Appendices

Appendix J Noise and Vibration Analysis

Appendices

This page intentionally left blank.



Irwindale Gateway Specific Plan

NOISE AND VIBRATION ANALYSIS CITY OF IRWINDALE

PREPARED BY:

Bill Lawson, PE, INCE blawson@urbanxroads.com (949) 584-3148

JUNE 28, 2023

15410-02 NA



TABLE OF CONTENTS

TABLE OF CONTENTS III								
AF	APPENDICESIV							
LIS	LIST OF EXHIBITSIV							
LIS	ST OF 1	TABLES	V					
LIS	ST OF A	ABBREVIATED TERMS	VI					
EX	ECUTI		1					
1	IN	TRODUCTION	3					
	1.1	Site Location	3					
	1.2	Project Description	3					
2	FU	NDAMENTALS	7					
	2.1	Range of Noise	7					
	2.2	Noise Descriptors	8					
	2.3	Sound Propagation	8					
	2.4	Noise Control	9					
	2.5	Noise Barrier Attenuation	9					
	2.6	Land Use Compatibility With Noise	. 10					
	2.7	Community Response to Noise	. 10					
	2.8	Vibration	. 11					
3	RE	GULATORY SETTING	. 13					
	3.1	State of California Noise Requirements	. 13					
	3.2	City of Irwindale General Plan Noise Element	. 13					
	3.3	Operational Noise Standards	. 15					
	3.4	Construction Noise Standards	. 16					
	3.5	Construction Vibration Standards	. 16					
4	SIG	GNIFICANCE CRITERIA	. 19					
	4.1	Noise Level Increases (Threshold A)	. 19					
	4.2	Vibration (Threshold B)	. 20					
	4.3	CEQA Guidelines Not Further Analyzed (Threshold C)	. 21					
	4.4	Significance Criteria Summary	. 21					
5	EX	ISTING NOISE LEVEL MEASUREMENTS	. 23					
	5.1	Measurement Procedure and Criteria	. 23					
	5.2	Noise Measurement Locations	. 23					
	5.3	Noise Measurement Results	. 24					
6	TR	AFFIC NOISE METHODS AND PROCEDURES	. 27					
	6.1	FHWA Traffic Noise Prediction Model	. 27					
7	OF	F-SITE TRAFFIC NOISE ANALYSIS	. 31					
	7.1	Off-Site Traffic Noise Levels	. 31					
	7.2	Option 1 - Existing Project Traffic Noise Level Increases	. 31					
	7.3	Option 1 – Buildout Year 2028 Traffic Noise Level Increases	. 31					
	7.4	Option 1 – Horizon Year 2040 Traffic Noise Level Increases	. 32					
	7.5	Option 2 - Existing Project Traffic Noise Level Increases	. 32					
	7.6	Option 2 – Buildout Year 2028 Traffic Noise Level Increases	. 32					



	7.7	Option 2 – Horizon Year 2040 Traffic Noise Level Increases	. 32
8	SEN	SITIVE RECEIVER LOCATIONS	41
9	OP	ERATIONAL NOISE IMPACTS	43
	9.1	Operational Noise Sources	. 43
	9.2	Reference Noise Levels	. 43
	9.3	CadnaA Noise Prediction Model	. 47
	9.4	Project Operational Noise Levels	. 48
	9.5	Project Operational Noise Level Increases	. 50
10	СО	NSTRUCTION IMPACTS	53
10	CO 10.1	NSTRUCTION IMPACTS Construction Noise Levels	. 53 . 53
10	CO 10.1 10.2	NSTRUCTION IMPACTS Construction Noise Levels Construction Reference Noise Levels	. 53 . 53 . 53
10	CO 10.1 10.2 10.3	NSTRUCTION IMPACTS Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis	53 53 53 53
10	CO 10.1 10.2 10.3 10.4	NSTRUCTION IMPACTS Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis Project Site Construction Noise Level Compliance	. 53 . 53 . 53 . 55 . 56
10	CO 10.1 10.2 10.3 10.4 10.5	NSTRUCTION IMPACTS Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis Project Site Construction Noise Level Compliance Construction Vibration Analysis	. 53 . 53 . 53 . 55 . 56 . 57
10	CO 10.1 10.2 10.3 10.4 10.5 REF	NSTRUCTION IMPACTS Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis Project Site Construction Noise Level Compliance Construction Vibration Analysis ERENCES	. 53 . 53 . 55 . 55 . 56 . 57

APPENDICES

APPENDIX 3.1: C	TTY OF IRWINDALE MUNICIPAL CODE
APPENDIX 3.2: L	OS ANGELES COUNTY CODE OF ORDINANCES
APPENDIX 3.3: C	TTY OF BALDWIN PARK MUNICIPAL CODE
APPENDIX 5.1: S	TUDY AREA PHOTOS
APPENDIX 5.2: N	IOISE LEVEL MEASUREMENT WORKSHEETS
APPENDIX 7.1: O	OPTION 1 - OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS
APPENDIX 7.2: O	OPTION 2 - OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS
APPENDIX 9.1: O	OPTION 1 - OPERATIONAL NOISE MODEL CALCULATIONS
APPENDIX 9.2: O	OPTION 2 - OPERATIONAL NOISE MODEL CALCULATIONS
APPENDIX 10.1:	PROJECT CONSTRUCTION NOISE MODEL INPUTS

LIST OF EXHIBITS

EXHIBIT 1-A:	LOCATION MAP	4
EXHIBIT 1-B:	OPTION 1 SITE PLAN	5
EXHIBIT 1-C:	OPTION 2 SITE PLAN	6
EXHIBIT 2-A:	TYPICAL NOISE LEVELS	7
EXHIBIT 2-B:	NOISE LEVEL INCREASE PERCEPTION 1	0
EXHIBIT 2-C:	TYPICAL LEVELS OF GROUND-BORNE VIBRATION1	2
EXHIBIT 3-A:	LAND USE NOISE COMPATIBILITY CRITERIA 1	4
EXHIBIT 5-A:	NOISE MEASUREMENT LOCATIONS 2	5
EXHIBIT 8-A:	RECEIVER LOCATIONS 4	2
EXHIBIT 9-A:	OPTION 1 - OPERATIONAL NOISE SOURCE LOCATIONS 4	4
EXHIBIT 9-B:	OPTION 2 - OPERATIONAL NOISE SOURCE LOCATIONS 4	5
EXHIBIT 10-A:	: CONSTRUCTION NOISE SOURCE LOCATIONS	4



LIST OF TABLES

LIST OF ABBREVIATED TERMS

(1)	Reference
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L _{eq}	Equivalent continuous (average) sound level
L _{max}	Maximum level measured over the time interval
mph	Miles per hour
PPV	Peak Particle Velocity
Project	Irwindale Gateway Specific Plan
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 noise exposure and the necessary noise mitigation measures for the proposed Irwindale Gateway Specific Plan development ("Project"). The Project site is located at 13620 Live Oak Lane in the City of Irwindale. The Project is a proposed development of an industrial logistics, distribution center, associated parking, and loading docks. The project site is currently a vacant lot that is used for a variety of industrial and commercial uses, as well as stockpiled materials and debris. This noise study has been prepared to satisfy applicable City of Irwindale noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

The results of this Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

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

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS



This page intentionally left blank



1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Irwindale Gateway Specific Plan ("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 at 13620 Live Oak Lane in the City of Irwindale, as shown on Exhibit 1-A. The project site is bordered by Interstate 605 (I-605) to the west, Live Oak Lane to the north and east, and Live Oak Avenue to the south.

1.2 PROJECT DESCRIPTION

The Project proposes the development of an industrial logistics, distribution center, associated parking, and loading docks. The project site is currently a vacant lot that is used for a variety of industrial and commercial uses, as well as stockpiled materials and debris. The Project includes the following two development options.

- Option 1: Project Option 1 as shown on Exhibit 1-B would redevelop the project site with three new industrial buildings providing 982,796 square feet of building space 954,796 square feet of warehouse space and 28,000 square feet of office space. A variety of general warehousing and manufacturing tenants could be accommodated in the three buildings. The proposed project would include a total of 918 standard vehicle parking spaces and 346 trailer parking spaces. In addition, the proposed project would also include approximately 253,736 square feet (5.8 acres) of landscaping.
- Option 2 Project Option 2 as shown on Exhibit 1-C would include two industrial building providing of 704,070 square feet of building space 668,070 square feet of warehouse space, 36,000 square feet of office space, and a 400-megawatt battery energy storage system (BESS) on approximately 16 acres. The preliminary design for the BESS includes 890 metal enclosures (712 containers and 178 augmentation containers) measuring 8' 10' high by 29' 11" long by 5' 5" wide, housing lithium-ion batteries, 100 power conversion systems and medium voltage transformers, and one substation. Batteries could be double stacked, which would require a higher metal enclosure but take up less space. In addition, the parking for this option would include a total of 617 standard vehicle spaces and 257 trailer spaces, and landscaping would cover 185,782 square feet (4.3 acres).





EXHIBIT 1-A: LOCATION MAP











2 FUNDAMENTALS

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

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

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

2.1 RANGE OF NOISE

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



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

2.2 NOISE DESCRIPTORS

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

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







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.



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

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

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

3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

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

3.2 CITY OF IRWINDALE GENERAL PLAN NOISE ELEMENT

The Public Safety Element of the City of Irwindale General Plan identifies land use noise compatibility criteria consistent with the California Office of Planning and Research (OPR) *General Plan Guidelines*. (9) The purpose of the land use noise compatibility criteria is to *limit the exposure of the community to excessive noise levels*. The *General Plan Guidelines* consider land use compatibility and identify exterior noise level compatibility criteria for transportation related noise. The OPR land use noise compatibility criteria are found in Figure 2 of the *General Plan Guidelines*, *Appendix D: Noise Element Guidelines* as shown on Exhibit 3-A.

The Land Use Noise Compatibility Criteria describes categories of compatibility and not specific noise standards. As shown on Exhibit 3-A, noise-sensitive residential uses are normally acceptable with exterior noise levels below 60 dBA CNEL and conditionally acceptable with noise levels of less than 70 dBA CNEL. Industrial uses, such as the Project, are normally acceptable with exterior noise levels below 75 dBA CNEL.



Land Use Category	Community Noise Exposure L _{dn} or CNEL, dB							
	55	60	65	70	75	80	INTERPRETATION:	
Residential - Low Density Single Family, Duplex, Mobile Homes				÷.			Normally Acceptable	
Residential - Multi. Family			T.	h	5		based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation	
Transient Lodging - Motels, Hotels		E.	Т	÷.		4	requirements.	
Schools, Libraries, Churches, Hospitals, Nursing Homes				'n			Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of the noise reduction	
Auditoriums, Concert Halls, Amphitheaters			P	÷			noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning	
Sports Arena, Outdoor Spectator Sports				P			will normally suffice.	
Playgrounds, Neighborhood Parks							Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does	
Golf Courses, Riding Stables, Water Recreation, Cemeteries				ľ		-	proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.	
Office Buildings, Business Commercial and Professional							Clearly Unacceptable	
Industrial, Manufacturing, Utilities, Agriculture				ľ			should generally not be undertaken.	

EXHIBIT 3-A: LAND USE NOISE COMPATIBILITY CRITERIA

Source: OPR General Plan Guidelines, Appendix D: Noise Element Guidelines, Figure 2.



3.3 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Irwindale Gateway Specific Plan Project, stationary-source (operational) noise such as the expected loading dock activity, parking lot vehicle activities, roof-top air conditioning units, trash enclosure activity, and truck movements are typically evaluated against standards established under a jurisdiction's Municipal Code or General Plan.

Although the Project site is located within the City of Irwindale, nearby receiver locations are also located in the adjacent County of Los Angeles and the City of Baldwin Park. Therefore, to accurately describe the potential Project related operational noise levels, this analysis presents the appropriate operational noise standards for each of the noise-sensitive receivers located within each respective jurisdiction, as shown on Table 3-1.

