Pad):	5.0 feet				m Trucks		2.297	0	E	
	ad Elevation:	0.0 feet			Heav	y Trucks	S 1	B.004	Grade Ad	ijustment	: 0.0
Ro	ad Elevation:	0.0 feet			Lane Equ	uivalent	Dista	nce (in i	feet)		
	Road Grade:	0.0%				Autos	3: 4	1.094			
	Left View:	-90.0 degree	es		Mediui	m Trucks	3: 4	0.879			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 4	0.900			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre.		Barrier At		rm Atten
Autos:				1.1		-1.20		-4.61		000	0.000
Medium Trucks:				1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	81.57	-10.71		1.2	!1	-1.20		-5.50	0.	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq E	vening	Leq I			Ldn		NEL
Autos:			60.2		58.6		-	1.9	62.	-	63.0
Medium Trucks:		7.4	55.3		51.0			0.3	57.		57.9
Heavy Trucks:).9	67.8		66.8			5.7	72.		72.7
Vehicle Noise:		1.6	68.7		67.5		66	5.1	73.	0	73.3
Centerline Distan	ce to Noise Co	ontour (in feet)			0.7	10.4				10.4
			L	70	dBA	65 c			60 dBA		dBA
		_	Ldn:		70		15		323		696
		C	NEL:		73		15)/	339	,	731

Wednesday, August 2, 2023

	FHWA-RD	-77-108 HIGH	WAY N	IOISE	PREDIC	TION N	IODEL (9	9/12/2	021)		
Road Nam	io: EAC 2023 ne: Rialto Av. nt: w/o Arrowhe	ed Av.					Name: S lumber:		owhead Wa	rehous	e
SITE S	SPECIFIC IN	PUT DATA				Ν	IOISE N	1ODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	9,121 vehicle	es					Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	dium Tr	ucks (2 A	(xles	: 15		
Peak H	lour Volume:	924 vehicles	S		He	avy Tru	cks (3+ A	(xles	: 15		
Ve	hicle Speed:	35 mph		H	Vehicle I	/liv					
Near/Far La	ne Distance:	33 feet		ŀ		cleType	,	Dav	Evening	Night	Daily
Site Data								71.99		15.99	_
Rai	rrier Height:	0.0 feet			Me	edium T	rucks:	75.39	6 7.0%	17.79	6 1.94%
Barrier Type (0-W		0.0			F	łeavy T	rucks:	60.4%	6 12.0%	27.69	6 11.21%
Centerline Dis		44.0 feet		-	M-! 0-			. /! /	41		
Centerline Dist.	to Observer:	44.0 feet		- 1	Noise So			•	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height (Above Pad):	5.0 feet				n Truck		297	Grade Adj	uotmor	4 0 0
Pa	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	004	Grade Adj	usuner	n. 0.0
Roa	ad Elevation:	0.0 feet			Lane Equ	ıivalen	t Distand	e (in	feet)		
1	Road Grade:	0.0%				Auto	s: 41.0	094			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 40.	379			
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.	900			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en Be	erm Atten
Autos:	64.30	-1.70		1.1	7	-1.20		-4.61	0.0	00	0.000
Medium Trucks:	75.75	-18.22		1.2	1	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	81.57	-10.59		1.2	11	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	atten	nuation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq E	vening	Leq	Night		Ldn	(CNEL
Autos:	62.	-	60.3		58.6		55.0		62.6		63.0
Medium Trucks:	57.	-	55.5		51.1		50.4		57.8		58.1
Heavy Trucks:	71.	-	67.9		66.9		65.8		72.5		72.9
Vehicle Noise:	71.	7	68.8		67.6		66.3		73.1		73.4
Centerline Distance	ce to Noise Co	ntour (in feet)					,			
				70	dBA	65	dBA		60 dBA	5	5 dBA
			Ldn:		71		152		328		707
		Ci	NEL:		74		160		345		743

		0-77-108 HIGH	IWAY	NOISE	PREDIC			•			
	o: HY 2040								whead Wa	arehous	е
	e: Rialto Av. nt: w/o Arrowhe	ad Au				JOD IV	umber.	14660			
	SPECIFIC IN	PULDATA			Site Co.	nditions			L INPUT	S	
Highway Data				3	site Cor	iaitions	(Hara				
Average Daily	. ,	10,033 vehicl	es					Autos:			
	Percentage:	10.13%				edium Tr		,			
	our Volume:	1,016 vehicle	S		He	eavy True	cks (3+	Axles):	15		
	hicle Speed:	35 mph		ı	/ehicle	Mix					
Near/Far Lar	ne Distance:	33 feet		<u> </u>	Ver	icleType	,	Day	Evening	Night	Daily
Site Data						,	Autos:	71.9%	12.2%	15.9%	86.85%
Rar	rier Height:	0.0 feet			M	ledium T	rucks:	75.3%	7.0%	17.7%	1.94%
Barrier Type (0-W		0.0				Heavy T	rucks:	60.4%	12.0%	27.6%	11.21%
Centerline Dis		44.0 feet			<i>i-i</i> 0	ource El		(! 6	41		
Centerline Dist.	to Observer:	44.0 feet		,	voise 3	Auto.			eet)		
Barrier Distance t	to Observer:	0.0 feet				m Truck		0.000 2.297			
Observer Height (Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	liuetmon	t 0.0
Pa	ad Elevation:	0.0 feet			пеа	vy Huck	S. C	5.004	Grade Au	jusunen	ι. υ.υ
Roa	ad Elevation:	0.0 feet		L	.ane Eq	uivalent	Dista	nce (in	feet)		
F	Road Grade:	0.0%				Auto	s: 4'	1.094			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 40	0.879			
	Right View:	90.0 degre	es		Hea	vy Truck	s: 40	0.900			
FHWA Noise Mode	el Calculations	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	snel	Barrier Att	en Be	rm Atten
Autos:	64.30	-1.29		1.17		-1.20		-4.61		000	0.00
Medium Trucks:	75.75	-17.81		1.21		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57	-10.18		1.21		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er atteni	uation)						
,,	Leq Peak Hou	.,.,		Leq Ev		,	Night		Ldn		NEL
Autos:	63		60.7		59.0		55		63.0		63.4
Medium Trucks:	58		55.9		51.6		50		58.2	_	58.
Heavy Trucks:	71		68.4		67.3		66	-	73.0	-	73.3
Vehicle Noise:	72	.1	69.2		68.0	1	66	.7	73.	5	73.8
Centerline Distanc	e to Noise Co	ntour (in feet)	70 a	(D.4		dBA		60 dBA	-	5 dBA
			Ldn:	70 a	1BA 75	65	ава 16		350 350		754 754
		_	NFI:		75 79		17		368		754
		C	IVEL.		79		17		300	,	192

	FHWA-RD	-77-108 HIGHW	AY NOIS	E PREDIO	CTION M	ODEL (9/12/2	021)		
Road Nan	rio: EAPC 2023 ne: Rialto Av. nt: w/o Arrowhe				.,	Name: umber:		whead Wa	arehouse	
SITE	SPECIFIC IN	PUT DATA			١	IOISE I	MODE	L INPUT	S	
Highway Data				Site Cor	nditions	(Hard =	10, S	oft = 15)		
Peak F	Traffic (Adt): Percentage: Hour Volume:	9,202 vehicles 10.13% 932 vehicles 35 mph		He	edium Tr eavy Tru	ucks (2		15		
	ne Distance:	33 feet		Vehicle			_	I I		
Site Data				Ver	icleType	Autos:	Day 71.9%	Evening 12.2%	Night 15.9%	86.97
	rrier Height: Vall, 1-Berm):	0.0 feet 0.0			ledium T Heavy T	rucks:	75.3% 60.4%	7.0%	17.7%	1.92
Centerline Di Centerline Dist.		44.0 feet 44.0 feet		Noise S				eet)		
Barrier Distance Observer Height P		0.0 feet 5.0 feet 0.0 feet			Auto m Truck vy Truck	s: 2.	000 297 004	Grade Ad	ljustment	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalen	Distan	ce (in	feet)		
	Road Grade: Left View: Right View:	0.0% -90.0 degrees 90.0 degrees			Auto m Truck vy Truck	s: 40.	.094 .879 .900			
FHWA Noise Mod			D: -		5 .1			D : 40		***
VehicleType Autos:	REMEL 64.30	Traffic Flow -1.66	Distance	.17	-1.20	Fresi	-4.61	Barrier Att	on Ber	m Atter
Medium Trucks:		-18.22		.21	-1.20		-4.87		000	0.00
Heavy Trucks:		-10.59		.21	-1.20		-5.50		000	0.0
Unmitigated Nois	e Levels (with	out Topo and ba	rrier atte	enuation)						
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq	Night		Ldn	CI	VEL
Autos:	62	.6 60.	.3	58.7		55.0	0	62.0	6	63
Medium Trucks:	57	.5 55.	.5	51.1		50.	4	57.	В	58
Heavy Trucks: Vehicle Noise:	71 71			66.9		65.8 66.3		72.5 73.		72 73
Centerline Distan	ce to Noise Co	ntour (in feet)								
		· · · · · ·) dBA	65	dBA	_	60 dBA		dBA
		I d	n.	71		152	,	320		70

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MO	DDEL	(9/12/2	021)		
Road Nar	rio: HYP 2040 ne: Rialto Av. ent: w/o Arrowh	ed Av.						: S. Arro : 14660	whead Wa	arehouse	
SITE	SPECIFIC IN	IPUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (i	Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	10,114 vehicle	s					Autos:	15		
Peak Hou	r Percentage:	10.13%			Me	dium Tru	cks (2	Axles):	15		
Peak I	Hour Volume:	1,025 vehicles	5		He	avy Truci	ks (3+	Axles):	15		
V	ehicle Speed:	35 mph		H	Vehicle I	Miv					
Near/Far La	ane Distance:	33 feet				icleType		Dav	Evening	Night	Daily
Site Data					****		utos:	71.9%	-	15.9%	
P.	arrier Heiaht:	0.0 feet			Me	edium Tru	ıcks:	75.3%	7.0%	17.7%	1.92%
Barrier Type (0-V		0.0 feet			F	leavy Tru	icks:	60.4%	12.0%	27.6%	11.12%
,, ,	ist to Barrier:	44.0 feet		-							
Centerline Dist	to Observer:	44.0 feet		F	Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		0.000			
Observer Height	(Above Pad):	5.0 feet				n Trucks.		2.297	0		
F	Pad Elevation:	0.0 feet			Heav	y Trucks		B.004	Grade Ad	jusuneni	0.0
Ro	oad Elevation:	0.0 feet			Lane Equ	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos.	: 4	1.094			
	Left View:	-90.0 degree	:S		Mediui	n Trucks	: 4	0.879			
	Right View:	90.0 degree	:S		Heav	y Trucks	: 4	0.900			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre.	snel	Barrier Att		m Atten
Autos		-1.25		1.1		-1.20		-4.61		000	0.000
Medium Trucks				1.2		-1.20		-4.87		000	0.000
Heavy Trucks.	81.57	-10.18		1.2	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atter	uation)						
VehicleType	Leq Peak Hou	ır Leq Day		Leq E	vening	Leq №	light		Ldn	C	VEL
Autos			60.7		59.1			5.4	63.0	-	63.5
Medium Trucks			55.9		51.6			0.8	58.	_	58.5
Heavy Trucks			68.4		67.3			6.2	73.		73.3
Vehicle Noise	: 72	2.2	69.3		68.0		66	5.7	73.	5	73.8
Centerline Distan	ce to Noise Co	ontour (in feet)									
			L	70	dBA	65 d			60 dBA		dBA
			Ldn:		75		16	-	350		754
		CI	VEL:		79		17	1	368	3	792

Wednesday, August 2, 2023

FHW	A-RD-	77-108 HIGH	WAY	NOIS	E PREI	DICTIO	MODE	L (9/12/:	2021)		
Scenario: E Road Name: Rialto Road Segment: w/o Mo		View Av.						e: S. Arı er: 1466	rowhead Wa	areho	ouse
SITE SPECIFI	CINP	UT DATA					NOIS	E MOD	EL INPUT	S	
Highway Data					Site C	onditio	ns (Har	d = 10, S	Soft = 15)		
Average Daily Traffic (A	tt):	9,153 vehicle	es					Autos	s: 15		
Peak Hour Percenta	ge: 1	0.13%				Medium	Trucks	(2 Axles): 15		
Peak Hour Volum	ne:	927 vehicles	S			Heavy 1	rucks (3	3+ Axles): 15		
Vehicle Spe	ed:	35 mph			Vahia	le Mix					
Near/Far Lane Distan	ce:	33 feet				ehicleT	mo	Dav	Evening	Nia	ht Dailv
Site Data						Cilidic i	Autos	. ,			.9% 86.85%
Barrier Heig	ha.	0.0 feet				Mediur	1 Trucks				.7% 1.94%
Barrier Type (0-Wall, 1-Ber		0.0 reet				Heav	/ Trucks	: 60.4	% 12.0%	27	.6% 11.21%
Centerline Dist. to Barr		44.0 feet									
Centerline Dist. to Observ		44.0 feet			Noise			ions (in	feet)		
Barrier Distance to Observ		0.0 feet					ıtos:	0.000			
Observer Height (Above Pa		5.0 feet			Me	dium Tri	icks:	2.297			
Pad Elevati	,	0.0 feet			Н	eavy Tro	icks:	8.004	Grade Ad	ljustn	nent: 0.0
Road Flevati		0.0 feet			I ane	Fauival	ent Dist	ance (in	feet)		
Road Gra		0.0%						41.094	,		
I eft Vie		-90.0 degree			Ma	dium Tri		40.879			
Right Vie		90.0 degree				eavy Tri		40.900			
rugin vic		30.0 degree	53			outy m		40.500			
FHWA Noise Model Calcula	tions										
VehicleType REME	_	Traffic Flow	Di	stance	Fir	ite Roa		esnel	Barrier Att	ten	Berm Atten
Autos: 6	4.30	-1.69		1.	17	-1.:		-4.61	1 0.0	000	0.000
Medium Trucks: 7	5.75	-18.21		1.	21	-1.:	20	-4.87	7 0.0	000	0.000
Heavy Trucks: 8	1.57	-10.58		1.	21	-1.	20	-5.50	0.0	000	0.000
Unmitigated Noise Levels (withou	ıt Topo and	barri	er atte	nuatio	n)					
VehicleType Leq Peak	Hour	Leq Day	′	Leg	Evening	g L	eq Nighi	f	Ldn		CNEL
Autos:	62.6	i	60.3		58	3.6	Ę	55.0	62.	6	63.0
Medium Trucks:	57.6	i	55.5		5	1.2		50.4	57.	8	58.1
Heavy Trucks:	71.0		68.0		66	6.9	6	55.8	72.	6	72.9
Vehicle Noise:	71.7	•	68.9		67	7.6	6	66.3	73.	1	73.4
Centerline Distance to Nois	e Con	tour (in feet)								
-				70	dBA		65 dBA		60 dBA		55 dBA
			Ldn:			71	1	153	329)	709
		C	NEL:		- 1	74	1	160	346	6	745