		Exterior Noise Level Limit (dBA L _{eq})			
Jurisdiction	Land Use	Daytime (7am-10pm)	Nighttime (10pm-7am)		
	Residential	50	45		
City of Irwindale ¹	Commercial	55	50		
	Industrial	70	60		
County of Los Angeles ²	Residential	50	45		
City of Baldwin Park ³	Residential	55	45		

TABLE 3-1: OPERATIONAL NOISE STANDARDS

¹ City of Irwindale Municipal Code, Section 9.28.030 (Appendix 3.1).

² Los Angeles County Code Section 12.08.390[A] (Appendix 3.2).

³ City of Baldwin Park Municipal Code, Section 153.140.070 (Appendix 3.3)

3.3.1 CITY OF IRWINDALE OPERATIONAL NOISE STANDARDS

The City of Irwindale Municipal Code, Section 9.28.030, identifies the exterior noise level standards for receiving land uses in the City. (13) For residential uses, the daytime (7:00 a.m. to 10:00 p.m.) exterior noise level limit is 50 dBA L_{eq} , and 45 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 p.m.). Exterior noise levels at commercial uses shall not exceed 55 dBA L_{eq} daytime and 50 dBA L_{eq} nighttime, and at industrial uses, 70 dBA L_{eq} daytime and 60 dBA L_{eq} nighttime. Appendix 3.1 includes the City of Irwindale Municipal Code noise standards. Since the Project's general industrial land use could potentially impact adjacent noise-sensitive uses in the Project study area, this noise study relies on the more conservative residential noise level standards to describe potential Project related operational noise impacts.

3.3.2 COUNTY OF LOS ANGELES OPERATIONAL NOISE STANDARDS

The Los Angeles County Code (LACC), Chapter 12.08 Noise Control, Section 12.08.390[A] establishes the noise level standards for stationary noise sources. For residential properties, the exterior noise level must not exceed 50 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). As such, Section



12.08.390[B] indicates that if the existing ambient noise level already exceeds any of the exterior noise level limit categories, then the standard must be adjusted to reflect the ambient conditions. Chapter 12.08 Noise Control from the Los Angeles County Code of Ordinances is included in Appendix 3.2.

3.3.3 CITY OF BALDWIN PARK OPERATIONAL NOISE STANDARDS

For noise-sensitive residential properties, the City of Baldwin Park Municipal Code, Section 130.34[A], states that *it is unlawful for any person within the city to make, cause or allow to be produced noise which s received on property occupied by another person within the designated zone, in excess of the following levels, except as expressly provided otherwise herein.* In addition, Section 130.34[A] identifies ambient base noise levels (ABNL) stationary-source noise level limits by land use zone for the daytime (7:00 a.m. to 10:00 p.m.) hours and the nighttime (10:00 p.m. to 7:00 a.m.) hours. For the nearby noise sensitive residential land use, the municipal code identifies a noise level limit of 55 dBA L_{eq} anytime during the daytime and 45 dBA L_{eq} during the nighttime. The City of Baldwin Park Municipal Code Noise Standards are included in Appendix 3.3.

A review of the operational noise criteria for City of Irwindale, Los Angeles County and the City of Baldwin Park shows that the City of Irwindale maintains the most restrictive exterior noise standards for residential land use. Therefore, this analysis relies on the lower and more conservative City of Irwindale Municipal exterior noise criteria exterior noise level limit is 50 dBA L_{eq}, and 45 dBA L_{eq} for noise-sensitive residential land use.

3.4 CONSTRUCTION NOISE STANDARDS

The City of Irwindale has set restrictions to control noise impacts associated with the construction of the proposed Project. Municipal Code, Section 9.28.110, indicates that construction activity is limited to the hours of 7:00 a.m. to 7:00 p.m. and cannot constitute a violation of Section 9.28.040 unless authorized by a building inspector. Section 9.28.040 identifies the construction noise level threshold for use in this noise study and indicates that Project construction noise levels shall not exceed the base exterior noise level standard or the ambient noise level by more than 5 dBA at sensitive receiver locations. (14)

3.5 CONSTRUCTION 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 Irwindale Gateway Specific Plan, vibration-generating activities are appropriately evaluated against standards established under the Municipal Code if such standards exist. However, the City of Irwindale does not identify specific construction vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (12 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).



This page intentionally left blank



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 described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders a noise impact significant*. (14) 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* noise level, the less acceptable the new noise level will typically be judged.

4.1.1 NOISE-SENSITIVE RECEIVERS

The Federal Interagency Committee on Noise (FICON) (15) 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 (L_{eq}).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders a noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (14) 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 at noise sensitive receiver locations are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (16 p. 2_48).

4.1.2 NON-NOISE-SENSITIVE RECEIVERS

The Land Use Compatibility Criteria outlined in Section 3.2 was used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the normally acceptable exterior noise level for the Project related non-noise-sensitive warehouse/industrial land use is 75 dBA CNEL. To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a barely perceptible 3 dBA criteria is used. When the without Project noise levels are greater than the normally acceptable 75 dBA CNEL land use compatibility criteria, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the normally acceptable 75 dBA CNEL exterior noise level criteria outlined in Land Use Noise Compatibility Criteria for warehouse/industrial land use.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.4, the vibration impacts originating from the construction of Irwindale Gateway Specific Plan, 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 Project site is not located within two miles of a public airport or within an airport land use plan. The closest airport is the San Gabriel Valley Airport located over 3.2 miles southwest of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Guideline C.

4.4 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-1 shows the significance criteria summary matrix that includes the allowable criteria used to identify potentially significant incremental noise level increases.

Analysia	Receiving	Condition(a)	Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL P	roject increase	
	Noise- Sensitive ¹	If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL P	roject increase	
Off-Site	Schältive	If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase	
Traffic	Non-Noise- Sensitive ²	If ambient is > 75 dBA CNEL	≥ 3 dBA CNEL Project increase		
	nal Noise- Sensitive	Exterior Noise Level Standards ³	50 dBA L _{eq}	45 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	\geq 3 dBA L _{eq} Project increase		
		If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA L _{eq} Project increase		
Construction	Noise-	Noise Level Increase Threshold ⁴	≥ 5 dBA dBA L _{eq} Project increase		
Construction	Sensitive	Vibration Level Threshold ⁵	0.3 PPV (in/sec)		

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

¹ FICON, 1992.

² California Office of Planning and Research (OPR) General Plan Guidelines Land Use Noise Compatibility Critieria.

³ City of Irwindale Municipal Code, Section 9.28.030 (Appendix 3.1).

⁴ City of Irwindale Municipal Code, Section 9.28.040 (Appendix 3.1).

⁵ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.



This page intentionally left blank



5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at five locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, April 26, 2023. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

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

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (2) Further, FTA guidance states, 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 equivalent or the energy average hourly sound levels (L_{eq}). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location.

Location ¹	Description	Energy Noise (dBA	CNEL		
		Daytime	Nighttime		
L1	Located northwest of the site near the residence at 2585 Mountain Ave.	58.2	56.8	64.1	
L2	Located north of the site near the sports complex at 1417 Arrow Hwy.	74.2	71.3	78.5	
L3	Located southeast of the site near the residence at 5114 Stewart Ave.	65.0	63.7	70.6	
L4	Located south of the site near the residence at 13803 Chilcot St.	62.6	56.5	65.1	
L5	Located south of the site near the Olive Middle School at 13602 Olive St.	63.2	57.2	66.1	

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

¹ See Exhibit 5-A for the noise level measurement locations.

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

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Table 5-1 provides the equivalent noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L₁, L₂, L₅, L₈, L₂₅, L₅₀, L₉₀, L₉₅, and L₉₉ percentile noise levels observed during the daytime and nighttime periods.







Site Boundary 🛕 Measurement Locations N



This page intentionally left blank



6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with City of Irwindale *Land Use Noise Compatibility Criteria* (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. (18) 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. (19) 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. (20)

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 for Project Option 1 and Option 2. Table 6-1 identifies the 13 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 Irwindale General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study area are based on the *Irwindale Gateway Specific Plan Traffic Impact Analysis*, prepared by Iteris, Inc. for the following traffic scenarios (20).

- Existing
- Existing plus Project
- Buildout Year (2028) without Project Conditions
- Buildout Year (2028) with Project Conditions
- Horizon Year (2040) without Project Conditions
- Horizon Year (2040) with Project Conditions

Table 6-2 presents the Option 1 ADT volumes and Table 6-3 presents the Option 2 ADT volumes. The 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 analysis. Project Option 1 is anticipated to generate a net total of 2,058 two-way trips per day (actual vehicles) that includes 550 truck trips. Project Option 2 is anticipated to generate a net total of 1,511 two-way trips per day (actual vehicles) that includes 418 truck trips.

ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Avenida Barbosa	n/o Arrow Highway	Secondary	Non-Sensitive	40'	40
2	Rivergrade Road	s/o Live Oak Avenue	Collector	Non-Sensitive	30'	40
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Secondary	Sensitive	40'	40
4	Live Oak Avenue	s/o Arrow Highway	Major	Non-Sensitive	50'	40
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Major	Non-Sensitive	50'	40
6	Live Oak Avenue	e/o Graham Road	Major	Non-Sensitive	50'	40
7	Live Oak Avenue	w/o Rivergrade Road	Major	Non-Sensitive	50'	40
8	Live Oak Avenue	w/o Stewart Avenue	Major	Non-Sensitive	50'	45
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Major	Non-Sensitive	50'	45
10	Arrow Highway	w/o Live Oak Avenue	Secondary	Non-Sensitive	40'	45
11	Arrow Highway	e/o Avenida Barbosa	Secondary	Non-Sensitive	40'	45
12	Arrow Highway	e/o I-1605 NB On-Ramp	Secondary	Non-Sensitive	40'	45
13	Arrow Highway	e/o Maine Avenue	Major	Non-Sensitive	50'	45

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

¹ Irwindale Gateway Specific Plan Traffic Impact Analysis, Iteris, Inc.

² Based on a review of existing aerial imagery.

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

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 6-4 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 *Irwindale Gateway Specific Plan Traffic Impact 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 6-5 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios.


			Average Daily Traffic Volumes ¹							
	Roadway	Segment	Exis	Existing		ear (2028)	Horizon Year (2040)			
ם			Without Project	With Project	Without Project	With Project	Without Project	With Project		
1	Avenida Barbosa	n/o Arrow Highway	10,210	10,405	17,107	17,302	25,384	25,579		
2	Rivergrade Road	s/o Live Oak Avenue	9,965	10,068	15,626	15,729	22,418	22,521		
3	Baldwin Park Blvd.	s/o Live Oak Avenue	10,885	11,091	16,327	16,533	22,859	23,065		
4	Live Oak Avenue	s/o Arrow Highway	27,632	28,004	38,323	38,695	51,151	51,523		
5	Live Oak Avenue	w/o I-605 SB On-Ramp	27,632	28,205	38,323	38,896	51,151	51,724		
6	Live Oak Avenue	e/o Graham Road	16,505	17,648	28,756	29,899	43,456	44,599		
7	Live Oak Avenue	w/o Rivergrade Road	18,226	18,830	27,955	28,559	39,630	40,234		
8	Live Oak Avenue	w/o Stewart Avenue	18,385	18,834	29,342	29,791	42,489	42,938		
9	Live Oak Avenue	w/o Baldwin Park Blvd.	16,969	17,329	27,507	27,867	40,153	40,513		
10	Arrow Highway	w/o Live Oak Avenue	34,298	34,713	49,679	50,094	68,137	68,552		
11	Arrow Highway	e/o Avenida Barbosa	15,351	15,443	24,999	25,091	36,576	36,668		
12	Arrow Highway	e/o I-1605 NB On-Ramp	11,358	11,512	20,881	21,035	32,309	32,463		
13	Arrow Highway	e/o Maine Avenue	16,846	17,155	29,441	29,750	44,554	44,863		

TABLE 6-2: OPTION 1 AVERAGE DAILY TRAFFIC VOLUMES

¹ Irwindale Gateway Specific Plan Traffic Impact Analysis, Iteris, Inc.

TABLE 6-3: OPTION 2 AVERAGE DAILY TRAFFIC VOLUMES

			Average Daily Traffic Volumes ¹							
10	Roadway	Segment	Exis	Existing		ear (2028)	Horizon Year (2040)			
			Without Project	With Project	Without Project	With Project	Without Project	With Project		
1	Avenida Barbosa	n/o Arrow Highway	10,210	10,353	17,107	17,250	25,384	25,527		
2	Rivergrade Road	s/o Live Oak Avenue	9,965	10,041	15,626	15,702	22,418	22,494		
3	Baldwin Park Blvd.	s/o Live Oak Avenue	10,885	11,036	16,327	16,478	22,859	23,010		
4	Live Oak Avenue	s/o Arrow Highway	27,632	27,903	38,323	38,594	51,151	51,422		
5	Live Oak Avenue	w/o I-605 SB On-Ramp	27,632	28,052	38,323	38,743	51,151	51,571		
6	Live Oak Avenue	e/o Graham Road	16,505	17,344	28,756	29,595	43,456	44,295		
7	Live Oak Avenue	w/o Rivergrade Road	18,226	18,669	27,955	28,398	39,630	40,073		
8	Live Oak Avenue	w/o Stewart Avenue	18,385	18,715	29,342	29,672	42,489	42,819		
9	Live Oak Avenue	w/o Baldwin Park Blvd.	16,969	17,233	27,507	27,771	40,153	40,417		
10	Arrow Highway	w/o Live Oak Avenue	34,298	34,601	49,679	49,982	68,137	68,440		
11	Arrow Highway	e/o Avenida Barbosa	15,351	15,418	24,999	25,066	36,576	36,643		
12	Arrow Highway	e/o I-1605 NB On-Ramp	11,358	11,471	20,881	20,994	32,309	32,422		
13	Arrow Highway	e/o Maine Avenue	16,846	17,073	29,441	29,668	44,554	44,781		

¹ Irwindale Gateway Specific Plan Traffic Impact Analysis, Iteris, Inc.



		Total of Time of		
venicle Type	Daytime	Evening Nighttime		Day Splits
Autos	72.45%	9.15%	18.40%	100.00%
Medium Trucks	77.70%	4.78%	17.52%	100.00%
Heavy Trucks	84.32%	2.68%	13.00%	100.00%

TABLE 6-4: TIME OF DAY VEHICLE SPLITS

¹ Based on existing 24-hour classification counts by vehicle type taken at Arrow Highway west of Maine Avenue (The Park at Live Oak Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth. "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 6-5: WITHOUT PROJECT VEHICLE MIX

Classification		Total		
Classification	Autos	Autos Medium Trucks Heavy Trucks		TOLAI
All Segments	85.65%	9.12%	5.23%	100.00%

¹Based on existing 24-hour classification counts by vehicle type taken at Arrow Highway west of Maine Avenue (The Park at Live Oak Traffic Impact 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.

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 Irwindale Gateway Specific Plan Traffic Impact Analysis* prepared by Iteris, 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 OFF-SITE TRAFFIC NOISE LEVELS

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. Appendix 7.1 includes the Option 1 traffic noise level contours worksheets for each traffic condition with Option 2 worksheets included in Appendix 7.2.

7.2 OPTION 1 - 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 Impact Analysis prepared by Iteris, 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 2028 conditions. Table 7-1 shows that the Existing without Project exterior noise levels will range from 73.4 to 79.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-1 shows that the Existing with Project conditions noise levels will range from 73.5 to 79.8 dBA CNEL resulting in a Project related off-site existing traffic noise level increase ranging 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option1- Existing Project-related traffic.

7.3 OPTION 1 – BUILDOUT YEAR 2028 TRAFFIC NOISE LEVEL INCREASES

Table 7-2 shows that the Buildout Year 2028 without Project exterior noise levels will range from 75.4 to 81.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows that the Buildout Year 2028 with Project conditions noise levels will range from 75.5 to 81.4 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.4 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 all the study area roadway segments would experience *less than significant* noise



level increases on receiving land uses due to the Option 1- Buildout Year 2028 Project-related traffic.

7.4 OPTION 1 – HORIZON YEAR 2040 TRAFFIC NOISE LEVEL INCREASES

Table 7-3 shows that the Horizon Year 2040 without Project exterior noise levels will range from 76.9 to 82.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-3 shows that the Horizon Year 2040 with Project conditions noise levels will range from 77.0 to 82.7 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.2 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 1- Horizon Year 2040 Project-related traffic.

7.5 OPTION 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 Impact Analysis prepared by Iteris, 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 2028 conditions. Table 7-4 shows that the Existing without Project exterior noise levels will range from 76.9 to 82.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the Existing with Project conditions noise levels will range from 77.0 to 82.7 dBA CNEL resulting in a Project related off-site existing traffic noise level increase ranging from 0.0 to 0.2 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 2- Existing Project-related traffic.

7.6 OPTION 2 – BUILDOUT YEAR 2028 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 shows that the Buildout Year 2028 without Project exterior noise levels will range from 75.4 to 81.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-5 shows that the Buildout Year 2028 with Project conditions noise levels will range from 75.5 to 81.3 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.3 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 2- Buildout Year 2028 Project-related traffic.

7.7 OPTION 2 – HORIZON YEAR 2040 TRAFFIC NOISE LEVEL INCREASES

Table 7-6 shows that the Horizon Year 2040 without Project exterior noise levels will range from 76.9 to 82.7 dBA CNEL, without accounting for any noise attenuation features such as noise



barriers or topography. Table 7-6 shows that the Horizon Year 2040 with Project conditions noise levels will range from 77.0 to 82.7 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.2 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 2- Horizon Year 2040 Project-related traffic.



10	Pood	Segment	Receiving	CN La	EL at Receiv nd Use (dB/	Incremental Noise Level Increase Threshold ²		
	KOAU	Segment	Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	73.4	73.5	0.2	n/a	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	73.8	73.9	0.1	n/a	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	73.7	73.8	0.2	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	78.1	78.2	0.1	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	78.1	78.3	0.2	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	75.9	76.5	0.6	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	76.3	76.6	0.3	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	77.4	77.6	0.2	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	77.1	77.3	0.2	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	79.7	79.8	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	76.2	76.3	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	74.9	75.0	0.1	n/a	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	77.0	77.2	0.2	3.0	No

TABLE 7-1: OPTION 1 - EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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)?



	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
ID			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	75.6	75.7	0.1	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	75.8	75.9	0.1	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	75.4	75.5	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	79.6	79.6	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	79.6	79.7	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	78.3	78.7	0.4	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	78.2	78.4	0.2	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	79.4	79.6	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	79.2	79.3	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	81.3	81.4	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	78.3	78.4	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	77.6	77.6	0.1	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	79.5	79.6	0.1	3.0	No

TABLE 7-2: OPTION 1 – BUILDOUT YEAR 2028 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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)?



	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
ID			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	77.3	77.4	0.1	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	77.4	77.4	0.0	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	76.9	77.0	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	80.8	80.8	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	80.8	80.9	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	80.1	80.3	0.2	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	79.7	79.8	0.1	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	81.1	81.1	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	80.8	80.9	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	82.7	82.7	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	80.0	80.0	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	79.4	79.5	0.0	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	81.3	81.3	0.1	3.0	No

TABLE 7-3: OPTION 1 - HORIZON YEAR 2040 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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)?



	Pood	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²		
U	коад		Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?	
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	77.3	77.4	0.0	3.0	No	
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	77.4	77.4	0.0	3.0	No	
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	76.9	77.0	0.1	1.5	No	
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	80.8	80.8	0.0	3.0	No	
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	80.8	80.9	0.1	3.0	No	
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	80.1	80.3	0.2	3.0	No	
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	79.7	79.8	0.1	3.0	No	
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	81.1	81.1	0.1	3.0	No	
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	80.8	80.9	0.1	3.0	No	
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	82.7	82.7	0.0	3.0	No	
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	80.0	80.0	0.0	3.0	No	
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	79.4	79.5	0.0	3.0	No	
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	81.3	81.3	0.0	3.0	No	

 TABLE 7-4: OPTION 2 - EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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)?



	Pood	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
ID	коад		Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	75.6	75.7	0.1	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	75.8	75.8	0.0	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	75.4	75.5	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	79.6	79.6	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	79.6	79.6	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	78.3	78.6	0.3	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	78.2	78.3	0.1	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	79.4	79.5	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	79.2	79.3	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	81.3	81.3	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	78.3	78.4	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	77.6	77.6	0.1	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	79.5	79.5	0.1	3.0	No

TABLE 7-5: OPTION 2 – BUILDOUT YEAR 2028 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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)?



	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
ID			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	77.3	77.4	0.0	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	77.4	77.4	0.0	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	76.9	77.0	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	80.8	80.8	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	80.8	80.9	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	80.1	80.3	0.2	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	79.7	79.8	0.1	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	81.1	81.1	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	80.8	80.9	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	82.7	82.7	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	80.0	80.0	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	79.4	79.5	0.0	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	81.3	81.3	0.0	3.0	No

TABLE 7-6: OPTION 2 - HORIZON YEAR 2040 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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)?



This page intentionally left blank



8 SENSITIVE RECEIVER LOCATIONS

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

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

- R1: Location R1 represents the existing noise sensitive residence at 2585 Mountain Avenue, in unincorporated County of Los Angeles approximately 4,518 feet northwest of the Project site. Receiver R1 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the Kare Youth League sports complex at 1417 Arrow Highway, approximately 437 feet north of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R2 is placed near the bleachers. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 5114 Stewart Avenue in the City of Baldwin Park approximately 2,372 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, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive residence at 13807 Nubia Street in the City of Baldwin Park, approximately 2,209 feet southeast of the Project site. Receiver R4 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.





R5: Location R5 represents the Olive Middle School at 13701 Olive Street in the City of Baldwin Park, approximately 2,764 feet south of the Project site. Receiver R5 is placed at the building façade. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.



EXHIBIT 8-A: RECEIVER LOCATIONS



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Irwindale Gateway Specific Plan Project Option1 and Option 2.

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 for Option 1 and Option 2. Consistent with similar industrial/warehouse uses, the Project business operations would primarily be conducted within the enclosed building, 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, parking lot vehicle activities, roof-top air conditioning units, trash enclosure activity, and truck movements In addition, Option 2 will add noise source activities from the proposed 400-megawatt battery energy storage system (BESS). Exhibit 9-A presents the Option 1 operational noise source activities. The Option 2 operational noise source activities are shown on Exhibit 9-B.

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, parking lot vehicle activities, roof-top air conditioning units, trash enclosure activity, 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 precision 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. (17)





EXHIBIT 9-A: OPTION 1 - OPERATIONAL NOISE SOURCE LOCATIONS





EXHIBIT 9-B: OPTION 2 - OPERATIONAL NOISE SOURCE LOCATIONS



Reference	Noise Source	Min./ Hour ¹		Reference Noise Level	Sound Power
Noise Source	Height (Feet)	Day	Night	(dBA L _{eq}) @ 50 Feet	Level (dBA)²
Loading Dock Activity	8'	60	60	65.7	111.5
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	60	30	57.3	89.0
Truck Movements	8'	60	60	59.8	93.2
Battery Energy Storage System (BESS)	8'	60	60	50.6	82.2

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

¹Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

² Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical outdoor operational noise activities associated with the Project. This includes truck idling, reefer activity (refrigerator truck/cold storage), deliveries, backup alarms, trailer docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background operation activities. Since the noise levels generated by cold storage loading dock activity can be slightly higher due to the use of refrigerated trucks or reefers this analysis conservatively assumes that all loading dock activity is associated with cold storage facilities. The reference noise level measurement was taken in the center of the loading dock activity area and represents multiple concurrent noise sources resulting in a combined noise level of 65.7 dBA L_{eq} at a uniform distance of 50 feet. Specifically, the reference noise level measurement represents one truck located approximately 30 feet from the noise level meter with another truck passing by to park roughly 20 feet away, both with their engines idling. Throughout the reference noise level measurement, a separate docked and running reefer truck was located approximately 50 feet east of the measurement location. Additional background noise sources included truck pass-by noise, truck drivers talking to each other next to docked trucks, and air brake release noise when trucks parked.