	FHWA-RI	0-77-108 HIGH	IWAY	NOISE	PREDIC	TION MC	DEL	(9/12/2	021)		
Road Nar	rio: EA 2023 ne: Rialto Av. ent: w/o Mounta	in View Av.				Project N Job Nu			owhead Wa	arehouse	•
SITE	SPECIFIC IN	IPUT DATA				NO	DISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (l	Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	9,428 vehicl	es					Autos:	15		
Peak Hou	Percentage:	10.13%			Me	dium Truc	cks (2	Axles).	15		
Peak I	Hour Volume:	955 vehicle	s		He	avy Truck	(S (3+	Axles).	15		
Ve	ehicle Speed:	35 mph		-	Vehicle I	Miv					
Near/Far La	ane Distance:	33 feet		-		icleType		Day	Evening	Night	Dailv
Site Data							ıtos:	71.9%			86.85%
D-	rrier Heiaht:	0.0 feet			М	edium Tru	icks:	75.3%	6 7.0%	17.7%	1.94%
Barrier Type (0-V		0.0			1	Heavy Tru	icks:	60.4%	6 12.0%	27.6%	11.21%
., .	ist. to Barrier:	44.0 feet		-							
Centerline Dist.	to Observer:	44.0 feet			Noise Sc	ource Ele		- '	eet)		
Barrier Distance		A de elle	Autos: m Trucks:		0.000 2.297						
Observer Height	(Above Pad):	5.0 feet				m Trucks: vy Trucks:			Grade Ad	liustmont	
F	ad Elevation:	0.0 feet			пеац	ry Trucks.	•	.004	Grade Ad	jusuneni	. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent l	Distai	nce (in	feet)		
	Road Grade:	0.0%				Autos:	4	.094			
	Left View:	-90.0 degre	es			m Trucks:).879			
	Right View:	90.0 degre	es		Heav	y Trucks:	40	0.900			
FHWA Noise Mod	lel Calculation	S									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Bei	m Atten
Autos:		-1.56		1.1	17	-1.20		-4.61		000	0.000
Medium Trucks:		-18.08		1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	81.57	-10.45		1.2	21	-1.20		-5.50	0.0	000	0.000
Unmitigated Nois										_	
VehicleType	Leq Peak Hou			Leq E	vening	Leq N	_		Ldn		NEL
Autos: Medium Trucks:	.7	60.4 55.6		58.8 51.3		55 50		62. 58.		63.2 58.2	
Heavy Trucks:			68.1		67.1		65		72.	-	73.0
Vehicle Noise:			69.0		67.8		66		73.		73.6
Centerline Distan	ce to Noise Co	ontour (in feet	:)								
		,		70	dBA	65 d	ВА	-	60 dBA	55	dBA
			Ldn:		72		15	6	336	i	723
		_	NFI:		76		16		353		760

	FHWA-RD	-77-108 HIGH	WAY N	IOISE	PREDIC	HOIT	MODEL	(9/12/2	021)		
Scenari	o: E+P					Projec	t Name:	S. Arro	whead Wa	arehouse	
Road Nam	e: Rialto Av.					Job I	Number.	14660			
Road Segmer	nt: w/o Mountai	n View Av.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard:	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	9,353 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium T	rucks (2	Axles):	15		
Peak H	our Volume:	948 vehicles	3		He	avy Tru	ıcks (3+	Axles):	15		
Vei	hicle Speed:	35 mph		-	Vehicle i	Mix					
Near/Far Lar	ne Distance:	33 feet		Ī		icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	86.15
Rar	rier Height:	0.0 feet			М	edium 1	Trucks:	75.3%	7.0%	17.7%	2.06
Barrier Type (0-W	-	0.0			1	Heavy 1	Trucks:	60.4%	12.0%	27.6%	11.79
Centerline Dis	st. to Barrier:	44.0 feet		- 1	Noise So	ource F	levatio	ns (in f	oet)		
Centerline Dist.	to Observer:	44.0 feet		Ľ	10/30 00	Auto		0.000	.01/		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truci		2.297			
Observer Height (A	Above Pad):	5.0 feet				vy Truci		3.004	Grade Ad	liustment	. 0 0
Pa	ad Elevation:	0.0 feet			Tical	ry Truci	13. C	5.004	0,000,10	juoumom	. 0.0
Roa	ad Elevation:	0.0 feet		1	Lane Eq	uivaler	ıt Distaı	nce (in	feet)		
F	Road Grade:	0.0%				Auto	os: 41	1.094			
	Left View:	-90.0 degree	es		Mediu	m Truci	ks: 4().879			
	Right View:	90.0 degree	es		Heav	y Truci	ks: 40	0.900			
FHWA Noise Mode	el Calculations										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	inel	Barrier Att	en Ber	m Atter
Autos:	64.30	-1.63		1.1	•	-1.20		-4.61		000	0.00
Medium Trucks:	75.75	-17.84		1.2	1	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	81.57	-10.27		1.2	1	-1.20		-5.50	0.0	000	0.00
Inmitigated Noise	•							_		1	
	Leq Peak Hour			Leq E	vening		Night		Ldn		NEL
Autos:	62.		60.4		58.7		55		62.0		63
Medium Trucks:	57.	-	55.8		51.5		50		58.	_	58
Heavy Trucks: Vehicle Noise:	71. 72.		68.3 69.1		67.3 67.9		66 66	•	72.9 73.4		73
Centerline Distanc					01.5		- 00		70.		7.0
semerime Distanc	e to Noise Co	nour (In reet)	<u> </u>	70 0	dBA	65	i dBA	1 6	60 dBA	55	dBA
			Ldn:		74	- 00	16	0	344		74

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MO	DEL	(9/12/2	021)		
Road Na	rio: EAP 2023 me: Rialto Av. ent: w/o Mounta	ain View Av.						: S. Arro : 14660	whead Wa	arehouse	1
SITE	SPECIFIC IN	IPUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Daily	/ Traffic (Adt):	9,628 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10.13%			Me	dium Tru	cks (2	Axles):	15		
Peak	Hour Volume:	975 vehicles	3		He	avy Truci	ks (3+	- Axles):	15		
V	ehicle Speed:	35 mph		1	Vehicle I	/liv					
Near/Far L	ane Distance:	33 feet		1		cleType	П	Dav	Evening	Night	Dailv
Site Data							ıtos:	71.9%	-	15.9%	. ,
D.	arrier Height:	0.0 feet			Me	edium Tru	icks:	75.3%	7.0%	17.7%	2.06%
Barrier Type (0-1		0.0			F	leavy Tru	icks:	60.4%	12.0%	27.6%	11.77%
,,,,	ist. to Barrier:	44.0 feet		-	Noise So	uraa Ela	rotio	no (in f	2041		
Centerline Dist	to Observer:	44.0 feet		1	Noise 30	Autos	_	0.000	el)		
Barrier Distance	e to Observer:	0.0 feet			Modium	n Trucks.		2.297			
Observer Height	(Above Pad):	5.0 feet				y Trucks.		3.004	Grade Ad	liuetmant	- 0.0
F	Pad Elevation:	0.0 feet								juou non	. 0.0
Ro	oad Elevation:	0.0 feet			Lane Equ				feet)		
	Road Grade:	0.0%				Autos.		1.094			
	Left View:	-90.0 degree				n Trucks		0.879			
	Right View:	90.0 degree	es		Heav	y Trucks	4	0.900			
FHWA Noise Mod	del Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre	snel	Barrier At		m Atten
Autos				1.1		-1.20		-4.61		000	0.000
Medium Trucks				1.2		-1.20		-4.87		000	0.000
Heavy Trucks	: 81.57	-10.15		1.2	21	-1.20		-5.50	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	er attei	nuation)						
VehicleType	Leq Peak Ho			Leq E	vening	Leq №	_		Ldn		NEL
Autos			60.5		58.8		55		62.		63.2
Medium Trucks			56.0		51.6		50		58.	-	58.6
Heavy Trucks			68.4		67.4			i.2	73.	-	73.3
Vehicle Noise			69.3		68.0		66	i.7	73.	5	73.8
Centerline Distar	ice to Noise C	ontour (in feet)	w-		05					
			1 -1	70	dBA	65 d			60 dBA		dBA
			Ldn: NFI:		76 79		16	-	351 368		755 794
		CI	VEL:		79		17	1	300)	794

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY N	IOISE	PREDIC	TION N	MODEL (S	9/12/20	021)		
Road Nam	io: EAC 2023 ne: Rialto Av. nt: w/o Mounta	ain View Av.					t Name: \$ lumber: *		whead Wa	arehous	e
SITE	SPECIFIC IN	IPUT DATA				1	NOISE N	/ODF	L INPUT	S	
Highway Data					Site Con						
Average Daily	Traffic (Adt):	9.660 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Ti	ucks (2 A	(xles	15		
Peak H	lour Volume:	979 vehicle	S		He	avy Tru	cks (3+ A	(xles	15		
Ve	hicle Speed:	35 mph		ŀ	Vehicle I	Miv					
Near/Far La	ne Distance:	33 feet		ŀ		icleType	2	Dav	Evening	Night	Daily
Site Data					VC//			71.9%		15.99	,
	rrier Height:	0.0 feet			М	edium 7		75.3%		17.79	
Barrier Type (0-W	-	0.0			1	Heavy 7	rucks:	60.4%	12.0%	27.69	% 11.21%
Centerline Di		44.0 feet		-							
Centerline Dist.		44.0 feet		4	Noise So			•	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height (Above Pad):	5.0 feet				m Truck		297	0		-4-00
	ad Elevation:	0.0 feet			Heav	y Truck	rs: 8.0	004	Grade Ad	justmei	n: 0.0
Ros	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distand	e (in i	feet)		
	Road Grade:	0.0%				Auto	s: 41.0	094			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 40.	879			
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.	900			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance		Road	Fresn	_	Barrier Att		erm Atten
Autos:	64.30	-1.45		1.1		-1.20		-4.61		000	0.000
Medium Trucks:	75.75			1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	81.57	-10.34		1.2	11	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	atten	nuation)						
VehicleType	Leq Peak Hou			Leq E	vening	Leq	Night		Ldn		CNEL
Autos:	62		60.5		58.9		55.2		62.8	-	63.3
Medium Trucks:		'.8	55.7		51.4		50.7		58.		58.3
Heavy Trucks:		.2	68.2		67.2		66.0		72.8		73.1
Vehicle Noise:	72	2.0	69.1		67.9		66.5		73.3	3	73.7
Centerline Distant	e to Noise Co	ontour (in feet)								
				70	dBA	65	dBA	6	60 dBA	_	5 dBA
			Ldn:		73		158		341		735
		C	NEL:		77		166		358		772

	FHWA-RE	0-77-108 HIGH	WAY N	IOISE	PREDIC	TION MO	DDEL	(9/12/2	021)		
Scenario Road Name Road Segmen		in View Av.				Project I Job Nu			owhead Wa	arehouse	•
SITE S	PECIFIC IN	IPUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (i	Hard =	= 10, S	oft = 15)		
Average Daily 7	raffic (Adt):	10,626 vehicle	es					Autos:	15		
Peak Hour F	Percentage:	10.13%			Me	dium Tru	cks (2	Axles).	15		
Peak Ho	our Volume:	1,076 vehicles	3		He	avy Truci	ks (3+	Axles).	15		
Veh	icle Speed:	35 mph		-	Vehicle I	Miv					
Near/Far Lan	e Distance:	33 feet				icleType		Day	Evening	Night	Daily
Site Data							utos:	71.9%	-	15.9%	
Pow	ier Height:	0.0 feet			Me	edium Tru	ıcks:	75.3%		17.7%	
Barrier Type (0-Wa		0.0 1001			F	leavy Tru	icks:	60.4%	6 12.0%	27.6%	11.21%
Centerline Dis		44.0 feet		-							
Centerline Dist. to		44.0 feet		4	Noise Sc	ource Ele			eet)		
Barrier Distance to		0.0 feet				Autos. m Trucks	-	.000			
	Observer Height (Above Pad): 5.0 feet						_	.297			
	d Elevation:	0.0 feet			Heav	y Trucks.	: 8	.004	Grade Ad	justment	: 0.0
Roa	d Elevation:	0.0 feet		7	Lane Eq	uivalent l	Distar	nce (in	feet)		
R	oad Grade:	0.0%				Autos.	41	.094			
	Left View:	-90.0 degree	es		Mediui	m Trucks.	40	.879			
	Right View:	90.0 degree	es		Heav	y Trucks.	40	.900			
FHWA Noise Mode	Calculation	S									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en Bei	m Atten
Autos:	64.30	-1.04		1.1	7	-1.20		-4.61	0.0	000	0.000
Medium Trucks:	75.75	-17.56		1.2	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	81.57	-9.93		1.2	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise			barrie	r atten	uation)						
	Leq Peak Hou			Leq E	vening	Leq N	_		Ldn		NEL
Autos:	63		61.0		59.3		55		63.2		63.7
Medium Trucks:	58	-	56.1		51.8		51.		58.	-	58.7
Heavy Trucks: Vehicle Noise:	71 72		68.6 69.5		67.6 68.3		66	-	73.2		73.5 74.1
Centerline Distance	to Noise Co										
Contentine Distance	110/38 00	our (iii ieet		70 (dBA	65 d	BA		60 dBA	55	dBA
			Ldn:		78		16	9	364		783
			VEL:		82						

Road Nam	io: EAPC 2023 ne: Rialto Av. nt: w/o Mountai	n View Av.						S. Arro 14660	owhead Wa	arehouse	
SITE	SPECIFIC IN	PUT DATA				Ν	OISE	MODE	L INPUT	S	
Highway Data				S	ite Cor	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily Peak Hour	. ,	9,860 vehicles 10.13%			Me	edium Tro	ıcks (2	Autos:			
	lour Volume:	999 vehicles			He	avy Truc	ks (3+	Axles):	15		
Ve	hicle Speed:	35 mph		ν	ehicle	Mix					
Near/Far La	ne Distance:	33 feet		F		icleType		Day	Evening	Night	Daily
Site Data							lutos:	71.9%	-	15.9%	
Ra	rrier Heiaht:	0.0 feet			М	edium Ti	ucks:	75.3%	7.0%	17.7%	2.06
Barrier Type (0-W		0.0				Heavy Ti	ucks:	60.4%	12.0%	27.6%	11.769
Centerline Di		44.0 feet			laina C	ouroo El	ovetio	no (in f	004)		
Centerline Dist.	to Observer:	44.0 feet		^	ioise S	ource El Auto:		ns (in 16).000	eet)		
Barrier Distance	to Observer:	0.0 feet			Modiu	Auto: m Truck:		2.297			
Observer Height ((Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	liustment	. 0 0
Pa	ad Elevation:	0.0 feet								juoumome	0.0
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 4°	1.094			
	Left View:	-90.0 degrees			Mediu	m Truck	s: 40	0.879			
	Right View:	90.0 degrees			Hear	vy Truck	s: 4(0.900			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Distan			Road	Fres		Barrier Att		m Atter
Autos:	64.30	-1.40		1.17		-1.20		-4.61		000	0.00
Medium Trucks:	75.75	-17.62		1.21		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57	-10.05		1.21		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise	•		$\overline{}$				A Contra	1	l dn		
VehicleType Autos:	Leq Peak Hou		0.6	eq Ev	ening 58.9		Night 55		Lan 62.		VEL 63
Medium Trucks:	58.		5.0 5.1		51.7		51		58.4		58
Heavy Trucks:	71.		3.5		67.5		66		73.		73
Vehicle Noise:	72.		9.4		68.1		66		73.		73
Centerline Distanc	ce to Noise Co.	ntour (in feet)									
		-		70 d	BA	65	dBA	-	60 dBA	55	dBA
			des		77		10		256		76

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGI	HWAY	NOIS	E PREDIC	TION M	ODEL	(9/12/2	021)		
Road Nan	rio: HYP 2040 ne: Rialto Av. nt: w/o Mounta	ain View Av.						S. Arro	whead Wa	rehouse	
SITE	SPECIFIC IN	NPUT DATA				Ν	OISE	MODE	L INPUTS	6	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	10,826 vehic	les					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tri	ıcks (2	Axles):	15		
Peak F	Hour Volume:	1,097 vehicle	es		He	avy Truc	cks (3+	Axles):	15		
Ve	ehicle Speed:	35 mph			Vehicle I	Miv					
Near/Far La	ne Distance:	33 feet				icleType	Т	Dav	Evening	Night	Daily
Site Data					* 077		lutos:	71.9%	-		86.24%
Do.	rrier Heiaht:	0.0 feet			M	edium Ti		75.3%	7.0%	17.7%	
Barrier Type (0-W		0.0 feet			F	Heavy Ti	ucks:	60.4%	12.0%	27.6%	11.71%
Centerline Di		44.0 feet									
Centerline Dist.		44.0 feet			Noise So				eet)		
Barrier Distance		0.0 feet				Auto		0.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		2.297			
	ad Elevation:	0.0 feet			Heav	y Truck	S: 8	3.004	Grade Adj	ustment	: 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 4°	1.094			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 40	0.879			
	Right View:	90.0 degre	es		Heav	y Truck	s: 40	0.900			
FHWA Noise Mod	el Calculation	IS									
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Atte		m Atten
Autos:				1.1		-1.20		-4.61	0.0		0.000
Medium Trucks:				1.3		-1.20		-4.87	0.0		0.000
Heavy Trucks:	81.57	-9.66	5	1.3	21	-1.20		-5.50	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	l barri	er atte	nuation)						
VehicleType	Leq Peak Ho		,	Leq E	vening	Leq	Night		Ldn		NEL
Autos:		3.3	61.0		59.3		55		63.3		63.7
Medium Trucks:		3.5	56.4		52.1		51		58.8		59.0
Heavy Trucks:		1.9	68.9		67.9		66		73.5		73.8
Vehicle Noise:	72	2.6	69.7		68.5		67	.2	74.0	1	74.3
Centerline Distan	ce to Noise C	ontour (in fee	t)							_	
			[70	dBA	65	dBA		60 dBA	55	dBA
		_	Ldn:		81		17	-	378		814
		C	NEL:		86		18	4	397		855

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAYN	NOISE	PREDIC	TION M	ODEL (9/1 <i>2/2</i>	021)			
	io: E ne: Rialto Av.			10101	TREDIO	Project		S. Arr	owhead	Wareh	iouse	
Road Segmen	nt: e/o Mounta	in View Av.										
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	ИODE	L INP	UTS		
Highway Data					Site Con	ditions ((Hard =	10, S	oft = 15	i)		
Average Daily	Traffic (Adt):	8,946 vehicle	es					Autos	: 15			
Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2 i	4xles)	: 15			
Peak H	lour Volume:	906 vehicle	3		He	avy Truc	cks (3+)	4xles)	: 15			
Ve	hicle Speed:	35 mph		ŀ	Vehicle N	lix						
Near/Far La	ne Distance:	33 feet		ŀ		cleType		Dav	Eveni	na Ni	ght	Daily
Site Data							lutos:	71.99			5.9%	86.85%
Rai	rrier Heiaht:	0.0 feet			Me	dium Tr	ucks:	75.39	6 7.0	0% 1	7.7%	1.94%
Barrier Type (0-W		0.0			F	leavy Tr	ucks:	60.49	6 12.0	0% 2	7.6%	11.21%
Centerline Dis		44.0 feet		-								
Centerline Dist.	to Observer:	44.0 feet		-	Noise So				eet)			
Barrier Distance	to Observer:	0.0 feet				Autos		000				
Observer Height (Above Pad):	5.0 feet				n Trucks		297	Grada	Adjust	mont.	0.0
Pa	ad Elevation:	0.0 feet			Heav	y Trucks	s. 8.	004	Grade	Aujust	men.	0.0
Roa	ad Elevation:	0.0 feet			Lane Equ	iivalent	Distan	ce (in	feet)			
1	Road Grade:	0.0%				Autos	s: 41.	094				
	Left View:	-90.0 degree	es		Mediur	n Trucks	s: 40.	879				
	Right View:	90.0 degree	es		Heav	y Trucks	3: 40.	900				
FHWA Noise Mode	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresr	nel	Barrier	Atten	Berr	n Atten
Autos:	64.30			1.1		-1.20		-4.61		0.000		0.000
Medium Trucks:	75.75			1.2		-1.20		-4.87		0.000		0.000
Heavy Trucks:	81.57	-10.68		1.2	21	-1.20		-5.50		0.000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	r atter	nuation)							
VehicleType	Leq Peak Ho	ur Leq Day	,	Leq E	vening	Leq I	Night		Ldn		C٨	IEL
Autos:	62	2.5	60.2		58.5		54.9	9		62.5		62.9
Medium Trucks:	57	7.5	55.4		51.1		50.3	3		57.7		58.0
Heavy Trucks:	70).9	67.9		66.8		65.7	7		72.5		72.8
Vehicle Noise:	71	1.6	68.8		67.5		66.2	2		73.0		73.3
Centerline Distant	e to Noise C	ontour (in feet)									
				70	dBA	65 (dBA		60 dBA		55	dBA
			Ldn:		70		150			324		698
		C	VEL:		73		158			341		734

	FHWA-RE	0-77-108 HIGH	WAY NO	ISE P	PREDIC	TION MC	DEL	(9/12/2	021)		
Road Nam	io: EA 2023 le: Rialto Av. nt: e/o Mounta	in View Av.				Project N Job Nu			owhead Wa	arehouse	•
SITE S	SPECIFIC IN	IPUT DATA				NO	DISE	MODE	L INPUT	S	
Highway Data				Si	ite Con	ditions (l	Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	9,214 vehicle	s					Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	dium Truc	cks (2	Axles)	: 15		
Peak H	lour Volume:	933 vehicles	3		He	avy Truck	(S (3+	Axles)	: 15		
Ve	hicle Speed:	35 mph		1/4	ehicle l	Miv					
Near/Far La	ne Distance:	33 feet		Ve		icleType		Day	Evening	Night	Daily
Site Data					*011		itos:	71.99	-	15.9%	
Por	rrier Height:	0.0 feet			М	edium Tru	icks:	75.39	6 7.0%	17.7%	
Barrier Type (0-W		0.0 reet			1	Heavy Tru	icks:	60.49	6 12.0%	27.6%	11.219
Centerline Dis		44.0 feet									
Centerline Dist.		44.0 feet		No	oise So	ource Ele			eet)		
Barrier Distance				Autos:	-	.000					
Observer Height (5.0 feet				m Trucks:		.297			
	ad Elevation:	0.0 feet			Heav	y Trucks:	. 8	.004	Grade Ad	justment	: 0.0
Roa	ad Elevation:	0.0 feet		Lá	ane Eq	uivalent l	Distar	nce (in	feet)		
1	Road Grade:	0.0%				Autos:	41	.094			
	Left View:	-90.0 degree	s		Mediu	m Trucks:	40	.879			
	Right View:	90.0 degree	s		Heav	y Trucks:	40	.900			
FHWA Noise Mode	el Calculation										
VehicleType	REMEL	Traffic Flow	Distan		Finite	Road	Fres		Barrier Att		m Atten
Autos:	64.30	-1.66		1.17		-1.20		-4.61		000	0.00
Medium Trucks:	75.75	-18.18		1.21		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57	-10.55		1.21		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise								1			
VehicleType Autos:	Leq Peak Hou			q Eve	ening 58.7	Leq N	iignt 55		Ldn 62		NEL
Medium Trucks:	57		60.3 55.5		51.2		50 50	-	57.	-	63. ⁻ 58. ⁻
Heavy Trucks:	71		55.5 68.0		67.0		50 65		72.		72.9
Vehicle Noise:	71		68.9		67.7		66		73.		73.
Centerline Distanc	e to Noise Co	ontour (in feet))								
		,		70 dE	ВА	65 d	BA		60 dBA	55	dBA
			Ldn:		71		15	3	331		712
			VEL:		75		16		347		748

Scenario Road Name	: Rialto Av.					.,		e: S. Arr r: 14660	owhead Wa	arehouse	9
Road Segment	: e/o Mountai	n View Av.									
	PECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Haro	i = 10, S	oft = 15)		
Average Daily T	raffic (Adt):	9,113 vehicle	es					Autos	: 15		
Peak Hour P	Percentage:	10.13%			Me	dium T	rucks (2 Axles)	: 15		
Peak Ho	ur Volume:	923 vehicles	3		He	avy Tro	ucks (3	+ Axles)	: 15		
Vehi	icle Speed:	35 mph		V	ehicle i	Miv					
Near/Far Lane	e Distance:	33 feet		ľ		icleTyp	e	Day	Evening	Night	Daily
Site Data						,,	Autos:	,	-		86.44
	ier Height:	0.0 feet			М	edium '	Trucks:	75.39	6 7.0%	17.7%	2.019
Barrier Type (0-Wa	-	0.0			- 1	Heavy '	Trucks:	60.49	6 12.0%	27.6%	11.55
Centerline Dist		44.0 feet			·- · O		-1	(! !	41		
Centerline Dist. to	Observer:	44.0 feet		N	orse so			ons (in t	eet)		
Barrier Distance to	Observer:	0.0 feet				Aut		0.000			
Observer Height (A	bove Pad):	5.0 feet				m Truc		2.297	Grade Ad	livotmon	4.00
Pac	d Elevation:	0.0 feet			Heat	y Truc	KS.	8.004	Grade Ad	ijusuri c ri	L. U.U
Road	d Elevation:	0.0 feet		L	ane Eq	uivaler	nt Dista	ance (in	feet)		
R	oad Grade:	0.0%				Aut	os: 4	11.094			
	Left View:	-90.0 degree	es		Mediu	m Truc	ks: 4	10.879			
	Right View:	90.0 degree	es		Heav	y Truc	ks: 4	10.900			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fre	esnel	Barrier At	ten Be	rm Atter
Autos:	64.30	-1.73		1.17		-1.20		-4.61	0.	000	0.00
Medium Trucks:	75.75	-18.06		1.21		-1.20		-4.87	0.	000	0.00
Heavy Trucks:	81.57	-10.47		1.21		-1.20		-5.50	0.	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barrier	attenu	ıation)						
VehicleType L	.eq Peak Hou	r Leq Day	· L	.eq Ev	ening	Lec	n Night		Ldn	С	NEL
Autos:	62.	-	60.3		58.6		5	5.0	62.	5	63
Medium Trucks:	57.	7	55.6		51.3		5	0.6	58.	0	58
Heavy Trucks:	71.		68.1		67.1		6	5.9	72.		73
Vehicle Noise:	71.	8	68.9		67.7		6	6.4	73.	2	73
Centerline Distance	to Noise Co	ntour (in feet))					1			
				70 di		65	dBA		60 dBA		dBA
			Ldn:		72			55	334		72
			VFI:		76			63	351		75

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOIS	E PREDIC	TION MO	DEL	(9/12/2	021)		
Road Na	rio: EAP 2023 me: Rialto Av. ent: e/o Mounta	in View Av.						: S. Arro : 14660	whead Wa	arehouse	1
SITE	SPECIFIC IN	IPUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Daily	/ Traffic (Adt):	9,381 vehicle	es					Autos:	15		
Peak Hou	r Percentage:	10.13%			Me	dium Tru	cks (2	Axles):	15		
Peak	Hour Volume:	950 vehicle	3		He	avy Truci	ks (3+	- Axles):	15		
V	ehicle Speed:	35 mph			Vehicle I	/liv					
Near/Far L	ane Distance:	33 feet				cleType		Dav	Evening	Night	Dailv
Site Data							utos:	71.9%	-	15.9%	
D	arrier Height:	0.0 feet			Me	edium Tru	icks:	75.3%	7.0%	17.7%	2.01%
Barrier Type (0-1		0.0 feet			F	leavy Tru	icks:	60.4%	12.0%	27.6%	11.54%
,,,,	ist. to Barrier:	44.0 feet									
Centerline Dist	to Observer:	44.0 feet			Noise So				eet)		
Barrier Distance	e to Observer:	0.0 feet			A decellor	Autos. n Trucks.		0.000 2.297			
Observer Height	(Above Pad):	5.0 feet				n Trucks. y Trucks.		2.297 3.004	Grade Ad	liuctmont	. 0.0
F	Pad Elevation:	0.0 feet								ijusuneni	. 0.0
Ro	oad Elevation:	0.0 feet			Lane Equ	ıivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos.	4	1.094			
	Left View:	-90.0 degree	es		Mediur	n Trucks	4	0.879			
	Right View:	90.0 degree	es		Heav	y Trucks	4	0.900			
FHWA Noise Mod	del Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre	snel	Barrier At		m Atten
Autos				1.1		-1.20		-4.61		000	0.000
Medium Trucks				1.3		-1.20		-4.87		000	0.000
Heavy Trucks	: 81.57	-10.35		1.3	21	-1.20		-5.50	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atte	nuation)						
VehicleType	Leq Peak Ho			Leq E	ening	Leq №	_		Ldn		NEL
Autos			60.4		58.7		55		62.		63.1
Medium Trucks			55.7		51.4		50		58.		58.3
Heavy Trucks			68.2		67.2		66		72.	-	73.1
Vehicle Noise			69.1		67.9		66	i.5	73.	3	73.6
Centerline Distar	ice to Noise C	ontour (in feet)					_			
			L	70	dBA	65 d			60 dBA		dBA
			Ldn:		73		15	-	340	-	733
		C	NEL:		77		16	ю	358	3	770