9.2.3 PARKING LOT VEHICLE MOVEMENTS

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



9.2.4 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 level is 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.

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.

9.2.6 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represent 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.

9.2.7 BATTERY ENERGY STORAGE SYSTEM (BESS) – OPTION 2

To describe the potential operation noise levels associated with the proposed BESS with site plan Option 2, reference noise levels were obtained from the Tesla Megapack Site Design Manual. (21) It is expected that the BESS with accessory switchgear and transformers will produce unmitigated exterior reference noise levels of less than 75 dBA when measured at 3 feet producing a reference noise level of 50.6 dBA L_{eq} at 50 feet.

9.3 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels. Using the ISO 9613-2 protocol, CadnaA



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

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

9.4 PROJECT OPERATIONAL NOISE LEVELS

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

9.4.1 OPTION 1 SITE PLAN

Table 9-2 shows Project Option 1 operational noise levels during the daytime hours are expected to range from 36.1 to 47.9 dBA L_{eq} with nighttime hourly noise levels ranging from 36.0 to 47.9 dBA L_{eq}. The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1. Table 9-2 shows that the operational noise levels associated with Irwindale Gateway Specific Plan Project will not exceed the City of Irwindale daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations. Project Option 1 operational noise level inputs and calculations are included in Appendix 9.1.



Receiver	Project O Noise Level	perational s (dBA Leq) ²	Noise Leve (dBA	l Standards Leq) ³	Noise Level Standards Exceeded? ⁴		
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
R1	37.5	37.4	50	45	No	No	
R2	47.9	47.9	50	_5	No	No	
R3	42.9	42.8	50	45	No	No	
R4	40.2	40.1	50	45	No	No	
R5	36.1	36.0	50	_6	No	No	

TABLE 9-2: OPTION 1 - OPERATIONAL NOISE LEVEL COMPLIANCE

¹ See Exhibit 8-A for the receiver locations.

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

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

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

⁵ Represents the Kare Youth League sports complex and does not include any noise sensitive nighttime receivers.

⁶ Represents the Olive Middle School and does not include any noise sensitive nighttime receivers.

"Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

9.4.2 OPTION 2 SITE PLAN

Table 9-3 shows Project Option 2 operational noise levels during the daytime hours are expected to range from 37.7 to 47.9 dBA L_{eq} with nighttime hourly noise levels ranging from 37.7 to 47.8 dBA L_{eq} . The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1. Table 9-3 shows that the operational noise levels associated with Irwindale Gateway Specific Plan Project will not exceed the City of Irwindale daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations. Project Option 1 operational noise level inputs and calculations are included in Appendix 9.2.

Receiver	Project Operational Noise Levels (dBA Leq) ²		Noise Leve (dBA	l Standards Leq) ³	Noise Level Standards Exceeded? ⁴	
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	37.7	37.7	50	45	No	No
R2	47.9	47.8	50	_5	No	No
R3	42.4	42.3	50	45	No	No
R4	41.5	41.4	50	45	No	No
R5	39.0	39.0	50	_6	No	No

TABLE 9-3: OPTION 2 - OPERATIONAL NOISE LEVEL COMPLIANCE

¹ See Exhibit 8-A for the receiver locations.

² Project Option 2 operational noise level calculation included in Appendix 9.2.

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?

⁵ Represents the Kare Youth League sports complex and does not include any noise sensitive nighttime receivers.

⁶ Represents the Olive Middle School and does not include any noise sensitive nighttime receivers.

"Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.





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:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment.

9.5.1 OPTION 1 SITE PLAN

Noise levels that would be experienced at receiver locations when Project Option 1 source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-4 and 9-5, respectively. As indicated on Tables 9-4 and 9-5, Project Option 1 will generate noise level increases ranging from 0.0 to 0.1 dBA L_{eq} at the nearest receiver locations. Project Option 1 will not exceed the operational noise level increase significance criteria presented in Table 4-1, and, therefore, the increases at the sensitive receiver locations will be *less than significant*.

TABLE 9-4: OPTION 1	- DAYTIME PROJECT	OPERATIONAL NOISE LE	VEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	37.5	L1	58.2	58.2	0.0	5.0	No
R2	47.9	L2	74.2	74.2	0.0	1.5	No
R3	42.9	L3	65.0	65.0	0.0	1.5	No
R4	40.2	L4	62.6	62.6	0.0	5.0	No
R5	36.1	L5	63.2	63.2	0.0	5.0	No

¹ See Exhibit 8-A for the receiver locations.

² Total Project Option 1 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 Option 1 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 1 activities.



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	37.4	L1	56.8	56.8	0.0	5.0	No
R2	47.9	L2	71.3	71.3	0.0	1.5	No
R3	42.8	L3	63.7	63.7	0.0	5.0	No
R4	40.1	L4	56.5	56.6	0.1	5.0	No
R5	36.0	L5	57.2	57.2	0.0	5.0	No

TABLE 9-5: OPTION 1 - NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

¹ See Exhibit 8-A for the receiver locations.

² Total Project Option 1 nighttime operational noise levels as shown on Table 9-2.

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 Option 1 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 1 activities.

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

9.5.1 OPTION 2 SITE PLAN

Noise levels that would be experienced at receiver locations when Project Option 2 source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-6 and 9-7, respectively. As indicated on Tables 9-6 and 9-7, Project Option 2 will generate noise level increases ranging from 0.0 to 0.1 dBA L_{eq} at the nearest receiver locations. Project Option 2 will not exceed the operational noise level increase significance criteria presented in Table 4-1, and, therefore, the increases at the sensitive receiver locations will be *less than significant*.

	TABLE 9-6: OPTION 2	- 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	37.7	L1	58.2	58.2	0.0	5.0	No
R2	47.9	L2	74.2	74.2	0.0	1.5	No
R3	42.4	L3	65.0	65.0	0.0	1.5	No
R4	41.5	L4	62.6	62.6	0.0	5.0	No
R5	39.0	L5	63.2	63.2	0.0	5.0	No

¹ See Exhibit 8-A for the receiver locations.

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

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 Option 2 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 2 activities.



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	37.7	L1	56.8	56.9	0.1	5.0	No
R2	47.8	L2	71.3	71.3	0.0	1.5	No
R3	42.3	L3	63.7	63.7	0.0	5.0	No
R4	41.4	L4	56.5	56.6	0.1	5.0	No
R5	39.0	L5	57.2	57.3	0.1	5.0	No

TABLE 9-7: OPTION 2 - NIGHTTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

¹ See Exhibit 8-A for the receiver locations.

² Total Project Option 2 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 Option 2 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 2 activities.

10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the on-site construction noise source activities in relation to the nearest sensitive receiver locations previously described in Section 8. The City of Irwindale Municipal Code, Section 9.28.110, indicates that construction activity is limited to the hours of 7:00 a.m. to 7:00 p.m. and cannot constitute a violation of Section 9.28.040 unless authorized by a building inspector. In addition, Section 9.28.040 identifies the construction noise level threshold for use in this noise study and indicates that Project construction noise levels shall not exceed the base exterior noise level standard or the ambient noise level by more than 5 dBA at sensitive receiver locations. (14)

10.1 CONSTRUCTION NOISE LEVELS

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

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (21) 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

15410-02 NA



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 39.5 to 59.9 dBA L_{eq} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

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	
C'I	Crawler Tractors	78			
Site	Hauling Trucks	72	80	112	
reputation	Rubber Tired Dozers	75			
	Graders	81			
Grading	Excavators	77	83	115	
	Compactors	76			
	Cranes	73			
Building	Tractors	80	81	113	
construction	Welders	70			
	Pavers	74			
Paving	Paving Equipment	82	83	115	
	Rollers	73			
	Cranes				
Architectural	Air Compressors	74	77	109	
couting	Generator Sets	70			

TABLE 10-1: PCONSTRUCTION REFERENCE NOISE LEVELS

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.



_ ·		Construction Noise Levels (dBA Leq)						
Receiver Location ¹	Site Preparation	Grading	Building Construction	Paving	Off-Site Utilities	Highest Levels ²		
R1	41.5	44.5	42.5	44.5	39.5	44.5		
R2	56.9	59.9	57.9	59.9	54.9	59.9		
R3	47.9	50.9	48.9	50.9	45.9	50.9		
R4	48.1	51.1	49.1	51.1	46.1	51.1		
R5	45.8	48.8	46.8	48.8	43.8	48.8		

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

¹Construction noise source and receiver locations are shown on Exhibit 10-A.

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

10.4 PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related noise level increase threshold of 5 dBA is used consistent with City of Irwindale Municipal Code Section 9.28.040. Table 10-3 shows that Project construction noise levels will generate noise level increases ranging from 0.2 to 0.3 dBA L_{eq} at the nearest receiver locations. The construction noise analysis shows that the nearest receiver locations will not exceed the noise level increase threshold of 5 dBA. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

	TABLE 10-3:	PROJECT SITE	CONSTRUCTION	NOISE LEVEL	COMPLIANCE
--	--------------------	---------------------	--------------	--------------------	------------

Receiver Location ¹	Total Project Construction 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	44.5	L1	58.2	58.4	0.2	5	No
R2	59.9	L2	74.2	74.4	0.2	5	No
R3	50.9	L3	65.0	65.2	0.2	5	No
R4	51.1	L4	62.6	62.9	0.3	5	No
R5	48.8	L5	63.2	63.4	0.2	5	No

¹ Construction noise source and receiver locations are shown on Exhibit 10-A.

² Highest construction noise level as shown on Table 10-2.

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 construction activities.

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



10.5 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 10-4. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential for human response (annoyance) and building damage using the following vibration assessment methods defined by the FTA. To describe the vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

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

TABLE 10-4: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-5 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 437 to 4,518 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.003 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 sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

Location ¹	Distance to Const. Activity (Feet) ²	Typical Construction Vibration Levels PPV (in/sec) ³						Thresholds	Thresholds
		Small bulldozer	Jackhammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level	PPV (in/sec)⁴	Exceeded? ⁵
R1	4,518'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R2	437'	0.000	0.000	0.001	0.001	0.003	0.003	0.3	No
R3	2,372'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R4	2,209'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R5	2,764'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No

TABLE 10-5: PROJECT CONSTRUCTION VIBRATION LEVELS

¹Construction noise source and receiver locations are shown on Exhibit 10-A.

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

³ Based on the Vibration Source Levels of Construction Equipment (Table 10-4).

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

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

"PPV" = Peak Particle Velocity

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



11 REFERENCES

- 1. State of California. California Environmental Quality Act, Appendix G. 2018.
- 2. California Department of Transportation Environmental Program. *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
- 3. Environmental Protection Agency Office of Noise Abatement and Control. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974. EPA/ONAC 550/9/74-004.
- 4. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch. *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. December 2011.
- 5. U.S. Department of Transportation Federal Highway Administration. *Highway Noise Barrier Design Handbook*. 2001.
- 6. U.S. Department of Transportation, Federal Highway Administration. *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
- 7. U.S. Environmental Protection Agency Office of Noise Abatement and Control. *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise*. October 1979 (revised July 1981). EPA 550/9/82/106.
- 8. U.S. Department of Transportation, Federal Transit Administration. *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
- 9. Office of Planning and Research. State of California General Plan Guidelines. 2019.
- 10. —. State of California General Plan Guidlines. 2017.
- 11. City of Irwindale. Municipal Code, Chapter 9.28 Noise Regulation.
- 12. California Department of Transportation. *Transportation and Construction Vibration Guidance Manual.* April 2020.
- 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. Iteris, Inc. Irwindale Gateway Traffic Impact Analysis. May 2023.
- 21. Tesla. Tesla Megapack Site Design Manual. 9/20/2019.