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY N	DISE F	REDIC	TION MC	DEL (9	9/12/2	021)		
	o: EAC 2023 e: Rialto Av. nt: e/o Mounta	in View Av.				Project N Job Nu			whead Wa	rehous	se
SITE S	SPECIFIC IN	IPUT DATA				NC	DISE N	1ODE	L INPUTS	3	
Highway Data				Si	te Con	ditions (F	lard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	9,446 vehicle	es				/	Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Truc	cks (2 A	(xles	15		
Peak H	our Volume:	957 vehicle	S		He	avy Truck	is (3+ A	(xles	15		
Vel	hicle Speed:	35 mph		V	ehicle I	Nix					
Near/Far Lar	ne Distance:	33 feet		-		cleType		Dav	Evening	Night	Daily
Site Data							itos:	71.9%		15.9	_
Rar	rier Height:	0.0 feet			Me	edium Tru	cks:	75.3%	7.0%	17.7	% 1.94%
Barrier Type (0-W	-	0.0			F	leavy Tru	cks:	60.4%	12.0%	27.6	% 11.21%
Centerline Dis		44.0 feet		N	oise So	urce Ele	vations	(in f	eet)		
Centerline Dist.		44.0 feet				Autos		000	,		
Barrier Distance t		0.0 feet			Mediur	n Trucks:		297			
Observer Height (,	5.0 feet				y Trucks:		004	Grade Adj	ustme	nt: 0.0
	d Elevation:	0.0 feet		-							
	d Elevation:	0.0 feet		Lá	ane Equ	uivalent L			reet)		
F	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degree				n Trucks:					
	Right View:	90.0 degree	es		Heav	y Trucks:	40.9	900			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresn	_	Barrier Atte	_	erm Atten
Autos:	64.30			1.17		-1.20		-4.61	0.0		0.000
Medium Trucks:	75.75			1.21		-1.20		-4.87	0.0		0.000
Heavy Trucks:	81.57			1.21		-1.20		-5.50	0.0	100	0.000
Unmitigated Noise		-									
	Leq Peak Ho			eq Eve		Leq N	_		Ldn		CNEL
Autos:			60.4		58.8		55.1		62.7		63.2
Medium Trucks:			55.6		51.3		50.6		58.0		58.2
Heavy Trucks:			68.1		67.1		65.9		72.7		73.0
Vehicle Noise:			69.0		67.8		66.4		73.2	!	73.6
Centerline Distanc	e to Noise C	ontour (in feet)	70 dE	RA .	65 di	RA	,	60 dBA	-	55 dBA
			I dn:	, 5 UL	72	00 0	156	<u> </u>	336		724
		C	NEL:		76		164		353		761

Average Daily Traffic (Adt): 10,391 vehicles Peak Hour Percentage: 10,13% vehicles Peak Hour Volume: 1,053 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 33 feet Vehicle Type Day Evening Night Daily Daily Near/Far Lane Distance: 33 feet Vehicle Type Day Evening Night Daily Near/Far Lane Distance: 33 feet Vehicle Type Day Evening Night Daily Near/Far Lane Distance: 10.00 Near Lane Equivalent Distance: 10.00 Near Lane Equi		FHWA-R	D-77-108 HIG	HWAY	NOISE	PREDIC	TION M	ODEL ((9/12/2	021)		
Average Daily Traffic (Adt):	Road Nam	e: Rialto Av.	ain View Av.							whead Wa	arehouse	•
Average Daily Traffic (Adt): 10,391 vehicles Peak Hour Percentage: 10,13% Medium Trucks (2 Axles): 15 Peak Hour Volume: 1,053 vehicles Vehicle Speed: 35 mph Vehicle Speed: 35 mph Vehicle Type Day Evening Night Daily Daily Night Daily Near/Far Lane Distance: 33 feet Vehicle Type Day Evening Night Daily Near/Far Lane Distance: 33 feet Vehicle Type Day Evening Night Daily Near/Far Lane Distance: 10.00 Near/Far Lane Distance: 10.00 Near/Far Lane Distance: 10.00 Near/Far Lane Distance to Observer: 0.0 feet Auto: 10.00 Near/Far Lane Distance to Observer: 0.0 feet Auto: 10.00 Near Lane Distance to Observer: 0.0 feet Auto: 10.00 Near Lane Distance to Observer: 0.0 feet Auto: 10.00 Near Lane Distance (in feet) Noise Source Elevations: (in feet) Near Lane Distance (in feet) Near Lane D	SITE S	SPECIFIC IN	NPUT DATA				N	OISE	MODE	L INPUT	S	
Peak Hour Percentage: 10.13%	Highway Data					Site Cor	ditions	(Hard =	: 10, Sc	oft = 15)		
Peak Hour Volume: 1,053 vehicles Vehicle Speed: 35 mph Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day Evening Night Daily Day	Average Daily	Traffic (Adt):	10,391 vehic	les					Autos:	15		
Vehicle Speed: Near/Far Lane Distance: 33 feet Vehicle Mix Vehicle Type Day Evening Night Daily	Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2	Axles):	15		
Near/Far Lane Distance: 33 feet VehicleType Day Evening Night Daily VehicleType Day Evening Night Daily Daily VehicleType Day Evening Night Daily Daily VehicleType Day Evening Night Daily Daily VehicleType Day Evening Night Daily Daily Night Daily Nigh	Peak H	lour Volume:	1,053 vehicl	es		He	avy Truc	cks (3+	Axles):	15		
Near/Far Lane Distance: 33 feet VehicleType Day Evening Night Daily	Ve	hicle Speed:	35 mph		-	Vehicle	Mix					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 44.0 feet Centerline Dist. to Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Dist. for Observer: 44.0 feet Centerline Distance Cen	Near/Far La	ne Distance:	33 feet		F							
Barrier Type (0-Wall, 1-Berm):	Site Data						F	Autos:	71.9%	12.2%	15.9%	86.859
Barrier Type (0-Wall, 1-Berm):	Bai	rrier Heiaht:	0.0 feet			M	edium Tr	rucks:	75.3%	7.0%	17.7%	1.949
Centerline Dist. to Observer: Barrier Distance to Observer: 0.0 feet Content of Distance to Observer: 0.0 feet Content of Distance to Observer: 0.0 feet Content of Distance to Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Content of Distance Content of Dis			0.0				Heavy Tr	rucks:	60.4%	12.0%	27.6%	11.219
Autos: 0.000 Autos: 0.000 Barrier Atten Barrier Atten Barrier Atten Barrier Autos: 0.000 Barrier Autos: 0.000 Autos: 0.000 Barrier Atten Barrier Autos: 0.000 Bar	Centerline Dis	st. to Barrier:	44.0 feet			Noise S	ource Fl	evation	s (in f	oet)		
Barrier Distance to Observer: 0.0 feet Autos: 1.00 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees Right View: 90.0 degrees Heavy Trucks: 40.879 Heavy Trucks: 40.900 PHINT PRINT Centerline Dist.	to Observer:	44.0 feet		F.	110/30 0				,,,,			
Diserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Cancella (Freshold)	Barrier Distance	to Observer:	0.0 feet			Mediu						
Pad Elevation: 0.0 feet	Observer Height (Above Pad):	5.0 feet							Grade Ad	liustmen	: 0.0
Road Grade: 0.0%					_						,	
Left View:						Lane Eq				feet)		
Right View: 90.0 degrees Heavy Trucks: 40.900	,											
FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atter												
VehicleType		Right View:	90.0 degr	ees		неа	y Trucks	s: 40	.900			
Autos: 64.30	FHWA Noise Mode				•							
Medium Trucks: 75.75								Fres				
Heavy Trucks: 81.57 -10.03 1.21 -1.20 -5.50 0.000 0.000												
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL												
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 63.1 60.9 59.2 55.6 63.1 63.8 Medium Trucks: 58.1 56.0 51.7 51.0 58.4 58 Heavy Trucks: 71.5 68.5 67.5 66.4 73.1 73 Vehicle Noise: 72.3 69.4 68.2 66.8 73.7 74 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 77 166 358 77	-						-1.20		-5.50	0.0	000	0.00
Autos: 63.1 60.9 59.2 55.6 63.1 63 Medium Trucks: 58.1 56.0 51.7 51.0 58.4 58 Heavy Trucks: 71.5 68.5 67.5 66.4 73.1 73 Vehicle Noise: 72.3 69.4 68.2 66.8 73.7 74 Centerline Distance to Noise Contour (In feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 77 166 358 77									,			
Medium Trucks: 58.1 56.0 51.7 51.0 58.4 58 Heavy Trucks: 71.5 68.5 67.5 66.4 73.1 73 Vehicle Noise: 72.3 69.4 68.2 66.8 73.7 74 Centerline Distance to Noise Contour (in feet) Ldn: 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 77 166 358 77				,	Leq E		,				_	
Heavy Trucks: 71.5 68.5 67.5 66.4 73.1 73 Vehicle Noise: 72.3 69.4 68.2 66.8 73.7 74 Centerline Distance to Noise Contour (in feet)									-			
Vehicle Noise: 72.3 69.4 68.2 66.8 73.7 74 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 77 166 358 77									-			
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 77 166 358 77									-			74.
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 77 166 358 77	Centerline Distanc	e to Noise C	ontour (in fee	et)								
	Como mile Distant		omour (m rec	-,	70 (dBA	65 (dBA	6	60 dBA	55	dBA
CNEL: 81 175 376 81				Ldn:		77		166	3	358	;	772
			(CNEL:		81		175	5	376		811

Road Name	o: EAPC 2023 e: Rialto Av. t: e/o Mountain	ı View Av.				.,	t Name: lumber:		whead Wa	irehouse	•
	SPECIFIC INF			T		-	JOISE N	40DE	L INPUTS		
lighway Data	I ECH IC HVI	OIDAIA			Site Con						
Average Daily 1	raffic (Adt):	9.613 vehicle	ıs.					Autos:	15		
Peak Hour I	. ,	10.13%			Me	dium Ti	ucks (2)	Axles):	15		
	our Volume:	974 vehicles					cks (3+)				
	icle Speed:	35 mph		-				/			
Near/Far I ar		33 feet		-	Vehicle I				1		
					Veh	icleType		Day	Evening	Night	Daily
ite Data							Autos:	71.9%		15.9%	
Bari	rier Height:	0.0 feet				edium 1		75.3%		17.7%	
Barrier Type (0-Wa	all, 1-Berm):	0.0			,	Heavy 1	rucks:	60.4%	12.0%	27.6%	11.539
Centerline Dis	t. to Barrier:	44.0 feet		f	Noise So	ource E	levation	s (in f	eet)		
Centerline Dist. t	o Observer:	44.0 feet		f		Auto		000	,		
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck		297			
Observer Height (A	Above Pad):	5.0 feet				vy Truck		004	Grade Ad	iustment	: 0.0
Pa	d Elevation:	0.0 feet				•					
	d Elevation:	0.0 feet			Lane Eq				feet)		
F	Road Grade:	0.0%				Auto		094			
	Left View:	-90.0 degree	:S			m Truck		879			
	Right View:	90.0 degree	:S		Heav	y Truck	s: 40.	900			
HWA Noise Mode	l Calculations										
VehicleType		Traffic Flow	Dis	stance		Road	Fresr		Barrier Att		rm Atten
Autos:	64.30	-1.49		1.1		-1.20		-4.61		000	0.00
Medium Trucks:	75.75	-17.83		1.2		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57	-10.24		1.2		-1.20		-5.50	0.0	000	0.00
Inmitigated Noise VehicleType	•						A.Contact	_	Ldn		NEL
Venicie i ype Autos:	Leq Peak Hour 62.8	, ,	60.5	Leq E	vening 58.8	_	Night 55.2	_	Lan 62.8		NEL 63.
Medium Trucks:	57.9		55.8		51.5		50.8		58.2		58.
Heavy Trucks:	71.3	-	68.3		67.3		66.1		72.9		73.
Vehicle Noise:	71.3		69.2		68.0		66.6		73.4		73.
Centerline Distanc	e to Noise Cor	ntour (in feet)	1								
				70	dBA	65	dBA	(60 dBA	55	dBA
			–				101				
			Ldn:		75		161		346		74

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOIS	E PREDIC	TION M	ODEL	(9/12/2	021)		
Road Nam	io: HYP 2040 ne: Rialto Av. nt: e/o Mounta	ain View Av.						S. Arro	whead Wa	rehouse	
SITE	SPECIFIC IN	NPUT DATA				Ν	OISE	MODE	L INPUTS	6	
Highway Data					Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	10,558 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tri	icks (2	Axles):	15		
Peak H	lour Volume:	1,070 vehicle	s		He	avy Truc	cks (3+	Axles):	15		
Ve	hicle Speed:	35 mph			Vehicle I	Miv					
Near/Far La	ne Distance:	33 feet				icleType		Dav	Evening	Night	Daily
Site Data					* 077		lutos:	71.9%			86.50%
Po	rrier Heiaht:	0.0 feet			M	edium Ti		75.3%	7.0%	17.7%	2.00%
Barrier Type (0-W		0.0 reet			F	Heavy Ti	ucks:	60.4%	12.0%	27.6%	11.50%
Centerline Di		44.0 feet									
Centerline Dist.		44.0 feet			Noise So				eet)		
Barrier Distance		0.0 feet				Auto		0.000			
Observer Height ((Above Pad):	5.0 feet				m Truck		2.297			
	ad Elevation:	0.0 feet			Heav	y Truck	S: 8	3.004	Grade Adj	ustment	0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 4	1.094			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 4	0.879			
	Right View:	90.0 degree	es		Heav	y Truck	s: 4i	0.900			
FHWA Noise Mode	el Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre		Barrier Atte		m Atten
Autos:	64.30			1.1		-1.20		-4.61	0.0		0.000
Medium Trucks:	75.75			1.3		-1.20		-4.87	0.0		0.000
Heavy Trucks:	81.57	-9.85		1.3	21	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise			barri	er atte	nuation)						
VehicleType	Leq Peak Ho	, ,		Leq E	vening	Leq	Night		Ldn		VEL
Autos:		3.2	60.9		59.2		55		63.2		63.6
Medium Trucks:		3.3	56.2		51.9		51	-	58.6		58.8
Heavy Trucks:		1.7	68.7		67.7		66		73.3		73.6
Vehicle Noise:		2.5	69.6		68.4		67	.0	73.8		74.1
Centerline Distant	ce to Noise C	ontour (in feet)								
			L	70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		79		17		368		792
		C	NEL:		83		17	9	386		832

	FHWA-RD	-77-108 HIGH	WAY NO	ISE	PREDIC	TION N	IODEL (9	9/12/2	2021)		
	io: E ne: Rialto Av. nt: w/o Sierra V	Vy.					t Name: \$ lumber: *		owhead Wa	rehous	se
SITE	SPECIFIC IN	PUT DATA				1	NOISE N	/IODE	L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	10,254 vehicle	es				,	Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	dium Tı	ucks (2 A	(xles	: 15		
Peak H	lour Volume:	1,039 vehicles	S		He	avy Tru	cks (3+ A	(xles	: 15		
Ve	hicle Speed:	35 mph		ŀ	Vehicle I	Niv					
Near/Far La	ne Distance:	33 feet		ŀ		cleType	9	Dav	Evening	Night	Daily
Site Data								71.99		15.9	
Rai	rrier Height:	0.0 feet			Me	edium 7	rucks:	75.39	6 7.0%	17.7	% 1.94%
Barrier Type (0-W		0.0			F	leavy 7	rucks:	60.49	6 12.0%	27.6	% 11.21%
Centerline Dis		44.0 feet		ŀ					,		
Centerline Dist.	to Observer:	44.0 feet		ŀ	Noise So			_	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height (Above Pad):	5.0 feet				n Truck		297 204	Grade Ad	iuctmo	nt: 0 0
Pa	ad Elevation:	0.0 feet		L	Heav	y Truck	S: 8.0	JU4	Grade Adj	usune	n. 0.0
Roa	ad Elevation:	0.0 feet			Lane Equ	ıivalen	t Distand	e (in	feet)		
1	Road Grade:	0.0%				Auto	s: 41.0	094			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 40.	879			
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.	900			
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite	Road	Fresn	el	Barrier Atte	en B	erm Atten
Autos:	64.30	-1.19		1.1	7	-1.20		-4.61	0.0	00	0.000
Medium Trucks:	75.75	-17.71		1.2		-1.20		-4.87			0.000
Heavy Trucks:	81.57	-10.08		1.2	11	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise	e Levels (witho	out Topo and	barrier a	tter	nuation)						
VehicleType	Leq Peak Hou			eq E	vening	Leq	Night		Ldn		CNEL
Autos:	63.		60.8		59.1		55.5		63.1		63.5
Medium Trucks:	58.		56.0		51.7		50.9		58.3		58.6
Heavy Trucks: Vehicle Noise:	71. 72.		68.5 69.3		67.4		66.3		73.1 73.6		73.4
		_			68.1		66.8	•	73.6	•	73.9
Centerline Distance	e to Noise Co	ntour (in feet)	70	dD4	65	dBA		60 dB4		E dDA
			I dn:	70	dBA 76	65	<i>aBA</i> 165		60 dBA 355	٤	55 dBA 765
			Lan: NEL:		80		173		373		803
		C	VEL.		80		1/3		3/3		803

	FHWA-RD	-77-108 HIGH	IWAY	NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
Road Nam	io: EA 2023 ne: Rialto Av. nt: w/o Sierra V	Vy.						S. Arro 14660	whead Wa	arehouse	1
SITE S	SPECIFIC IN	PUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard:	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	10,562 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium Tr	ucks (2	Axles):	15		
Peak H	lour Volume:	1,070 vehicle	s		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	35 mph			Vehicle	Miv					
Near/Far La	ne Distance:	33 feet		F		icleType	9	Dav	Evening	Night	Dailv
Site Data							Autos:	71.9%		15.9%	86.85%
Rai	rrier Height:	0.0 feet			M	ledium T	rucks:	75.3%	7.0%	17.7%	1.94%
Barrier Type (0-W		0.0				Heavy T	rucks:	60.4%	12.0%	27.6%	11.219
Centerline Dis		44.0 feet		H	Noise S	auraa E	lovetio	no (in f	2041		
Centerline Dist.	to Observer:	44.0 feet		Ε.	voise 3	Auto		0.000	et)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck		2.297			
Observer Height ((Above Pad):	5.0 feet				m Truck vy Truck	-	3.004	Grade Ad	liustmont	. 0.0
Pa	ad Elevation:	0.0 feet			пеа	vy Truck	.s. c	5.004	Grade Au	jusuneni	. 0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distai	nce (in i	feet)		
I	Road Grade:	0.0%				Auto	s: 4'	1.094			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 40	0.879			
	Right View:	90.0 degre	es		Hea	vy Truck	s: 40	0.900			
FHWA Noise Mode	el Calculations	3									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	snel	Barrier Att	en Bei	m Atten
Autos:	64.30	-1.06		1.1		-1.20		-4.61	0.0	000	0.00
Medium Trucks:	75.75	-17.58		1.2		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57	-9.96		1.2	1	-1.20		-5.50	0.0	000	0.00
Unmitigated Noise			barri	er atten	uation)						
VehicleType	Leq Peak Hou			Leq E			Night		Ldn		NEL
Autos:	63.		60.9		59.3		55		63.2		63.
Medium Trucks:	58.	_	56.1		51.8		51		58.	-	58.
Heavy Trucks:	71.	-	68.6		67.6		66		73.2		73.
Vehicle Noise:	72.	-	69.5		68.3		66	.9	73.	/	74.
Centerline Distanc	ce to Noise Co	ntour (in feet)	70	dBA	65	dBA		30 dBA		dBA
			Ldn:	70 (78	65	<i>ава</i> 16		362 362		<i>aba</i> 780
		CNFI:								819	
		C	VLL.		82 177 380						018

Road Nan	rio: E+P ne: Rialto Av. ent: w/o Sierra \	Ny.				.,	Name: lumber:		whead Wa	arehouse	
SITE	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	= 10, Sc	oft = 15)		
	Traffic (Adt): Percentage: Hour Volume:	10,378 vehicle 10.13% 1,051 vehicles				dium Tr avy Tru		,			
	ehicle Speed:	35 mph		1	Vehicle i	Mix					
Near/Far La	ane Distance:	33 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	86.85%
Barrier Type (0-V		0.0 feet 0.0				edium T Heavy T		75.3% 60.4%		17.7% 27.6%	1.94% 11.21%
	ist. to Barrier:	44.0 feet		7	Noise So	ource E	levation	ıs (in fe	eet)		
Centerline Dist.		44.0 feet				Auto		.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2	297			
Observer Height	,,	5.0 feet			Heav	y Truck	s: 8	004	Grade Ad	justment	0.0
-	ad Elevation:	0.0 feet		L							
	ad Elevation:	0.0 feet		4	Lane Eq				reet)		
	Road Grade:	0.0%				Auto		.094			
	Left View: Right View:	-90.0 degree 90.0 degree				m Truck ⁄y Truck	10	.879 .900			
FHWA Noise Mod	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dist	tance		Road	Fres		Barrier Att	en Ber	m Atten
Autos:		-1.14		1.1		-1.20		-4.61		000	0.00
Medium Trucks:	75.75	-17.65		1.2		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	81.57	-10.03		1.2	1	-1.20		-5.50	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and I	oarrie	r atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day		Leq E	vening	Leq	Night		Ldn	CI	VEL
Autos:	00		80.9		59.2		55.		63.		63.
Medium Trucks:			6.0		51.7		51.	-	58.4		58.
Heavy Trucks: Vehicle Noise:			88.5 89.4		67.5 68.2		66. 66.	•	73.		73. 74.
Centerline Distan										-	
Centernine Distan	re in Moise Co	mour (iii ieet)		70 (dBA	65	dBA	6	60 dBA	55	dBA

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HI	GHWAY	NOISE	E PREDIC	TION M	ODEL	. (9/12/20	021)		
Road Nan	rio: EAP 2023 ne: Rialto Av. ent: w/o Sierra	Wy.						: S. Arro : 14660	whead Wa	arehouse	
SITE	SPECIFIC IN	JPUT DAT	Α			N	OISE	MODE	L INPUT	S	
Highway Data					Site Con						
Average Daily	Traffic (Adt):	10,686 veh	nicles					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2	Axles):	15		
Peak I	lour Volume:	1,082 vehi	cles		He	avy Truc	ks (3+	- Axles):	15		
Ve	ehicle Speed:	35 mph		-	Vehicle I	Miss					
Near/Far La	ne Distance:	33 feet		-		icleType	Т	Dav	Evening	Night	Daily
Site Data					* 077		utos:	71.9%	0	15.9%	,
		0.0 fee			M	edium Tr		75.3%		17.7%	
Barrier Type (0-V	rrier Height:	0.0 ree	τ			Heavy Tr		60.4%	12.0%		11.21%
,,,,	ist. to Barrier:	44.0 fee	t								
Centerline Dist.		44.0 fee	-		Noise Sc				eet)		
Barrier Distance		0.0 fee	-			Autos		0.000			
Observer Height	(Above Pad):	5.0 fee	t			m Trucks		2.297	0	E	
	ad Elevation:	0.0 fee	t		Heav	y Trucks		B.004	Grade Ad	ijustment	. 0.0
Ro	ad Elevation:	0.0 fee	t	ı	Lane Eq	uivalent	Dista	nce (in i	feet)		
	Road Grade:	0.0%		ĺ		Autos	: 4	1.094			
	Left View:	-90.0 deg	grees		Mediu	m Trucks	: 4	0.879			
	Right View:	90.0 deg	grees		Heav	y Trucks	: 4	0.900			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flo		stance	Finite		Fre.		Barrier At		rm Atten
Autos:				1.1		-1.20		-4.61		000	0.000
Medium Trucks:				1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	81.57	-9.	.91	1.2	21	-1.20		-5.50	0.	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou		,	Leq E	vening	Leq I			Ldn		NEL
Autos:		3.3	61.0		59.3			5.7	63.	-	63.7
Medium Trucks:		3.2	56.2		51.8		51		58.	-	58.8
Heavy Trucks:		1.7	68.6		67.6			6.5	73.		73.5
Vehicle Noise:		2.4	69.5		68.3		66	6.9	73.	8	74.1
Centerline Distan	ce to Noise Co	ontour (in f	eet)							_	
			[70	dBA	65 c			60 dBA		dBA
			Ldn:		79		16		365		786
			CNEL:		83		17	8	383	3	826

Wednesday, August 2, 2023 Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY N	IOISE	PREDIC	TION MO	DDEL (9	9/12/2	021)			
	o: EAC 2023 e: Rialto Av. nt: w/o Sierra	Wy.				Project I Job Nu			owhead V	Vareh	ouse	
SITE S	SPECIFIC IN	IPUT DATA				NO	DISE N	/ODE	L INPU	TS		
Highway Data					Site Cond	ditions (i	Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	10,794 vehicle	es					Autos.	15			
Peak Hour	Percentage:	10.13%			Med	dium Tru	cks (2 A	Axles).	15			
Peak H	our Volume:	1,093 vehicle	3		Hea	avy Truci	ks (3+ A	(xles	15			
Ve	hicle Speed:	35 mph		H	Vehicle N	liv						
Near/Far Lai	ne Distance:	33 feet		H		cleType		Dav	Evening	Nic	tht	Daily
Site Data					VCIII			71.9%				86.85%
	rier Heiaht:	0.0 feet			Me	dium Tru		75.3%			.7%	1.94%
Barrier Type (0-W		0.0 feet			H	leavy Tru	icks:	60.4%	6 12.09	6 27	.6%	11.21%
Centerline Dis		44.0 feet		-								
Centerline Dist.		44.0 feet		- 1	Noise So			•	eet)			
Barrier Distance		0.0 feet				Autos.		000				
Observer Height (Above Pad):	5.0 feet				n Trucks.		297				
	d Elevation:	0.0 feet			Heav	Trucks.	8.0	004	Grade A	lajustr	nent:	0.0
	d Elevation:	0.0 feet			Lane Equ	ivalent i	Distand	e (in	feet)			
F	Road Grade:	0.0%				Autos.	41.0	094				
	Left View:	-90.0 degree	es		Mediun	n Trucks.	40.	879				
	Right View:	90.0 degree	es		Heav	/ Trucks.	40.	900				
FHWA Noise Mode	l Calculation	s										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier A	ltten	Bern	n Atten
Autos:	64.30			1.1		-1.20		-4.61		0.000		0.000
Medium Trucks:	75.75			1.2		-1.20		-4.87		0.000		0.000
Heavy Trucks:	81.57	-9.86		1.2	21	-1.20		-5.50	(0.000		0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	atter	nuation)							
VehicleType	Leq Peak Ho	ur Leq Day	,	Leq E	vening	Leq N	light		Ldn		CN	EL
Autos:	63	3.3	61.0		59.4		55.7		63	3.3		63.8
Medium Trucks:	58	3.3	56.2		51.9		51.1		58	3.5		58.8
Heavy Trucks:	71	1.7	68.7		67.7		66.5		73	3.3		73.6
Vehicle Noise:	72	2.5	69.6		68.4		67.0)	73	3.8		74.1
Centerline Distance	e to Noise C	ontour (in feet)									
				70	dBA	65 d	BA	- (60 dBA		55 c	1BA
			Ldn:		79		170		36			791
		C	VEL:		83		179		38	36		831

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGI	HWAY	NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
Road Nam	io: HY 2040 le: Rialto Av. nt: w/o Sierra	Wy.					Name: lumber:		owhead Wa	arehouse	
SITE	SPECIFIC IN	IPUT DATA				١	IOISE	MODE	L INPUT	S	
Highway Data					Site Cor	nditions	(Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	11,873 vehic	les					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium Tr	ucks (2	Axles).	15		
Peak H	lour Volume:	1,203 vehicle	es		He	eavy Tru	cks (3+	Axles).	15		
Ve	hicle Speed:	35 mph		-	Vehicle	Miv					
Near/Far La	ne Distance:	33 feet		F		icleType	,	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	6 12.2%	15.9%	86.85%
Rai	rrier Height:	0.0 feet			M	ledium T	rucks:	75.3%	7.0%	17.7%	1.94%
Barrier Type (0-W		0.0				Heavy T	rucks:	60.4%	6 12.0%	27.6%	11.21%
Centerline Di	st. to Barrier:	44.0 feet			Noise S	ourco E	lovatio	ne (in f	not)		
Centerline Dist.	to Observer:	44.0 feet			WOISE S	Auto		0.000	eei)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck		.297			
Observer Height (Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	iustmen	- 0.0
Pa	ad Elevation:	0.0 feet								Juoumom	. 0.0
Roa	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distai	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 41	.094			
	Left View:	-90.0 degre	es			m Truck).879			
	Right View:	90.0 degre	es		Hea	vy Truck	s: 40	0.900			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Bei	m Atten
Autos:	64.30			1.1		-1.20		-4.61		000	0.00
Medium Trucks:	75.75		-	1.2		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57	-9.45	5	1.2	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise										_	
VehicleType	Leq Peak Ho		,	Leq E	vening		Night		Ldn	_	NEL
Autos:		3.7	61.4		59.8		56		63.7		64.2
Medium Trucks:	58		56.6		52.3		51		59.0		59.2
Heavy Trucks: Vehicle Noise:	72	2.1	69.1 70.0		68.1 68.8		66 67		73.7		74.0
Centerline Distance					00.0		- 51	• •	. 7.2	-	,
Centernile Distant	e to Noise Ci	untour (in ree	ı)	70 (dBA	65	dBA		60 dBA	55	dBA
			Ldn:		84		18	2	391		843
	CNEL:					89 191 411 8					