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



12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Irwindale Gateway Specific Plan 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





This page intentionally left blank

APPENDIX 3.1:

CITY OF IRWINDALE MUNICIPAL CODE

This page intentionally left blank


Chapter 9.28 NOISE REGULATION¹

Sections:

9.28.010 Declaration of policy.

It is declared to be the policy of the city to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power and contrary to the public interest. At certain levels noises are detrimental to the health and welfare of the citizenry and in the public interest shall be systematically proscribed.

(Ord. 297 § 1(part), 1976: prior code § 4800).

9.28.020 Definitions.

As used in this chapter, unless the context otherwise clearly indicates, the words and phrases used in this chapter are defined as follows:

- A. "Ambient base noise level" means reasonable and representative ambient noise levels in various land use categories in the city and at various times as established by the planning commission.
- B. "Ambient noise level" means the all-encompassing noise associated with a given environment, usually being a composite of sounds with many sources excluding the alleged offensive noise at the location and approximate time at which a comparison with the alleged offensive noise is to be made.
- C. "Commercial purpose" means and includes the use, operation, or maintenance of any sound amplifying equipment for the purpose of advertising any business, or any good, or any services, or for the purpose of attracting the attention of the public to, or advertising for, or soliciting patronage or customers to or for any performance, show entertainment, exhibition, or event, or for the purpose of demonstrating any such sound equipment.
- D. "Decibel (dB)" means a unit of level which denotes the ratio between two quantities which are proportional to power; the number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base ten of this ratio.
- E. "Emergency work" means work made necessary to restore property to a safe condition following a public calamity, or work required to protect persons or property from an imminent exposure to danger, or work performed by public utilities or public agencies and utility companies.
- F. "Motor vehicles" includes, but is not limited to, off-road vehicles, minibikes and gocarts.
- G. "Noise level" means the "A" weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty micronewtons per square meter. The unit of measure is the dB(A).

^{1*} For statutory provisions dealing with noise control, see Health and Saf. Code § 46000 <u>et seq.</u>; for provisions on the requirement of noise element as a guideline for use in land development, see Gov. Code § 65302(G); for provisions on noise limits for motor vehicles, see Vehicle Code § 27200 <u>et seq.</u>

- H. "Noncommercial purpose" means the use, operation, or maintenance of any sound amplifying equipment for other than a commercial purpose. "Noncommercial purpose" means and includes, but shall not be limited to, philanthropic, political, patriotic and charitable purposes.
- I. "Person" means a person, firm, association, copartnership, joint venture, corporation, or any entity, public or private in nature.
- J. "Sound amplifying equipment" means any machine or device for the amplification of the human voice, music, or any other sound. "Sound amplifying equipment" does not include standard automobile radios when used and heard only by the occupants of the vehicle in which the automobile radio is installed. "Sound amplifying equipment," as used in this chapter, does not include warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.
- K. "Sound level meter" means an instrument meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.
- L. "Sound pressure level," in decibels, of a sound means twenty times the logarithm to the base ten of the ratio of the pressure of this sound to the reference pressure, which reference pressure shall be explicitly stated.
- M. "Sound truck" means any motor vehicle, or any other vehicle regardless of motive power, whether in motion or stationary, having mounted thereon, or attached thereto, any sound amplifying equipment.

(Ord. 297 § 1(part), 1976: prior code § 4801).

9.28.030 Ambient base noise levels designated—Proof of violation.

A. Where the ambient noise level is less than designated in this section, the ambient base noise level in this section shall govern.

Zone	Ambien	t Base Noise Level
	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.
Residential	45	50
Commercial	50	55
Industrial	60	70

B. Any noise at a level which exceeds the ambient or the ambient base level as set forth in subsection A of this section, whichever is greater, by more than ten dB when measured at any boundary line of the property from which the noise emanates shall constitute sufficient proof of a violation.

(Ord. 297 § 1(part), 1976: prior code § 4803).

9.28.040 Noise level violation designated.

It is unlawful for any person to wilfully make or continue, or cause to be made or continued any noise at a level which exceeds by more than five dB the ambient or the ambient base level as set forth in Section 9.28.030, whichever is greater, when measured at any boundary line of the property from which the noise emanates.

(Ord. 297 § 1(part), 1976: prior code § 4804).

9.28.050 Radios, television sets and similar devices.

It is unlawful for any person within any residential zone of the city to use or operate any radio receiving set, musical instrument, phonograph, television set or other machine or device for the producing or reproducing of sound in a manner which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4820).

9.28.060 Hawkers and peddlers.

It is unlawful for any person within the city to sell anything by outcry within any area of the city zones for residential uses.

(Ord. 297 § 1 (part), 1976: prior code § 4821).

9.28.070 Drums.

It is unlawful for any person to use any drum or other instrument or device of any kind for the purpose of attracting attention for commercial purposes by the creation of noise within the city. This section shall not apply to any person who is a participant in a duly authorized parade or who has been otherwise duly authorized to engage in such conduct.

(Ord. 297 § 1(part), 1976: prior code § 4822).

9.28.080 Schools and churches.

It is unlawful for any person to create any noise on any street, sidewalk or public place adjacent to any school, institution of learning, or church while the same is in use, if such noise unreasonably interferes with the working of such institution or would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4823).

9.28.090 Animals and fowl.

No person shall keep or maintain, or permit the keeping of, upon any premises owned, occupied or controlled by such person, any animal or fowl otherwise permitted to be kept which, by any sound, cry, or behavior, shall cause noise in any residential neighborhood which would constitute a violation of Section 9.28.040, or otherwise constitute a nuisance.

(Ord. 297 § 1(part), 1976: prior code § 4824).

9.28.100 Machinery, equipment, fans, and air conditioning.

It is unlawful for any person to operate any machinery, equipment, pump, fan, air-conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at any boundary line of any property from which such noise emanates to exceed the ambient noise level or the ambient base level as set forth in Section 9.28.030, whichever is greater, by more than ten decibels; provided, however, this section shall not prevent the reasonable operation of customary household gardening equipment or hobby shop equipment during the hours of eight a.m. to nine p.m., Monday through Saturday, and ten a.m. to eight p.m. on

Sunday, provided the same may not exceed eighty decibels (as measured from the adjacent property line) for more than three hours from sunup to sundown.

(Ord. 297 § 1(part), 1976: prior code § 4825).

9.28.110 Construction of building and projects—Times specified.

A. It is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on a development requiring a city permit, in such a manner that noise is produced which would constitute a violation of Section 9.28.040, unless beforehand authorization therefor has been duly obtained from the building inspector. Such activity is unlawful without a permit during all hours on Sunday. No permit shall be required to perform emergency work as defined in subsection E of 9.28.020.

B. Construction authorized by subsection A of this section shall be limited to seven a.m. to seven p.m.

(Ord. 297 § 1(part), 1976: prior code § 4830).

9.28.120 Industry and racetracks.

The noise level from industrial plants, auto wreckers, junkyards, racetracks or other industrial user shall not exceed the levels set forth in Section 9.28.040, except as may be specifically authorized by permit from the city.

(Ord. 297 § 1(part), 1976: prior code § 4860).

9.28.130 Vehicle repairs.

It is unlawful for any person within any residential area of the city to repair, rebuild or test any motor vehicle thereby producing noise which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1 (part), 1976: prior code § 4840).

9.28.140 Motor-driven vehicles.

It is unlawful for any person to operate any motor-driven vehicle within the city in such a manner producing noise which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4841).

9.28.150 Amplified sound—Purpose of provisions.

The council enacts this legislation for the sole purpose of securing and promoting the public health, comfort, safety and welfare for its citizenry. While recognizing that the use of sound amplifying equipment for certain purposes is protected by the constitutional rights of freedom of speech and assembly, the council nevertheless feels obligated to reasonably regulate the use of sound amplifying equipment in order to protect the correlative constitutional rights of the citizens of this community to privacy and freedom from public nuisance of loud and unnecessary noise.

(Ord. 297 § 1(part), 1976: prior code § 4850).

(Supp. No. 15)

9.28.160 Amplified sound—Commercial use prohibited.

It is unlawful for any person to install, use, or operate within the city for commercial purposes, a loudspeaker or sound amplifying equipment in a fixed or movable position or mounted upon an.y sound truck.

(Ord. 297 § 1(part), 1976: prior code § 4851).

9.28.170 Amplified sound—Registration statement—Required.

It is unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use or operate within the city for noncommercial purposes a loudspeaker or sound amplifying equipment in a fixed or movable position or mounted upon any sound truck for the purposes of giving instructions, directions, talks, addresses, lectures or transmitting music to any persons or assemblages of persons in or upon any street, alley, sidewalk, park, place or public property without first filing a registration statement and obtaining approval thereof, as set forth in Section 9.28.180.

(Ord. 297 § 1(part), 1976: prior code § 4852).

9.28.180 Amplified sound—Registration statement—Filing—Approval—Disapproval— Revocation.

A. Filing. Every user of sound amplifying equipment for noncommercial purposes shall file a registration statement with the chief of police ten days prior to the date on which the sound amplifying equipment is intended to be used, which statement shall contain the following information:

- 1. The name, address and telephone number of both the owner and user of the sound amplifying equipment;
- 2. The maximum sound producing power of the sound amplifying equipment which shall include the wattage to be used, the volume in decibels of sound which will be produced, and the approximate distance for which sound will be audible from the sound amplifying equipment;
- 3. The license and motor number if a sound truck is to be used;
- 4. A general description of the sound amplifying equipment which is to be used; and
- 5. The nature of the use of the sound amplifying equipment proposed to be used for noncommercial purposes.
- B. Approval. The chief of police shall return to the applicant an approved certified copy of the registration statement unless he finds that:
 - 1. The conditions of the motor vehicle movement are such that in the opinion of the chief of police, use of the equipment would constitute a detriment to traffic safety; or
 - 2. The conditions of pedestrian movement are such that use of the equipment would constitute a detriment to traffic safety; or
 - 3. The registration statement required reveals that the applicant would violate the provisions set forth in Section 9.28.150, or any other provisions of this code.
- C. Disapproval. In the event the registration statement is disapproved, the chief of police shall endorse upon the statement his reasons for disapproval and return it forthwith to the applicant.
- D. Revocation. Any such permit may be revoked for violation of Section 9.28.150.

(Ord. 297 § 1(part), 1976: prior code § 4853).

9.28.190 Amplified sound—Appeals.

Any person aggrieved by disapproval of a registration statement may file an appeal to the city council within ten days of the date of disapproval. The city council shall decide the appeal at its next meeting.

(Ord. 297 § 1(part), 1976: prior code § 4854).

9.28.200 Amplified sound—Regulations of noncommercial use.

The noncommercial use of sound amplifying equipment shall be subject to the following regulations:

- A. The only sound permitted shall be either music or human speech or both.
- B. The operation of sound amplifying equipment shall only occur between the hours of eight a.m. and six p.m. each day except on Sundays and legal holidays. The operation of sound amplifying equipment on Sundays and legal holidays shall only occur between the hours of ten a.m. and six p.m.
- C. No sound emanating from sound amplifying equipment shall exceed fifteen dB above the ambient as measured at any property line.
- D. Notwithstanding the provisions of subsection C of this section, sound amplifying equipment shall not be operated within two hundred feet of churches, schools, or city or county buildings, except by special permit.
- E. In any event, the volume of sound shall be so controlled that it will not be unreasonably loud, raucous, jarring, disturbing or a nuisance to reasonable persons of normal sensitiveness within the area of audibility.