Scenario: EA	NDC 2022					Drois -	· Nome:	C Ar	whead Wa	robous -	
Road Name: Ri						.,	lumber:		wnead wa	renouse	
Road Segment: w/						JOD I	iumber:	14660			
SITE SPEC	CIFIC INP	ULDAIA			Site Con				L INPUTS	5	
· · ·					Site Con	uilions	•				
Average Daily Traffi	. ,	0,918 vehicle	S					Autos:			
Peak Hour Perce		0.13%					ucks (2)				
Peak Hour V		,106 vehicles			He	avy Iru	cks (3+)	Axles):	15		
Vehicle		35 mph		Ī	Vehicle I	Иiх					
Near/Far Lane Di	stance:	33 feet		Ī	Veh	icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	86.85%
Barrier I	Hoiaht.	0.0 feet			M	edium 7	rucks:	75.3%	7.0%	17.7%	1.94%
Barrier Type (0-Wall, 1-	-	0.0			1	Heavy 7	rucks:	60.4%	12.0%	27.6%	11.21%
Centerline Dist. to		44.0 feet		-					-1		
Centerline Dist. to Ob		44.0 feet		-	Noise So				eet)		
Barrier Distance to Ob	server:	0.0 feet				Auto		000			
Observer Height (Abov	e Pad):	5.0 feet				m Truck		297			
Pad Fle	,	0.0 feet			Heav	y Truck	s: 8.	004	Grade Adj	ustment	0.0
Road Ele	evation:	0.0 feet			Lane Eq	uivalen	t Distan	ce (in i	feet)		
Road	Grade:	0.0%				Auto	s: 41.	094			
Le	ft View:	-90.0 degree	s		Mediu	m Truck	s: 40.	879			
Righ	nt View:	90.0 degree			Heav	y Truck	s: 40.	900			
FHWA Noise Model Cal	culations										
		Traffic Flow	Dis	stance		Road	Fresr		Barrier Atte		m Atten
Autos:	64.30	-0.92		1.1	•	-1.20		-4.61	0.0		0.000
Medium Trucks:	75.75	-17.43		1.2		-1.20		-4.87	0.0		0.000
Heavy Trucks:	81.57	-9.81		1.2	!1	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise Lev	•		_							,	
// /	Peak Hour	Leq Day	_	Leq E	vening	_	Night		Ldn		VEL
Autos:	63.4		61.1		59.4		55.8		63.4		63.8
Medium Trucks:	58.3		56.2		51.9		51.2	-	58.6		58.8
Heavy Trucks:	71.8		68.7		67.7		66.6		73.3		73.6
Vehicle Noise:	72.5		69.6		68.4		67.0)	73.9)	74.2
Centerline Distance to	Noise Con	tour (in feet)	_		10.4						10.4
				70	dBA	65	dBA	1 6	60 dBA	55	dBA
			Ldn: VFI:		80 84		172 180		370 389		797 838

Wednesday, August 2, 2023

FHW	A-RD-	77-108 HIGH\	WAY	NOISE	PREDIC	TION MO	DDEL (9/12/2	021)		
Scenario: HYP 2 Road Name: Rialto Road Segment: w/o Sie	Av.	/y.				Project I Job Nu			owhead Wa	rehouse	
SITE SPECIFI	C INF	PUT DATA				N	DISE I	MODE	L INPUTS	3	
Highway Data					Site Cor	ditions (Hard =	: 10, S	oft = 15)		
Average Daily Traffic (Ad	dt): 1	12,014 vehicles	s					Autos	15		
Peak Hour Percentag	ge: 1	10.13%			Me	dium Tru	cks (2	Axles)	: 15		
Peak Hour Volun	ne: '	1,217 vehicles			He	avy Truc	ks (3+	Axles)	: 15		
Vehicle Spec	ed:	35 mph		-	Vehicle						
Near/Far Lane Distan	ce:	33 feet		-		icleType		Dav	Evening	Night	Dailv
Site Data				_	ven		utos:	71.99		15.9%	
						A edium Trı		75.39		17.7%	1.96%
Barrier Heig		0.0 feet				Heavy Tri		60.49			11.31%
Barrier Type (0-Wall, 1-Bern		0.0				leavy III	JUNO.	00.47	0 12.070	21.076	11.5176
Centerline Dist. to Barri		44.0 feet			Noise S	ource Ele	vation	s (in f	eet)		
Centerline Dist. to Observ		44.0 feet				Autos	: 0.	.000			
Barrier Distance to Observ		0.0 feet			Mediu	m Trucks	: 2	297			
Observer Height (Above Pa		5.0 feet			Hear	y Trucks	: 8	.004	Grade Adj	ustment	0.0
Pad Elevati Road Elevati		0.0 feet 0.0 feet		ŀ	I ano Eo	uivalent	Dietan	co (in	foot)		
Road Elevati Road Gra				ŀ	Lanc Lq	Autos		.094	reer)		
Left Vie		0.0%	_		Modiu	m Trucks		.879			
		-90.0 degrees				n Trucks vy Trucks		.900			
Right Vie	₽W:	90.0 degrees	S		пеа	ry Trucks	. 40	.900			
FHWA Noise Model Calcula	_										
VehicleType REME		Traffic Flow	Dis	tance		Road	Fresi		Barrier Atte		m Atten
	4.30	-0.51		1.1		-1.20		-4.61	0.0		0.000
	5.75	-16.97		1.2		-1.20		-4.87	0.0		0.000
Heavy Trucks: 8	1.57	-9.36		1.2	21	-1.20		-5.50	0.0	100	0.000
Inmitigated Noise Levels (
VehicleType Leq Peal				Leq E	vening	Leq N			Ldn		VEL
Autos:	63.8		31.5		59.8		56.		63.8		64.2
Medium Trucks:	58.8	-	56.7		52.4		51.	-	59.1		59.3
Heavy Trucks:	72.2		59.2		68.2		67.	_	73.8		74.1
Vehicle Noise:	73.0		70.1		68.9		67.	5	74.3	3	74.6
Centerline Distance to Nois	e Cor	ntour (in feet)	Ţ	70	dBA	05	(D.4	_	00 -ID4		-10.4
			L	70		65 a			60 dBA	55	dBA
			Ldn:		85		184		397		854
		CN	IEL:		90 193 417						898

FHWA-	RD-77-108 HIC	HWAY	NOISE	PREDIC	CTION M	ODEL (9/12/2	021)		
Scenario: E Road Name: Rialto Av Road Segment: e/o Sierr	-					Name: umber:		whead Wa	arehou	se
SITE SPECIFIC	INPUT DATA	Ą			N	OISE I	MODE	L INPUT	S	
Highway Data			5	Site Cor	nditions ((Hard =	: 10, Sc	oft = 15)		
Average Daily Traffic (Adt)	7,317 vehi	cles					Autos:	15		
Peak Hour Percentage	10.13%			Me	edium Tru	icks (2	Axles):	15		
Peak Hour Volume	741 vehic	les		He	eavy Truc	ks (3+	Axles):	15		
Vehicle Speed			ı	/ehicle	Mix					
Near/Far Lane Distance	33 feet			Vel	icleType		Day	Evening	Nigh	t Daily
Site Data					A	lutos:	71.9%	12.2%	15.9	% 86.85%
Barrier Height	. 0.0 feet			M	ledium Tr	ucks:	75.3%	7.0%	17.7	% 1.94%
Barrier Type (0-Wall, 1-Berm)					Heavy Tr	ucks:	60.4%	12.0%	27.6	% 11.21%
Centerline Dist. to Barrier	44.0 feet		^	loise S	ource Ele	evation	s (in fe	eet)		
Centerline Dist. to Observer	11.01000		F		Autos		.000	,		
Barrier Distance to Observer				Mediu	m Trucks		297			
Observer Height (Above Pad)					vy Trucks		.004	Grade Ad	justme	ent: 0.0
Pad Elevation	0.0 1001		-							
Road Elevation	0.0 1001		L	.ane Eq	uivalent			reet)		
Road Grade	0.070			14-45	Autos		.094			
Left View	00.0 009				m Trucks vy Trucks		.879			
Right View	90.0 deg	rees		пеа	vy Hucks	s. 40	.900			
FHWA Noise Model Calculati										
VehicleType REMEL	Traffic Flov	_	stance		Road	Fresi		Barrier Att	_	Berm Atten
Autos: 64.			1.17		-1.20		-4.61		000	0.000
Medium Trucks: 75.		-	1.21		-1.20		-4.87		000	0.000
Heavy Trucks: 81.			1.21		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise Levels (w									,	
VehicleType Leq Peak F			Leq Ev			Night		Ldn		CNEL
	61.6	59.3		57.7		54.	-	61.6	-	62.1
Medium Trucks:	56.6	54.5		50.2		49.	-	56.9	-	57.1
· —	70.0 70.8	67.0		66.0		64.		71.0		71.9
				66.7		65.	3	72.	1	72.0
Centerline Distance to Noise	Contour (in fe	et)	70 a	IRΔ	65.0	HRΔ		SO dBA		55 dBA
		I dn:	70 0	61	000	132		283		611
		CNEL:		64		138	-	298		642

	FHWA-RD	-77-108 HIGH	IWAY	NOISE	PREDIC	CTION N	IODEL ((9/12/20	021)		
Scenario: E Road Name: R Road Segment: e,	tialto Av.	'y.					Name: lumber:		whead Wa	irehouse	1
SITE SPE	CIFIC IN	PUT DATA				N	IOISE	MODE	L INPUTS	3	
Highway Data					Site Cor	nditions	(Hard =	: 10, So	ft = 15)		
Average Daily Traft	fic (Adt):	7,536 vehicle	es					Autos:	15		
Peak Hour Perd	centage:	10.13%			Me	edium Tr	ucks (2	Axles):	15		
Peak Hour	Volume:	763 vehicle	s		He	eavy Tru	cks (3+	Axles):	15		
Vehicle	Speed:	35 mph		-	Vehicle	Miv					
Near/Far Lane D	istance:	33 feet		-		icleType		Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	86.85%
Rarrier	Height:	0.0 feet			М	ledium T	rucks:	75.3%	7.0%	17.7%	1.94%
Barrier Type (0-Wall,		0.0				Heavy T	rucks:	60.4%	12.0%	27.6%	11.21%
Centerline Dist. to	Barrier:	44.0 feet			Noise So	ource F	levation	s (in fe	et)		
Centerline Dist. to O	bserver:	44.0 feet		H		Auto		.000			
Barrier Distance to O	bserver:	0.0 feet			Mediu	m Truck		.297			
Observer Height (Abor	ve Pad):	5.0 feet				vy Truck		.004	Grade Ad	iustment	0.0
Pad E	levation:	0.0 feet									
Road E	levation:	0.0 feet			Lane Eq	uivalen	t Distan	ce (in f	eet)		
Road	d Grade:	0.0%				Auto		.094			
Le	eft View:	-90.0 degree	es			m Truck		.879			
Rig	ht View:	90.0 degree	es		Hear	vy Truck	s: 40	.900			
FHWA Noise Model Ca	alculations			-							
	REMEL	Traffic Flow	Di	stance		Road	Fres		Barrier Atte		m Atten
Autos:	64.30	-2.53		1.1		-1.20		-4.61		000	0.000
Medium Trucks:	75.75	-19.05		1.2		-1.20		-4.87		000	0.000
Heavy Trucks:	81.57	-11.42		1.2	1	-1.20		-5.50	0.0	000	0.000
Unmitigated Noise Lev											
	Peak Houi			Leq E	vening	,	Night		Ldn		NEL
Autos:	59.5		57.8		54.	-	61.7		62.2		
Medium Trucks:	54.6 67.1		50.3		49.		57.0		57.2		
Heavy Trucks: Vehicle Noise:		66.1 66.8		65. 65.		71.7 72.3		72.0 72.6			
Centerline Distance to	70.		68.0		23.0				. 2.0		. 2.0
Centernine Distance to	NOISE CO	illour (In reet	,	70	dBA	65	dBA	6	0 dBA	55	dBA
			Ldn:		62		134	1	289	•	623

	FHWA-RI	D-77-108 HIGH	WAY N	OISE	PREDIC	CTION M	ODEL (9/12/2	021)		
Road Nan	io: E+P ne: Rialto Av. nt: e/o Sierra \	Ny.					Name: umber:		whead Wa	rehouse	•
SITE	SPECIFIC IN	IPUT DATA				N	IOISE I	MODE	L INPUT	S	
Highway Data					Site Cor	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	7,398 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	edium Tr	ucks (2	Axles):	15		
Peak F	lour Volume:	749 vehicles	8		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	35 mph		-	Vehicle	Miv					
Near/Far La	ne Distance:	33 feet		-		icleType		Dav	Evenina	Niaht	Dailv
Site Data							Autos:	71.9%			87.009
Pa	rrier Height:	0.0 feet			М	edium T	rucks:	75.3%	7.0%	17.7%	1.919
Barrier Type (0-W		0.0				Heavy T	rucks:	60.4%	12.0%	27.6%	11.099
Centerline Di		44.0 feet		L							
Centerline Dist.		44.0 feet		1	Noise S				eet)		
Barrier Distance		0.0 feet				Auto		000			
Observer Height		5.0 feet				m Truck		297			
	ad Flevation:	0.0 feet			Hear	vy Truck	s: 8.	004	Grade Ad	iustment	: 0.0
Ro	ad Flevation:	0.0 feet			Lane Eq	uivalen	Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 41	.094			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 40	.879			
	Right View:	90.0 degree			Hear	vy Truck	s: 40	900			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresi	_	Barrier Att	en Ber	m Atten
Autos:	64.30	-2.60		1.1	7	-1.20		-4.61	0.0	000	0.00
Medium Trucks:	75.75			1.2		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57	-11.55		1.2	1	-1.20		-5.50	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou	- , ,	_	.eq E	vening		Night		Ldn		NEL
Autos:	61		59.4		57.7		54.		61.7		62.
Medium Trucks:	56		54.5		50.2		49.	-	56.9		57.
Heavy Trucks: Vehicle Noise:	70	-	67.0 67.9		66.0		64. 65.		71.6		71. 72.
Centerline Distan	ce to Noise Co	ontour (in feet)								
comenine Distant		Jui (iii ieet,	,	70	dBA	65	dBA	(60 dBA	55	dBA
			Ldn:		61		132	,	284		611

Wednesday, August 2, 2023

	FHWA-R	D-77-108 HIGH	IWAY	NOISI	E PREDIC	TION M	ODEL	. (9/12/2	021)		
Road Nan	rio: EAP 2023 ne: Rialto Av. ent: e/o Sierra	Wy.						: S. Arro : 14660	whead Wa	arehouse	
SITE	SPECIFIC IN	NPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con						
Average Daily	Traffic (Adt):	7,617 vehicl	es					Autos:	15		
Peak Hour	Percentage:	10.13%			Me	dium Tru	icks (2	2 Axles):	15		
Peak I	Hour Volume:	772 vehicle	es.		He	avy Truc	ks (3-	+ Axles):	15		
Ve	ehicle Speed:	35 mph			Vehicle I	Miv					
Near/Far La	ane Distance:	33 feet				icleType	- 1	Dav	Evening	Night	Daily
Site Data							utos:	71.9%	-	15.9%	
D.	rrier Height:	0.0 feet			M	edium Tr	ucks:	75.3%	7.0%	17.7%	1.92%
Barrier Type (0-V		0.0 feet			F	Heavy Tr	ucks:	60.4%	12.0%	27.6%	11.09%
,, ,	ist. to Barrier:	44.0 feet									
Centerline Dist.	to Observer:	44.0 feet			Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		0.000			
Observer Height	(Above Pad):	5.0 feet				m Trucks		2.297	Crada As	livotmont	
P	ad Elevation:	0.0 feet			Heav	y Trucks		8.004	Grade Ad	ijusimeni	0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%				Autos	: 4	1.094			
	Left View:	-90.0 degre	es		Mediu	m Trucks	: 4	0.879			
	Right View:	90.0 degre	es		Heav	y Trucks	: 4	0.900			
FHWA Noise Mod	el Calculation	IS									
VehicleType	REMEL	Traffic Flow		stance		Road	Fre	snel	Barrier At		m Atten
Autos:				1.1		-1.20		-4.61		000	0.000
Medium Trucks:				1.3		-1.20		-4.87		000	0.000
Heavy Trucks:				1.2		-1.20		-5.50	0.	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Ho		_	Leq E	vening	Leq I			Ldn		VEL
Autos:	-	1.8	59.5		57.8		-	1.2	61.		62.2
Medium Trucks:	6.7 0.2	54.6 67.1		50.3			9.6	57.	-	57.2	
Heavy Trucks: Vehicle Noise:		66.1			5.0	71.		72.0			
		0.9	68.0		66.8		65	5.4	72.	3	72.6
Centerline Distan	ce to Noise C	ontour (in fee	t)	70	dBA	65 (4D A	-	60 dBA	55	dBA
			I dn:	70	62 62	03 (15A 13		289		623
		C	NFI:		65		14		304		655

Wednesday, August 2, 2023 Wednesday, August 2, 2023

	FHWA-RD	0-77-108 HIGH	WAY NO	DISE	PREDIC	TION M	ODEL (9/12/2	021)			
Road Nam	io: EAC 2023 ne: Rialto Av. nt: e/o Sierra V					Project		S. Arr	owhead W	/areh	ouse	
SITE	SPECIFIC IN	PUT DATA				N	OISE I	MODE	L INPU	TS		
Highway Data					Site Cond	ditions	(Hard =	10, S	oft = 15)			
Average Daily	Traffic (Adt):	7,768 vehicle	es					Autos	: 15			
Peak Hour	Percentage:	10.13%			Med	dium Tru	icks (2	Axles)	: 15			
Peak H	lour Volume:	787 vehicles	3		Hea	avy Truc	cks (3+)	Axles)	: 15			
Ve	hicle Speed:	35 mph		+	Vehicle N	Niv						
Near/Far La	ne Distance:	33 feet		H		u x cleType		Dav	Evening	Nig	nht	Daily
Site Data					10111		Autos:	71.99			.9%	86.85%
Par	rrier Height:	0.0 feet			Me	dium Ti	rucks:	75.39	6 7.0%	. 17	.7%	1.94%
Barrier Type (0-W	-	0.0 1001			H	leavy Ti	rucks:	60.49	6 12.0%	27	.6%	11.21%
Centerline Di		44.0 feet		L								
Centerline Dist.		44.0 feet		1	Noise So				eet)			
Barrier Distance		0.0 feet				Auto		000				
Observer Height ((Ahove Pad):	5.0 feet				n Truck		297				
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade A	ajusti	nent:	0.0
	ad Flevation:	0.0 feet		1	Lane Equ	iivalent	Distan	ce (in	feet)			
	Road Grade:	0.0%			•	Auto		094				
	Left View:	-90.0 degree	es		Mediun	n Truck	s: 40.	879				
	Right View:	90.0 degree			Heav	y Truck	s: 40.	900				
FHWA Noise Mode	el Calculation:	s										
VehicleType	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fresi	nel	Barrier A	tten	Berr	n Atten
Autos:	64.30	-2.40		1.1	7	-1.20		-4.61	0	.000		0.000
Medium Trucks:	75.75	-18.92		1.2	1	-1.20		-4.87	0	.000		0.000
Heavy Trucks:	81.57	-11.29		1.2	1	-1.20		-5.50	0	.000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	atten	uation)							
VehicleType	Leq Peak Hou	ır Leq Day	' L	eq E	vening	Leq	Night		Ldn		C٨	IEL
Autos:	61	.9	59.6		57.9		54.3	3	61	.9		62.3
Medium Trucks:	56	.8	54.8		50.4		49.	7	57	.1		57.4
Heavy Trucks:	70	.3	67.2		66.2		65.	1	71	.8		72.2
Vehicle Noise:	71	.0	68.1		66.9		65.0	6	72	.4		72.7
Centerline Distance	ce to Noise Co	ntour (in feet,)									
•				70 (dBA	65	dBA		60 dBA		55 (dBA
			Ldn:		64		137	•	29	15		636
		CI	VEL:		67		144		31	0		668

	FHWA-RI	D-77-108 HIGH	IWAY	NOISE	PREDIC	TION N	IODEL	(9/12/2	021)		
Road Nam	io: HY 2040 le: Rialto Av. nt: e/o Sierra \	Ny.						S. Arr	owhead Wa	arehous	se
SITE S	SPECIFIC IN	IPUT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard:	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	8,545 vehicl	es					Autos	: 15		
Peak Hour	Percentage:	10.13%			Me	dium Tr	ucks (2	Axles)	: 15		
Peak H	lour Volume:	866 vehicle	:S		He	avy Tru	cks (3+	Axles)	: 15		
Ve	hicle Speed:	35 mph		-	Vehicle I	Wix					
Near/Far La	ne Distance:	33 feet		ŀ		icleType	,	Day	Evening	Night	Daily
Site Data	71.99	6 12.2%	15.99	% 86.85%							
Rai	rrier Height:	0.0 feet			M	edium T	rucks:	75.39	6 7.0%	17.79	% 1.94%
Barrier Type (0-W		0.0			1	Heavy T	rucks:	60.49	6 12.0%	27.69	% 11.21%
Centerline Dis	st. to Barrier:	44.0 feet		-	Noise So	urco E	lovatio	ne (in f	innt)		
Centerline Dist.	to Observer:	44.0 feet		H	NOISE SC	Auto		0.000	eei)		
Barrier Distance	to Observer:	0.0 feet			Madiu	m Truck		2.297			
Observer Height (Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	iustmei	nt: 0.0
Pa	ad Elevation:	0.0 feet		L							
Ros	ad Elevation:	0.0 feet			Lane Eq				feet)		
I	Road Grade:	0.0%				Auto		1.094			
	Left View:	-90.0 degre				m Truck).879			
	Right View:	90.0 degre	es		Heav	y Truck	s: 40	0.900			
FHWA Noise Mode	el Calculation										
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		erm Atten
Autos:	64.30	-1.98		1.1		-1.20		-4.61		000	0.00
Medium Trucks:	75.75	-18.50		1.2		-1.20		-4.87		000	0.00
Heavy Trucks:	81.57			1.2		-1.20		-5.50	0.0	000	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou			Leq E	vening		Night	_	Ldn		CNEL
Autos:		1.3	60.0		58.3		54		62.3		62.1 57.8
Medium Trucks: Heavy Trucks:		'.3).7	55.2 67.7		50.9 66.6		50 65		57.5 72.3		72.0
Vehicle Noise:	71		68.6		67.3		66		72.8		73.
Centerline Distance	e to Noise C	ontour (in feet	t)								
		(^ [70	dBA	65	dBA		60 dBA	5	5 dBA
			Ldn:		68		14	6	314		677
		0	NFI:		71		15	3	330		711

	FHWA-RD	D-77-108 HIGHW	VAY NOIS	SE PREDI	CTION N	MODEL ((9/12/2	021)		
Road Nan	rio: EAPC 2023 ne: Rialto Av. ent: e/o Sierra V					t Name: Number:		whead Wa	arehouse	•
	SPECIFIC IN	PUT DATA						L INPUT	S	
Highway Data				Site Co	nditions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	7,849 vehicles	3				Autos:	15		
Peak Hour	r Percentage:	10.13%		N	ledium Ti	rucks (2	Axles):	15		
Peak F	Hour Volume:	795 vehicles		H	leavy Tru	icks (3+	Axles):	15		
Ve	ehicle Speed:	35 mph		Vehicle	Mix					
Near/Far La	ane Distance:	33 feet		Ve	hicleType	9	Day	Evening	Night	Daily
Site Data						Autos:	71.9%	12.2%	15.9%	86.99%
Ra	rrier Height:	0.0 feet		1	Лedium 7	rucks:	75.3%	7.0%	17.7%	1.929
Barrier Type (0-V	-	0.0			Heavy 7	rucks:	60.4%	12.0%	27.6%	11.099
	ist. to Barrier:	44.0 feet								
Centerline Dist.	to Observer:	44.0 feet		Noise 3	Source E			eet)		
Barrier Distance	to Observer:	0.0 feet		14	Auto um Truck		.000			
Observer Height	(Above Pad):	5.0 feet			um Truck avy Truck		.297	Grade Ad	liuetmon	- 0 0
P	ad Elevation:	0.0 feet		неа	avy Truci	is: 8	.004	Grade Ad	ijusurieri	. 0.0
Ro	ad Elevation:	0.0 feet		Lane E	quivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%			Auto	s: 41	.094			
	Left View:	-90.0 degrees	3	Medi	um Truck	s: 40	.879			
	Right View:	90.0 degrees	3	Hea	avy Truck	s: 40	.900			
FHWA Noise Mod										
VehicleType	REMEL	Traffic Flow	Distance		e Road	Fres		Barrier Att		m Atten
Autos: Medium Trucks:		-2.35 -18.92		.17	-1.20 -1.20		-4.61 -4.87		000	0.00
Heavy Trucks:		-18.92		.21	-1.20		-5.50		000	0.00
Unmitigated Nois							-0.00	0.1	000	0.00
VehicleType	Leg Peak Hou		_	Evening	_	Night	1	l dn	0	NFI
Autos:			9.6	58.		54.	3	61.5	_	62
Medium Trucks:			4.8	50.	-	49.	-	57.	-	57.
Heavy Trucks:	70	.3 6	7.2	66.	2	65.	1	71.8	8	72.
Vehicle Noise:	71	.0 6	8.1	66.	9	65.	6	72.	4	72.
Centerline Distan	ce to Noise Co	ontour (in feet)								
			7	0 dBA	65	dBA		60 dBA	55	dBA

Wednesday, August 2, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOIS	E PREDIC	TION M	ODEL	. (9/12/20	021)		
Road Nar	rio: HYP 2040 ne: Rialto Av. ent: e/o Sierra \	Ny.						: S. Arro : 14660	whead Wa	arehouse	•
SITE	SPECIFIC IN	JPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions (Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	8.626 vehicle	es					Autos:	15		
Peak Hou	Percentage:	10.13%			Me	dium Tru	icks (2	Axles):	15		
Peak I	Hour Volume:	874 vehicle	s		He	avy Truc	ks (3-	- Axles):	15		
Ve	ehicle Speed:	35 mph			Vehicle I	Miss					
Near/Far La	ane Distance:	33 feet				icleType		Dav	Evening	Night	Daily
Site Data					* 077		lutos:	71.9%	0	15.9%	,
	uviov Holeshi	0.0 feet			M	edium Tr		75.3%		17.7%	
Barrier Type (0-V	rrier Height:	0.0 reet				Heavy Tr		60.4%	12.0%		11.11%
	ist. to Barrier:	44.0 feet									
Centerline Dist.		44.0 feet			Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Autos		0.000			
Observer Height	(Above Pad):	5.0 feet				m Trucks		2.297	0	E	
	ad Elevation:	0.0 feet			Heav	y Trucks	S	B.004	Grade Ad	ijustment	: 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in i	feet)		
	Road Grade:	0.0%				Autos	s: 4	1.094			
	Left View:	-90.0 degree	es		Mediu	m Trucks	s: 4	0.879			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 4	0.900			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fre		Barrier At		m Atten
Autos:				1.		-1.20		-4.61		000	0.000
Medium Trucks:				1.3		-1.20		-4.87		000	0.000
Heavy Trucks:	81.57	-10.88		1.3	21	-1.20		-5.50	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atte	nuation)						
VehicleType	Leq Peak Hou			Leq E	vening	Leq i			Ldn		NEL
Autos:			60.1		58.4		-	1.8	62.	-	62.8
Medium Trucks:			55.2		50.9).1	57.	-	57.8
Heavy Trucks:			67.7		66.6			5.5	72.		72.6
Vehicle Noise.			68.6		67.4		66	6.0	72.	8	73.1
Centerline Distan	ce to Noise Co	ontour (in feet)								
			L	70	dBA	65 (60 dBA		dBA
			Ldn:		68		14	-	315		678
		C	NEL:		71		15	53	330)	712

Wednesday, August 2, 2023

APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS





14660 - S. Arrowhead Warehouse

CadnaA Noise Prediction Model: 14660-03.cna

Date: 21.07.22 Analyst: S. Shami

Calculation Configuration

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

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Valı	ue		Land	l Use	Height		Co	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Υ	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	46.2	45.6	52.3	65.0	65.0	0.0				5.00	а	6248168.26	2345824.08	5.00
RECEIVERS		R2	43.4	42.8	49.5	65.0	65.0	0.0				5.00	а	6248350.50	2345840.79	5.00
RECEIVERS		R3	49.5	49.4	56.1	65.0	65.0	0.0				5.00	а	6248381.27	2345108.84	5.00
RECEIVERS		R4	54.7	54.7	61.3	65.0	65.0	0.0				5.00	а	6247219.16	2345207.91	5.00

Point Source(s)

Name	M.	ID	R	esult. PW	'L		Lw/L	i	Оре	erating Ti	me	Height	t	Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Υ	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		TRASH05	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	а	6247108.58	2345417.67	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	а	6247695.16	2345409.22	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	а	6247470.91	2345413.04	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	а	6247893.09	2345642.63	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	а	6248082.02	2345336.39	5.00
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6247059.84	2345693.57	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6248154.25	2345362.39	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6248159.85	2345690.81	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6247658.88	2345688.36	50.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6247536.20	2345690.45	50.00
POINTSOURCE		PARK01	87.8	87.8	87.8	Lw	87.8					5.00	а	6247892.23	2345682.59	5.00
POINTSOURCE		PARK02	87.8	87.8	87.8	Lw	87.8					5.00	а	6248124.04	2345328.23	5.00
POINTSOURCE		PARK03	87.8	87.8	87.8	Lw	87.8					5.00	а	6248215.52	2345361.35	5.00
POINTSOURCE		PARK04	87.8	87.8	87.8	Lw	87.8					5.00	а	6248217.09	2345453.01	5.00

Name	M.	ID	R	esult. PW	/L		Lw / L	i	Op	erating Ti	me	Heigh	t	Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Υ	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		PARK05	87.8	87.8	87.8	Lw	87.8					5.00	а	6248220.07	2345627.87	5.00
POINTSOURCE		PARK06	87.8	87.8	87.8	Lw	87.8					5.00	а	6247631.89	2345414.45	5.00
POINTSOURCE		PARK07	87.8	87.8	87.8	Lw	87.8					5.00	а	6247545.24	2345415.92	5.00
POINTSOURCE		PARK08	87.8	87.8	87.8	Lw	87.8					5.00	а	6247622.62	2345514.44	5.00
POINTSOURCE		PARK09	87.8	87.8	87.8	Lw	87.8					5.00	а	6247563.94	2345547.81	5.00
POINTSOURCE		PARK10	87.8	87.8	87.8	Lw	87.8					5.00	а	6247627.02	2345611.47	5.00
POINTSOURCE		PARK11	87.8	87.8	87.8	Lw	87.8					5.00	а	6247567.38	2345653.08	5.00
POINTSOURCE		PARK12	87.8	87.8	87.8	Lw	87.8					5.00	а	6247022.23	2345420.84	5.00
POINTSOURCE		PARK13	87.8	87.8	87.8	Lw	87.8					5.00	а	6247026.96	2345538.98	5.00
POINTSOURCE		PARK14	87.8	87.8	87.8	Lw	87.8					5.00	а	6246976.79	2345523.02	5.00
POINTSOURCE		PARK15	87.8	87.8	87.8	Lw	87.8					5.00	а	6247027.13	2345612.73	5.00
POINTSOURCE		PARK16	87.8	87.8	87.8	Lw	87.8					5.00	а	6246977.13	2345669.98	5.00