(Ord. 297 § 1(part), 1976: prior code § 4855).

9.28.210 Excessive noise prohibited.

Notwithstanding any other provision of this chapter, it is unlawful for any person to wilfully make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace or quiet of any neighborhood.

(Ord. 297 § 1(part), 1976: prior code § 4870).

9.28.220 Standards for determining violation of Section 9.28.210.

The standards which may be considered in determining whether a violation of the provisions of Section 9.28.210 exists shall include, but not be limited to, the following:

- A. The loudness of the noise;
- B. The intensity of the noise;
- C. Whether the nature of the noise is usual or unusual;
- D. Whether the origin of the noise is natural or unnatural;
- E. The loudness and intensity of the background noise, if any;

- F. The proximity of the noise to residential sleeping facilities;
- G. The nature and zoning of the area within which the noise emanates;
- H. The density of the inhabitation of the area within which the noise emanates;
- I. The time of the day or night the noise occurs;
- J. The duration of the noise;
- K. Whether the noise is recurrent, intermittent, or continuous; and
- L. Whether the noise is produced by a commercial or residential activity.

(Ord. 297 § 1(part), 1976: prior code § 4871).

9.28.230 Exclusions to chapter applicability.

The provisions of this chapter shall not apply to:

- A. Sound produced by motor vehicles as regulated by sound limitation provisions of the California Vehicle Code when such vehicle is located or operated on any public street, right-of-way or highway;
- B. Aircraft operated in conformity with federal law;
- C. Public and private schools, organized activities including sports, carnivals, assemblies and other regular activities;
- D. Construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public works projects or essential public services and facilities, including those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission;
- E. Activities of the federal, state or local government;
- F. Any noise continuing for less than thirty seconds at intervals greater than once in three hours.

(Ord. 297 § 1(part), 1976: prior code § 4880).

9.28.240 Effect of chapter.

Nothing in this chapter shall authorize any use otherwise prohibited or regulated by this code.

(Ord. 297 § 1(part), 1976: prior code § 4808).

9.28.250 Noise level enforcement criteria.

Enforcement of the provisions of this chapter shall be based on a noise level measurement to establish the noise level. The measurement shall be taken in accordance with the city's administrative instruction concerning noise level measurement procedure.

(Ord. 297 § 1(part), 1976: prior code § 4802).

9.28.251 Residential parties—Publicized commercialism regulated.

A. Definitions. For the purpose of this section:

- 1. "Major party" means a group of more than fifty persons meeting together for social, recreational or amusement purposes, but excluding meetings for political, charitable or religious purposes.
- 2. "Residence" means:
 - a. any property used for residential use; and
 - b. any property situated in any of the residential zones as defined and zoned in the zoning code of this city.
- 3. "Publicized" means an open invitation circulated by flyer or advertised by publication, posting or distribution in or about public places suggesting unlimited or unreserved attendance.
- 4. "Commercial" means the suggestion or request of a monetary charge for admission.
- 5. "Permit" means a permit issued by either the city council, city manager or police chief. Such permit shall be issued upon application unless the issuer finds that such party will (or is likely to) cause problems relating to traffic, overcrowding, noise, hours after eleven p.m. or other matters affecting residential quality of life. Such permits may also contain appropriate conditions.
- B. It is unlawful to have or permit a publicized commercial major party in a residence in this city without a permit or other than in compliance with such permit.
- C. violation of this section is punishable by a fine not to exceed five hundred dollars or by imprisonment for not to exceed six months, or by both such fine and imprisonment.

(Ord. 408 § 1, 1986: Ord. 366 § 1, 1983).

9.28.260 Violations—Penalties.

Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be fined in an amount not exceeding five hundred dollars or be imprisoned in the county jail for a period not exceeding six months, or by both such fine and imprisonment. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

(Ord. 297 § 1(part), 1976: prior code § 4805).

9.28.270 Violations—Additional remedies—Injunctions.

As an additional remedy, the operation or maintenance of any device, instrument, vehicle, or machinery in violation of any provision of this chapter shall be deemed, and is declared to be, a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction.

(Ord. 297 § 1(part), 1976: prior code § 4806).

APPENDIX 3.2:

LOS ANGELES COUNTY CODE OF ORDINANCES

This page intentionally left blank

Chapter 12.08 NOISE CONTROL

Parts:

Part 1 GENERAL PROVISIONS

12.08.010 Title for citation.

The ordinance codified in this chapter may be cited as the "noise control ordinance of the county of Los Angeles."

(Ord. 11778 § 2 (Art. 1 § 101), 1978: Ord. 11773 § 2 (Art. 1 § 101), 1978.)

12.08.020 Declaration of policy—Nuisances deemed misdemeanors.

- A. In order to control unnecessary, excessive and annoying noise and vibration in the county of Los Angeles, it is declared to be the policy of the county to prohibit such noise and vibration generated from any sources as specified in this chapter. It shall be the policy of the county to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the county where noise levels are above acceptable values.
- B. It is determined that certain noise levels and vibration are detrimental to the public health, welfare and safety and contrary to public interest, and therefore the board of supervisors of the county does ordain and declare that creating, maintaining, causing or allowing to be created, caused or maintained any noise or vibration in a manner prohibited by or not in conformity with the provisions of this chapter is a public nuisance and shall be punishable as such.

(Ord. 11778 § 2 (Art. 2 § 201), 1978: Ord. 11773 § 2 (Art. 2 § 201), 1978.)

Part 2 DEFINITIONS

12.08.030 Terminology—Conformity with ANSI standards.

All terminology used in this chapter, not defined in this Part 2, shall be in conformance with applicable publications of the American National Standards Institute (ANSI) or its successor body.

(Ord. 11778 § 2 (Art. 3 § 301), 1978: Ord. 11773 § 2 (Art. 3 § 301), 1978.)

12.08.040 Definitions applicable.

The following words, phrases and terms as used in this chapter shall have the meanings as indicated in this Part 2.

(Ord. 11778 § 2 (Art. 3 § 302 (part)), 1978: Ord. 11773 § 2 (Art. 3 § 302 (part)), 1978.)

12.08.050 Agricultural property.

"Agricultural property" means a parcel of real property which is undeveloped for any use other than agricultural purposes.

(Ord. 11778 § 2 (Art. 3 § 302(a)), 1978: Ord. 11773 § 2 (Art. 3 § 302(a)), 1978.)

12.08.060 Ambient noise histogram.

"Ambient noise histogram" means the composite of all noise from sources near and far, excluding the alleged intrusive noise source. In this context, the ambient noise histogram shall constitute the normal or existing level of environmental noise at a given location.

(Ord. 11778 § 2 (Art. 3 § 302(b)), 1978: Ord. 11773 § 2 (Art. 3 § 302(b)), 1978.)

12.08.070 A-weighted sound level.

"A-weighted sound level" means the sound level in decibels as measured on a soundlevel meter using the A-weighting network. The level so read is designated dB (A) or dBA.

(Ord. 11778 § 2 (Art. 3 § 302(c)), 1978: Ord. 11773 § 2 (Art. 3 § 302(c)), 1978.)

12.08.080 Commercial property.

"Commercial property" means a parcel of real property which is developed and used either in part or in whole for commercial purposes. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable. (See Title 22 of this code.)

(Ord. 11778 § 2 (Art. 3 § 302(d)), 1978: Ord. 11773 § 2 (Art. 3 § 302(d)), 1978.)

12.08.090 Construction.

"Construction" means any site preparation, assembly, erection, substantial repair, alteration, or similar action, for or of public or private rights-of-way, structures, utilities, or similar property.

(Ord. 11778 § 2 (Art. 3 § 302(e)), 1978: Ord. 11773 § 2 (Art. 3 § 302(e)), 1978.)

12.08.100 Cumulative period.

"Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.

(Ord. 11778 § 2 (Art. 3 § 302(f)), 1978: Ord. 11773 § 2 (Art. 3 § 302(f)), 1978.)

12.08.110 Decibel.

"Decibel" means a unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base of 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

(Ord. 11778 § 2 (Art. 3 § 302(g)), 1978: Ord. 11773 § 2 (Art. 3 § 302(g)), 1978.)

12.08.120 Dwelling unit.

"Dwelling unit" means a single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

(Ord. 11778 § 2 (Art. 3 § 302(h)), 1978: Ord. 11773 § 2 (Art. 3 § 302(h)), 1978.)

12.08.130 Emergency machinery, vehicle or alarm.

"Emergency machinery, vehicle or alarm" means any machinery, vehicle or alarm used, employed, performed or operated in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

(Ord. 11778 § 2 (Art. 3 § 302(i)), 1978: Ord. 11773 (Art. 3 § 302(i)), 1978.)

12.08.140 Emergency work.

"Emergency work" means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency.

(Ord. 11778 § 2 (Art. 3 § 302(j)), 1978: Ord. 11773 (Art. 3 § 302(j)), 1978.)

12.08.150 Fixed noise source.

"Fixed noise source" means a stationary device which creates sounds while fixed or motionless, including but not limited to residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners and refrigeration equipment.

(Ord. 11778 § 2 (Art. 3 § 302(k)), 1978: Ord. 11773 (Art. 3 § 302(k)), 1978.)

12.08.160 Grading.

"Grading" means any excavating or filling of earth material or any combination thereof conducted at a site to prepare said site for construction or other improvements thereon.

(Ord. 11778 § 2 (Art. 3 § 302(1)), 1978: Ord. 11773 (Art. 3 § 302(1)), 1978.)

12.08.170 Health care institution.

"Health care institution" means any hospital, convalescent home, or other similar facilities which provide health care, medical treatment, room, board or other services for the ill, retarded or convalescent.

(Ord. 11778 § 2 (Art. 3 § 302(m)), 1978: Ord. 11773 (Art. 3 § 302(m)), 1978.)

12.08.180 Health officer.

"Health officer" means the director of the department of public health of the county of Los Angeles, or his duly authorized representative.

(Ord. 2006-0040 § 106, 2006: Ord. 11778 § 2 (Art. 3 § 302(n)), 1978: Ord. 11773 (Art. 3 § 302(n)), 1978.)

12.08.190 Impulsive noise.

"Impulsive noise" means a sound of short duration, usually less than one second and of high intensity, with an abrupt onset and rapid decay.

(Ord. 11778 § 2 (Art. 3 § 302(o)), 1978: Ord. 11773 (Art. 3 § 302 (o)), 1978.)

12.08.200 Industrial property.

"Industrial property" means property which is developed and used either in part or in whole for manufacturing purposes. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable. (See Title 22 of this code.)

(Ord. 11778 § 2 (Art. 3 § 302(p)), 1978: Ord. 11773 § 2 (Art. 3 § 302(p)), 1978.)

12.08.210 Intrusive noise.

"Intrusive noise" means that alleged offensive noise which intrudes over and above the existing ambient noise at the receptor property.

(Ord. 11778 § 2 (Art. 3 § 302(q)), 1978: Ord. 11773 § 2 (Art. 3 § 302(q)), 1978.)

12.08.220 Mobile noise source.

"Mobile noise source" means any noise source other than a fixed noise source.

(Ord. 11778 § 2 (Art. 3 § 302(r)), 1978: Ord. 11773 § 2 (Art. 3 § 302(r)), 1978.)

12.08.230 Noise disturbance.

"Noise disturbance" means an alleged intrusive noise which violates an applicable noise standard as set forth in this chapter.

(Ord. 11778 § 2 (Art. 3 § 302(s)), 1978: Ord. 11773 § 2 (Art. 3 § 302(s)), 1978.)

12.08.240 Noise histogram.

"Noise histogram" means a graphical representation of the distribution of frequency of occurrence of all noise levels near and far measured over a given period of time.

(Ord. 11778 § 2 (Art. 3 § 302(u)), 1978: Ord. 11773 § 2 (Art. 3 § 302(u)), 1978.)

12.08.250 Noise level (L $_{\rm N}$).

"Noise level (L $_{\rm N}$)" means that noise level expressed in decibels which exceeds the specified (L $_{\rm N}$) value as a percentage of total time measured. For instance, an L $_{25}$ noise level means that noise level which is exceeded 25 percent of the time measured.

(Ord. 11778 § 2 (Art. 3 § 302 (v)), 1978: Ord. 11773 § 2 (Art. 3 § 302(v)), 1978.)

```
(Supp. No. 134, Update 3)
```

12.08.260 Noise-sensitive zone.

"Noise-sensitive zone" means any area designated pursuant to Part 4 of this chapter for the purpose of ensuring exceptional quiet.

(Ord. 11778 § 2 (Art. 3 § 302(t)), 1978: Ord. 11773 § 2 (Art. 3 § 302(t)), 1978.)

12.08.270 Noise zone.

"Noise zone" means any defined area or region of a generally consistent land use, as described in Section 12.08.380.

(Ord. 11778 § 2 (Art. 3 § 302(w)), 1978: Ord. 11773 § 2 (Art. 3 § 302(w)), 1978.)

12.08.280 Person.

"Person" means any individual, firm, association, partnership, joint venture, or corporation.

(Ord. 11778 § 2 (Art. 3 § 302(x)), 1978: Ord. 11773 § 2 (Art. 3 § 302(x)), 1978.)

12.08.290 Powered model vehicle.

"Powered model vehicle" means any self-propelled airborne, waterborne or landborne plane, vessel or vehicle which is not designed to carry individuals, including but not limited to any model airplane, boat, car or rocket.

(Ord. 11778 § 2 (Art. 3 § 302(y)), 1978: Ord. 11773 § 2(Art. 3 § 302(y)), 1978.)

12.08.300 Public right-of-way.

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

(Ord. 11778 § 2 (Art. 3 § 302(z)), 1978: Ord. 11773 § 2 (Art. 3 § 302(z)), 1978.)

12.08.310 Pure tone noise.

"Pure tone noise" means any sound which can be judged as audible as a single pitch or a set of single pitches by the health officer, for the purposes of this chapter, a pure tone shall exist if the one-third octave band sound-pressure level in the band with the tone exceeds the arithmetic average of the sound-pressure levels of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hertz and above, and by 8 dB for center frequencies between 160 and 400 Hertz, and by 15 dB for center frequencies less than or equal to 125 Hertz.

(Ord. 11778 § 2 (Art. 3 § 302(aa)), 1978: Ord. 11773 § 2 (Art. 3 § 302(aa)), 1978.)

12.08.320 Real property boundary.

"Real property boundary" means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including intrabuilding real property divisions.

(Ord. 11778 § 2 (Art. 3 § 302(bb)), 1978: Ord. 11773 § 2 (Art. 3 § 302(bb)), 1978.)

12.08.330 Residential property.

"Residential property" means a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable.

(Ord. 11778 § 2 (Art. 3 § 302(cc)), 1978: Ord. 11773 § 2 (Art. 3 § 302(cc)), 1978.)

12.08.340 Sound level meter.

"Sound level meter" means an instrument, including a microphone, an amplifier, an output meter and frequency weighting network, for the measurement of sound levels, which satisfies the requirements pertinent for Type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.

(Ord. 11778 § 2 (Art. 3 § 302(dd)), 1978: Ord. 11773 § 2 (Art. 3 § 302(dd)), 1978.)

12.08.350 Vibration.

"Vibration" means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observations of moving objects. The perception threshold shall be presumed to be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

(Ord. 11778 § 2 (Art. 3. § 302(ee)), 1978: Ord. 11773 § 2 (Art. 3 § 302(ee)), 1978.)

12.08.360 Weekday.

"Weekday" means any day, Monday through Friday, which is not a legal holiday.

(Ord. 11778 § 2 (Art. 3 § 302(ff)), 1978: Ord. 11773 § 2 (Art. 3 § 302(ff), 1978.)

Part 3 COMMUNITY NOISE CRITERIA

12.08.370 Decibel measurement—Basis.

Any decibel measurement made pursuant to the provisions of this chapter shall be based on a reference soundpressure of 20 micropascals, as measured with a sound level meter using the A-weighted network (scale) at slow response, or at the fast response when measuring impulsive sound levels and vibrations.

(Ord. 11778 § 2 (Art. 4 § 401), 1978: Ord. 11773 § 2 (Art. 4 § 401), 1978.)

12.08.380 Noise zones designated.

Receptor properties described hereinafter in this chapter are hereby assigned to the following noise zones:

Noise Zone I—Noise-sensitive area; Noise Zone II—Residential properties; Noise Zone III—Commercial properties; Noise Zone IV—Industrial properties.

(Ord. 11778 § 2 (Art. 4 § 402), 1978: Ord. 11773 § 2 (Art. 4 § 402), 1978.)

12.08.390 Exterior noise standards—Citations for violations authorized when.

A. Unless otherwise herein provided, the following exterior noise levels shall apply to all receptor properties within a designated noise zone:

Noise Zone	Designated Noise Zone Land Use (Receptor property)	Time Interval	Exterior Noise Level (dB)
1	Noise-sensitive area	Anytime	45
П	Residential properties	10:00 pm to 7:00 am (nighttime)	45
		7:00 am to 10:00 pm (daytime)	50
Ш	Commercial properties	10:00 pm to 7:00 am (nighttime)	55
		7:00 am to 10:00 pm (daytime)	60
IV	Industrial properties	Anytime	70

B. Unless otherwise herein provided, no person shall operate or cause to be operated, any source of sound at any location within the unincorporated county, or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level, when measured on any other property either incorporated or unincorporated, to exceed any of the following exterior noise standards:

Standard No. 1 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable noise level from subsection A of this section; or, if the ambient L50 exceeds the foregoing level, then the ambient L50 becomes the exterior noise level for Standard No. 1.

Standard No. 2 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable noise level from subsection A of this section plus 5dB; or, if the ambient L25 exceeds the foregoing level, then the ambient L25 becomes the exterior noise level for Standard No. 2.

Standard No. 3 shall be the exterior noise level which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable noise level from subsection A of this section plus 20dB; or, if the ambient L8.3 exceeds the foregoing level, then the ambient L8.3 becomes exterior noise level for Standard No. 3.

Standard No. 4 shall be the exterior noise level which may not be exceeded for a cumulative period of more than one minute in any hour. Standard No. 4 shall be the applicable noise level from subsection A of this section plus 15dB; or, if the ambient L1.7 exceeds the foregoing level, then the ambient L1.7 becomes the exterior noise level for Standard No. 4.

Standard No. 5 shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable noise level from subsection A of this section plus 20dB; or, if the ambient L0 exceeds the foregoing level then the ambient L0 becomes the exterior noise level for Standard No. 5.

- C. If the measurement location is on a boundary property between two different zones, the exterior noise level utilized in subsection B of this section to determine the exterior standard shall be the arithmetic mean of the exterior noise levels in subsection A of the subject zones. Except as provided for above in this subsection C, when an intruding noise source originates on an industrial property and is impacting another noise level as designated in subsection A shall be the daytime exterior noise level for the subject receptor property.
- D. The ambient noise histogram shall be measured at the same location along the property line utilized in subsection B of this section, with the alleged intruding noise source inoperative. If for any reason the alleged intruding noise source cannot be turned off, the ambient noise histogram will be estimated by performing a measurement in the same general area of the alleged intruding noise source but at a sufficient distance such that the noise from the alleged intruding noise source is at least 10dB below the ambient noise histogram in order that only the actual ambient noise histogram be measured. If the difference between the ambient noise histogram and the alleged intruding noise source is 5 to 10dB, then the level of the ambient noise histogram itself can be reasonably determined by subtracting a one-decibel correction to account for the contribution of the alleged intruding noise source.
- E. In the event the intrusive exceeds the exterior noise standards as set forth in subsections B and C of this section at a specific receptor property and the health officer has reason to believe that this violation at said specific receptor property was unanticipated and due to abnormal atmospheric conditions, the health officer shall issue an abatement notice in lieu of a citation. If the specific violation is abated, no citation shall be issued therefor. If, however, the specific violation is not abated, the health officer may issue a citation.

(Ord. 11778 § 2 (Art. 4 § 403), 1978: Ord. 11773 § 2 (Art. 4 § 403), 1978.)

12.08.400 Interior noise standards.

A. No person shall operate or cause to be operated within a dwelling unit, any source of sound, or allow the creation of any noise, which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed the following standards:

Standard No. 1 The applicable interior noise level for cumulative period of more than five minutes in any hour; or

Standard No. 2 The applicable interior noise level plus 5dB for a cumulative period of more than one minute in any hour; or

Standard No. 3 The applicable interior noise level plus 10dB or the maximum measured ambient noise level for any period of time.

B. The following interior noise levels for multifamily residential dwellings shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their normal seasonal configuration.

Noise Zone	Designated Land Use	Time Interval	Allowable Interior Noise Level (dB)
All	Multifamily	10 pm—7 am	40
	Residential	7 am—10 pm	45

C. If the measured ambient noise level reflected by the L50 exceeds that permissible within any of the interior noise standards in subsection A of Section 12.08.390, the allowable interior noise level shall be increased in 5dB increments in each standard as appropriate to reflect said ambient noise level (L50).

(Ord. 11778 § 2(Art. 4 § 404), 1978: Ord. 11773 § 2 (Art. 4 § 404), 1978.)

12.08.410 Correction for certain types of sounds.

For any source of sound which emits a pure tone or impulsive noise, the noise levels as set forth in Sections 12.08.390 and 12.08.400 shall be reduced by five decibels.

(Ord. 11778 § 2 (Art. 4 § 405), 1978: Ord. 11773 § 2 (Art. 4 § 405), 1978.)

12.08.420 Measurement methods.

- A. Utilizing the A-weighting scale of the sound-level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the noise level shall be measured at a position or positions at any point on the receiver's property.
- B. In general, the microphone shall be located four to five feet above the ground; 10 feet or more from the nearest reflective surface, where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized.
- C. Interior noise measurements shall be made within the affected residential unit. The measurements shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source, with windows in the normal seasonal configuration. Calibration of the measurement equipment, utilizing an acoustic calibrator, shall be performed immediately prior to recording any noise data.

(Ord. 11778 § 2 (Art. 4 § 406), 1978: Ord. 11773 § 2 (Art. 4 § 406), 1978.)

Part 4 SPECIFIC NOISE RESTRICTIONS

12.08.430 Acts deemed violations when.

Notwithstanding any other provisions of this chapter, the acts set out in this Part 4, and the causing or permitting thereof, are declared to be in violation of this chapter.

(Ord. 11778 § 2 (Art. 5 § 501 (part)), 1978: Ord. 11773 § 2 (Art. 5 § 501 (part)), 1978.)

12.08.440 Construction noise.

- A. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited.
- B. Noise Restrictions at Affected Structures. The contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in the following schedule:
 - 1. At Residential Structures.
 - a. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

Single-family Residential	Multi-family Residential	Semiresidential/
		Commercial

Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75dBA	80dBA	85dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60dBA	64dBA	70dBA

b. Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment:

	Single-family Residential	Multi-family Residential	Semiresidential/ Commercial
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60dBA	65dBA	70dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50dBA	55dBA	60dBA

- 2. At Business Structures.
 - a. Mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

Daily, including Sunday and legal holidays, all hours: maximum of 85dBA.

- C. All mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order.
- D. In case of a conflict between this chapter and any other ordinance regulating construction activities, provisions of any specific ordinance regulating construction activities shall control.
- (Ord. 11778 § 2 (Art. 5 § 501(c)), 1978: Ord. 11778 § 2 (Art. 5 § 501(c)), 1978.)