Line Source(s)

LITIC JOU		C(3)																		
Name	M.	ID	R	Result. PW	'L	R	esult. PW	L'		Lw/L	i	Op	erating T	me		Moving	Pt. Src		Heigh	ht
			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	77.0	77.0	77.0	Lw	93.2									8	а
LINESOURCE		TRUCK02	93.2	93.2	93.2	75.7	75.7	75.7	Lw	93.2									8	а
LINESOURCE		TRUCK03	93.2	93.2	93.2	73.8	73.8	73.8	Lw	93.2									8	а
LINESOURCE		TRUCK04	93.2	93.2	93.2	80.5	80.5	80.5	Lw	93.2									8	а
LINESOURCE		TRUCK05	93.2	93.2	93.2	76.8	76.8	76.8	Lw	93.2									8	а

Name	ŀ	lei	ght		Coordinat	es	
	Begin		End	х	У	Z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	а		6247091.14	2345443.77	8.00	0.00
				6246954.00	2345446.09	8.00	0.00
LINESOURCE	8.00	а		6247675.30	2345440.13	8.00	0.00
				6247491.26	2345440.37	8.00	0.00
LINESOURCE	8.00	а		6247594.58	2345440.23	8.00	0.00
				6247597.68	2345724.35	8.00	0.00
LINESOURCE	8.00	а		6247922.28	2345660.39	8.00	0.00
				6247923.32	2345721.71	8.00	0.00
LINESOURCE	8.00	а		6248096.41	2345300.91	8.00	0.00
				6248177.41	2345300.40	8.00	0.00
				6248196.85	2345307.80	8.00	0.00
				6248237.80	2345309.46	8.00	0.00

Area Source(s)

Name	M.	ID	R	esult. PW	'L	Re	esult. PW	L"		Lw/L	i	Op	erating Ti	me	Heigh	t
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	Γ
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		Г
AREASOURCE		DOCK01	103.4	103.4	103.4	67.2	67.2	67.2	Lw	103.4					8	a
AREASOURCE		DOCK02	103.4	103.4	103.4	70.2	70.2	70.2	Lw	103.4					8	а
AREASOURCE		DOCK03	103.4	103.4	103.4	67.6	67.6	67.6	Lw	103.4					8	а

Name	ŀ	lei	ght		Coordinat	es	
	Begin		End	х	у	Z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	а		6247164.17	2345536.48	8.00	0.00
				6247427.21	2345532.63	8.00	0.00
				6247426.21	2345473.50	8.00	0.00
				6247490.35	2345472.94	8.00	0.00
				6247492.38	2345400.08	8.00	0.00
		П		6247090.46	2345404.12	8.00	0.00
				6247091.69	2345476.40	8.00	0.00
				6247163.13	2345475.78	8.00	0.00
AREASOURCE	8.00	а		6247780.27	2345530.62	8.00	0.00
				6247874.37	2345529.62	8.00	0.00
				6247873.63	2345368.90	8.00	0.00
				6247856.03	2345375.19	8.00	0.00
				6247828.85	2345380.08	8.00	0.00
				6247813.00	2345382.93	8.00	0.00
		П		6247795.80	2345386.03	8.00	0.00
				6247780.38	2345388.80	8.00	0.00
				6247767.26	2345391.17	8.00	0.00
				6247755.80	2345393.23	8.00	0.00
				6247727.37	2345394.14	8.00	0.00
		П		6247674.52	2345395.85	8.00	0.00
				6247675.86	2345471.82	8.00	0.00
				6247760.56	2345471.23	8.00	0.00
				6247779.60	2345491.41	8.00	0.00
AREASOURCE	8.00	а		6247874.27	2345660.00	8.00	0.00
		П		6247953.58	2345660.65	8.00	0.00

Urban Crossroads, Inc.

Name	He	ight		Coordinat	es	
	Begin	End	х	у	Z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6247952.66	2345606.70	8.00	0.00
			6248013.43	2345606.30	8.00	0.00
			6248008.82	2345447.63	8.00	0.00
			6247949.94	2345447.20	8.00	0.00
			6247948.97	2345390.61	8.00	0.00
			6248051.70	2345345.80	8.00	0.00
			6248057.66	2345345.76	8.00	0.00
			6248095.02	2345345.50	8.00	0.00
			6248097.11	2345278.13	8.00	0.00
			6248074.05	2345281.50	8.00	0.00
			6248004.78	2345322.08	8.00	0.00
			6247956.49	2345339.32	8.00	0.00
			6247873.63	2345368.90	8.00	0.00

Building(s)

Buildin	ıg(S)									
Name	M.	ID	RB	Residents	Absorption	Height			Coordinat	es	
						Begin		х	у	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00001	х	0		45.00	а	6247101.08	2345714.13	45.00	0.00
								6247217.49	2345712.75	45.00	0.00
								6247218.00	2345707.31	45.00	0.00
								6247377.22	2345704.60	45.00	0.00
							Г	6247377.30	2345709.42	45.00	0.00
							Г	6247494.35	2345709.84	45.00	0.00
								6247495.37	2345698.96	45.00	0.00
							Г	6247548.43	2345697.45	45.00	0.00
								6247544.92	2345632.96	45.00	0.00
								6247549.75	2345632.88	45.00	0.00
							Г	6247547.62	2345472.44	45.00	0.00
							Г	6247426.21	2345473.50	45.00	0.00
							Г	6247427.21	2345532.63	45.00	0.00
							Т	6247164.17	2345536.48	45.00	0.00
							Г	6247163.13	2345475.78	45.00	0.00
							Г	6247042.13	2345476.83	45.00	0.00
							Н	6247044.85	2345636.05	45.00	0.00
							Н	6247048.47	2345635.99	45.00	0.00
							Н	6247049.63	2345704.14	45.00	0.00
							Н	6247100.87	2345702.06	45.00	0.00
BUILDING		BUILDING00002	х	0		45.00	a	6247700.03	2345707.54	45.00	0.00
501251110		50125111000002		-		15.00	Ť	6247834.54	2345705.85	45.00	0.00
							Н	6247835.04	2345699.81	45.00	0.00
							Н	6247874.24	2345699.14	45.00	0.00
							Н	6247874.37	2345529.62	45.00	0.00
							Н	6247780.27	2345530.62	45.00	0.00
							Н	6247779.60	2345491.41	45.00	0.00
							Н	6247760.56	2345471.23	45.00	0.00
							Н	6247640.52	2345472.07	45.00	0.00
							Н	6247642.71	2345636.12	45.00	0.00
							\vdash	6247646.33	2345636.06	45.00	0.00
							H	6247647.38	2345697.58	45.00	0.00
							Н	6247699.25	2345697.30	45.00	0.00
BUILDING		BUILDING00003	х	0		45.00	a	6247954.32	2345704.47	45.00	0.00
DOILDING		BOILDINGOOOG	^	0		43.00	å	6248014.04	2345703.46	45.00	0.00
							Н	6248014.13	2345709.01	45.00	0.00
								6248123.89	2345709.92	45.00	0.00
1	_						H	6248123.80	2345704.36	45.00	0.00
							\vdash	6248171.71	2345704.36	45.00	0.00
	-						H	6248171.71	2345657.05	45.00	0.00
							H	6248175.78	2345656.94	45.00	0.00
							\vdash	6248173.74	2345050.94	45.00	0.00
				-			\vdash	6248172.74	2345397.22	45.00	0.00
							H	6248167.18	2345349.39	45.00	0.00
							\vdash	6248120.55	2345350.88	45.00	0.00
							H	6248120.35	2345350.88	45.00	0.00
			_				H			45.00	0.00
							H	6248051.70	2345345.80		
	_						\vdash	6247948.97	2345390.61	45.00	0.00
							H	6247949.94	2345447.20	45.00	0.00
							H	6248008.82	2345447.63	45.00	0.00
	_						\vdash	6248013.43	2345606.30	45.00	0.00
		l					L	6247952.66	2345606.70	45.00	0.00



APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS





14660 - S. Arrowhead Warehouse

CadnaA Noise Prediction Model: 14660-03 - Construction.cna

Date: 21.07.22 Analyst: S. Shami

Calculation Configuration

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

Receiver Noise Levels

Name	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	Υ	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	70.0	70.0	76.7	65.0	65.0	0.0				5.00	а	6248168.26	2345824.08	5.00
RECEIVERS		R2	66.5	66.5	73.2	65.0	65.0	0.0				5.00	а	6248350.50	2345840.79	5.00
RECEIVERS		R3	67.1	67.1	73.8	65.0	65.0	0.0				5.00	а	6248381.27	2345108.84	5.00
RECEIVERS		R4	66.0	66.0	72.6	65.0	65.0	0.0				5.00	а	6247219.16	2345207.91	5.00

Point Source(s)

Name	M.	ID	R	esult. PW	'L	Lw / Li			Operating Time			Height		Coordinates			
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Υ	Z	
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)	
		CONSTRUCTION	115.0	115.0	115.0	Lw	115					8.00	а	6247022.40	2345681.50	8.00	
		CONSTRUCTION	115.0	115.0	115.0	Lw	115					8.00	а	6246994.70	2345455.42	8.00	
		CONSTRUCTION	115.0	115.0	115.0	Lw	115					8.00	а	6248193.92	2345263.29	8.00	
		CONSTRUCTION	115.0	115.0	115.0	Lw	115					8.00	а	6248168.00	2345647.54	8.00	

Area Source(s)

Name	M.	ID	R	esult. PW	'L	Re	esult. PW	L"		Lw/L	i	Ор	erating Ti	me	Height	t
			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	115.0	115.0	115.0	68.7	68.7	68.7	Lw	115					8	а

Name	Height Fred				Coordinat	es	
	Begin		End	х	у	Z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	8.00	a		6246953.59	2345405.49	8.00	0.00
				6246956.61	2345705.98	8.00	0.00
				6246979.47	2345729.36	8.00	0.00
				6248218.64	2345719.32	8.00	0.00
				6248241.34	2345696.66	8.00	0.00
				6248236.39	2345154.86	8.00	0.00
				6248194.94	2345195.12	8.00	0.00
		Г		6248117.94	2345255.79	8.00	0.00
				6248004.78	2345322.08	8.00	0.00
				6247856.03	2345375.19	8.00	0.00
				6247755.80	2345393.23	8.00	0.00
				6247566.23	2345399.34	8.00	0.00

APPENDIX 10.2:

CADNAA CONCRETE POUR NOISE MODEL INPUTS





14660 - S. Arrowhead Warehouse

CadnaA Noise Prediction Model: 14660-03 - ConcretePour.cna

Date: 21.07.22 Analyst: S. Shami

Calculation Configuration

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

Receiver Noise Levels

Name	М.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Υ	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	46.2	45.6	52.3	65.0	65.0	0.0				5.00	а	6248168.26	2345824.08	5.00
RECEIVERS		R2	43.4	42.8	49.5	65.0	65.0	0.0				5.00	а	6248350.50	2345840.79	5.00
RECEIVERS		R3	49.5	49.4	56.1	65.0	65.0	0.0				5.00	а	6248381.27	2345108.84	5.00
RECEIVERS		R4	54.7	54.7	61.3	65.0	65.0	0.0				5.00	а	6247219.16	2345207.91	5.00

Area Source(s)

		` '														
Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height	
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	П
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		П
BUILDING		BUILDING00001	100.3	100.3	100.3	60.6	60.6	60.6	Lw	100.3					6	a
BUILDING		BUILDING00002	100.3	100.3	100.3	63.8	63.8	63.8	Lw	100.3					6	а
BUILDING		BUILDING00003	100.3	100.3	100.3	62.3	62.3	62.3	Lw	100.3					6	а

Name	ŀ	lei	ght		Coordinates							
	Begin		End		х	у	Z	Ground				
	(ft)	Г	(ft)		(ft)	(ft)	(ft)	(ft)				
BUILDING	6.00	a			6247101.08	2345714.13	45.00	0.00				
					6247217.49	2345712.75	45.00	0.00				
		Г			6247218.00	2345707.31	45.00	0.00				
		Г			6247377.22	2345704.60	45.00	0.00				
					6247377.30	2345709.42	45.00	0.00				
		Г			6247494.35	2345709.84	45.00	0.00				
					6247495.37	2345698.96	45.00	0.00				

Name	Н	eight		Coordinates							
	Begin	End	х	У	Z	Ground					
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)					
			6247548.43	2345697.45	45.00	0.00					
			6247544.92	2345632.96	45.00	0.00					
			6247549.75	2345632.88	45.00	0.00					
			6247547.62	2345472.44	45.00	0.00					
			6247426.21	2345473.50	45.00	0.00					
			6247427.21	2345532.63	45.00	0.00					
			6247164.17	2345536.48	45.00	0.00					
			6247163.13	2345475.78	45.00	0.00					
			6247042.13	2345476.83	45.00	0.00					
			6247044.85	2345636.05	45.00	0.00					
			6247048.47	2345635.99	45.00	0.00					
			6247049.63	2345704.14	45.00	0.00					
			6247100.87	2345702.06	45.00	0.00					
BUILDING	6.00	a	6247700.03	2345707.54	45.00	0.00					
			6247834.54	2345705.85	45.00	0.00					
			6247835.04	2345699.81	45.00	0.00					
			6247874.24	2345699.14	45.00	0.00					
			6247874.37	2345529.62	45.00	0.00					
			6247780.27	2345530.62	45.00	0.00					
			6247779.60	2345491.41	45.00	0.00					
			6247760.56	2345471.23	45.00	0.00					
			6247640.52	2345472.07	45.00	0.00					
			6247642.71	2345636.12	45.00	0.00					
			6247646.33	2345636.06	45.00	0.00					
			6247647.38	2345697.58	45.00	0.00					
			6247699.25	2345697.30	45.00	0.00					
BUILDING	6.00	a	6247954.32	2345704.47	45.00	0.00					
			6248014.04	2345703.46	45.00	0.00					
			6248014.13	2345709.01	45.00	0.00					
			6248123.89	2345709.92	45.00	0.00					
			6248123.80	2345704.36	45.00	0.00					
			6248171.71	2345703.55	45.00	0.00					
			6248169.53	2345657.05	45.00	0.00					
			6248175.78	2345656.94	45.00	0.00					
			6248172.74	2345397.22	45.00	0.00					
			6248167.18	2345396.62	45.00	0.00					
			6248167.07	2345349.39	45.00	0.00					
			6248120.55	2345350.88	45.00	0.00					
			6248120.46	2345345.32	45.00	0.00					
			6248051.70	2345345.80	45.00	0.00					
			6247948.97	2345390.61	45.00	0.00					
			6247949.94	2345330.01	45.00	0.00					
			6248008.82	2345447.63	45.00	0.00					
+			6248013.43	2345606.30	45.00	0.00					
		+	6247952.66	2345606.70	45.00	0.00					
			3247332.00	2343000.70	43.00	0.00					