12.08.450 Forced-air blowers in tunnel car washes.

Operating or permitting the operation of any forced-air blower in a tunnel car wash between the hours of 7:00 a.m. and 8:00 p.m. in such a manner as to exceed any of the following sound levels is prohibited:

	Units Installed	
Measurement Location	Before 1-1-80 dB	On or After 1-1-80 dB
Any point on contiguous receptor property, five feet above grade level, no closer than three feet from any wall		
Residential	70	60
Commercial/Industrial	75	65

(Ord. 11778 § 2 (Art. 5 § 501(m)), 1978: Ord. 11773 § 2 (Art. 5 § 501(m)), 1978.)

12.08.460 Loading and unloading operations.

Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of 10:00 p.m. and 6:00 a.m. in such a manner as to cause noise disturbance is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(b)), 1978: Ord. 11773 § 2 (Art. 5 § 501(b)), 1978.)

12.08.470 Noise disturbances in noise-sensitive zones.

- A. Creating or causing the creation of any noise disturbance within any noise-sensitive zone, as designated by the health officer, is prohibited, provided that conspicuous signs are displayed indicating the presence of the zone.
- B. Noise-sensitive zones must be indicated by the display of conspicuous signs in at least three separate locations within 164 meters (one-tenth mile) of the institution or facility.

(Ord. 11778 § 2 (Art. 5 § 501(k)), 1978: Ord. 11773 § 2(Art. 5 § 501(k)), 1978.)

12.08.480 Places of public entertainment.

Operating, playing or permitting the operation or playing of any radio, television, phonograph, drum, musical instrument, sound amplifier or similar device which produces, reproduces or amplifies sound in any place of public entertainment at a sound level greater than 95dBA, as read by the slow response on a soundlevel meter at any point that is normally occupied by a customer is prohibited, unless a conspicuous and legible sign is located outside such place, near each public entrance, stating "WARNING: SOUND LEVELS WITHIN MAY CAUSE HEARING IMPAIRMENT."

(Ord. 11778 § 2 (Art. 5 § 501(f)), 1978: Ord. 11773 § 2 (Art. 5 § 501(f)), 1978.)

12.08.490 Powered model vehicles.

Operating or permitting the operation of powered model vehicles so as to create a noise disturbance across a residential real-property boundary, or within a noise-sensitive zone between the hours of 8:00 p.m. and 7:00 a.m. the following day is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(g)), 1978: Ord. 11773 § 2 (Art. 5 § 501(g)) 1978.)

12.08.500 Emergency signaling devices.

- A. The intentional sounding or permitting the sounding outdoors of any emergency signaling device, including fire, burglar or civil-defense alarm, siren, whistle, or similar stationary emergency signaling device, except for emergency purposes or for testing, as provided in subsection B2 below, is prohibited.
- B. 1. Testing of a stationary emergency signaling device shall not occur before 7:00 a.m. or after 7:00 p.m. Any such testing shall use only the minimum cycle test time. In no case shall such test time exceed 60 seconds.
 - 2. Testing of the complete emergency signaling system, including the functioning of the signaling device, and the personnel response to the signaling device, shall not occur more than once in each calendar month. Such testing shall not occur before 7:00 a.m. or after 10:00 p.m. The time limit specified in subsection B1 above shall not apply to such complete-system testing.

C. Sounding or permitting the sounding of any exterior burglar or fire alarm, or any motor-vehicle burglar alarm is prohibited, unless such alarm is terminated within 15 minutes of activation.

(Ord. 11778 § 2 (Art. 5 § 501(i)), 1978: Ord. 11773 § 2 (Art. 5 § 501(i)), 1978.)

12.08.510 Stationary nonemergency signaling devices.

- A. Sounding or permitting the sounding of any electronically amplified signal from any stationary bell, chime, siren, whistle, or similar device intended primarily for nonemergency purposes, from any place, for more than 10 consecutive seconds in any hourly period is prohibited.
- B. Houses of religious worship shall be exempt for the operation of this provision.
- C. Sound sources covered by this provision and not exempted under subsection B may be exempted by a variance issued by the health officer.

(Ord. 11778 § 2 (Art. 5 § 501(h)), 1978: Ord. 11773 § 2(Art. 5 § 501(h)), 1978.)

12.08.520 Refuse collection vehicles.

- A. On or after three years following August 17, 1978, the effective date of the ordinance codified in this chapter, operating or permitting the operation of the compacting mechanism of any motor vehicle which compacts refuse and which creates, during the compacting cycle, a sound level in excess of 86dBA when measured at 50 feet from any point of the vehicle is prohibited.
- B. Operating or permitting the operation of the compacting mechanism of any motor vehicle which compacts refuse between the hours of 10:00 p.m. and 6:00 a.m. the following day in a residential area or noise-sensitive zone, or within 500 feet thereof is prohibited.
- C. Collecting refuse with collection vehicle between the hours of 10:00 p.m. and 6:00 a.m. the following day in a residential area or noise-sensitive zone or within 500 feet thereof.
- D. In the case of conflict between this chapter and any other ordinance regulating refuse collection, provisions of any specific ordinance regulating refuse collection shall control.

(Ord. 11778 § 2 (Art. 5 § 501(j)), 1978: Ord. 11773 § 2 (Art. 5 § 501(j)), 1978.)

12.08.530 Residential airconditioning or refrigeration equipment.

Operating or permitting the operation of any airconditioning or refrigeration equipment in such a manner as to exceed any of the following sound levels is prohibited.

Measurement Location	Units Installed Before 1-1-80 dBA	Units Installed On or After 1-1- 80 dBA
Any point on neighboring property line, 5 feet above grade level, no closer than 3 feet from any wall.	60	55
Center of neighboring patio, 5 feet above grade level, no closer than 3 feet from any wall.	55	50
Outside the neighboring living area window nearest the equipment location, not more	55	50

than 3 feet from the window opening, but at	
least 3 feet from any other surface.	

(Ord. 11778 § 2 (Art. 5 § 501(1)), 1978: Ord. 11773 § 2 (Art. 5 § 501(1)), 1978.)

12.08.540 Street sales.

Offering for sale, selling anything, or advertising by shouting or outcry within any residential or commercial area or noise-sensitive zone of the unincorporated areas of the county is prohibited except by variance issued by the health officer. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food and beverages at licensed sporting events, parades, fairs, circuses, or other similar licensed public-entertainment events.

(Ord. 11778 § 2 (Art 5 § 501(a)), 1978: Ord. 11773 § 2 (Art. 5 § 501(a)), 1978.)

12.08.541 Street sales—Restrictions on sound system speakers.

A person offering for sale, selling or advertising anything edible shall not emit music or other sounds from an external speaker affixed to a motor vehicle between the hours of 8:00 p.m. and 6:00 a.m. within any residential, commercial or noise sensitive-zone of the unincorporated area of the County. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food and beverages, at licensed sporting events, parades, fairs, circuses, or other similar licensed-entertainment events.

(Ord. 2002-0028 § 2, 2002)

12.08.550 Vehicle or motorboat repairs and testing.

Repairing, rebuilding, modifying or testing any motor vehicle, motorcycle or motorboat in such a manner as to cause a noise disturbance across a real-property boundary or within a noisesensitive zone is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(e)), 1978: Ord. 11773 § 2 (Art. 5 § 501(e)), 1978.)

12.08.560 Vibration.

Operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on a public space or public right-of-way is prohibited. The perception threshold shall be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

(Ord. 11778 § 2 (Art. 5 § 501(d)), 1978: Ord. 11773 § 2 (Art. 5 § 501(d)), 1978.)

Part 5 EXEMPTIONS

12.08.570 Activities exempt from chapter restrictions.

The following activities set out in this chapter shall be exempted from the provisions of this chapter:

- A. Emergency Exemption. The emission of sound for the purpose of alerting persons to the existence of an emergency, or the emission of sound in the performance of emergency work;
- B. Warning Devices. Warning devices necessary for the protection of public safety, as for example police, fire and ambulance sirens, and train horns;
- C. Outdoor Activities. Activities conducted on public playgrounds and public or private school grounds, including but not limited to school athletic and school entertainment events;
- D. Exemption from Exterior Noise Standards. The following activities are exclusively regulated by the prohibitions of Part 4 of this chapter:
 - 1. Construction,
 - 2. Stationary nonemergency signaling devices,
 - 3. Emergency signaling devices,
 - 4. Refuse collection vehicles,
 - 5. Residential air-conditioning or refrigeration equipment,
 - 6. Forced-air blowers;
- E. Motion Picture Production and Related Activities;
- F. Railroad Activities. All locomotives and rail cars operated by any railroad which is regulated by the California Public Utilities Commission;
- G. Federal or State Preexempted Activities. Any activity, to the extent regulation thereof has been preempted by state or federal law;
- H. Public Health and Safety Activities. All transportation, flood control, and utility company maintenance and construction operations at any time on public right-of-way, and those situations which may occur on private real property deemed necessary to serve the best interest of the public and to protect the public's health and well being, including but not limited to street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, snow removal, house moving, vacuuming catchbasins, removal of damaged poles and vehicles, repair of water hydrants and mains, gas lines, oil lines, sewers, etc.;
- I. Motor Vehicles on Private Right-of-way and Private Property. Except as provided in Section 12.08.550, all legal vehicles of transportation operating in a legal manner in accordance with local, state and federal vehicle-noise regulations within the public right-of-way or air space, or on private property;
- J. Seismic Surveys Authorized by the State Land Commission;
- K. Agricultural Operations. All mechanical devices, apparatus or equivalent associated with agricultural operations conducted on agricultural property, unless if in the vicinity of residential land uses, in which case a variance permit is required to operate noise-producing devices, with the following stipulations:
 - 1. Operations do not take place between 8:00 p.m. and 6:00 a.m., or
 - 2. Such operations and equipment are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions, or
 - 3. Such operations and equipment are associated with agricultural pest-control through pesticide application, provided the application is made in accordance with permits issued by or regulations enforced by the county agricultural commissioner,

- 4. Such devices utilized for pest control which incorporate stationary or mobile noise sources (electromechanical birdscare devices, etc.) are operated only by permit issued by the health officer. The allowable hours and days for operation of these devices will be specified in the permit,
- 5. All equipment and machinery powered by internal combustion engines shall be equipped with a proper muffler and air-intake silencer in good working order;
- L. Minor Maintenance to Residential Real Property. Noise sources associated with the minor maintenance of residential real property, provided said activities take place as follows:
 - 1. During Pacific Standard Time between the hours of 8:00 a.m. and 6:00 p.m. on any day except Sunday, when such activities may take place between the hours of 9:00 a.m. and 6:00 p.m., and
 - 2. During Daylight Savings Time between the hours of 8:00 a.m. and 7:00 p.m. on any day except Sunday, when such activities may take place between the hours of 9:00 a.m. and 6:00 p.m.;
- M. Operation of Oil and Gas Wells.
 - 1. Normal well servicing, remedial or maintenance work performed within an existing well which does not involve drilling or redrilling and which is restricted to the hours between 7:00 a.m. and 10:00 p.m., and
 - 2. Drilling or redrilling work which is done in full compliance with the conditions of permits issued under Chapter 5, Article 1, of the County Zoning Ordinance, as amended, as set out in Title 22 of this code.

(Ord. 97-0007 § 1, 1997: Ord. 11778 § 2(Art. 6 § 601), 1978: Ord. 11773 § 2 (Art. 6 § 601), 1978.)

Part 6 VARIANCES

12.08.580 Conditions for granting variances—Health officer authority.

- A. Variances from the requirements of this chapter may be granted by the health officer for a period of not to exceed two years, subject to such terms, conditions and requirements as he may deem reasonable. A variance may be granted only if the health officer makes the findings that:
 - 1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with this chapter; or
 - 2. The activity, operation or noise source cannot feasibly be done in a manner that would comply with the provisions of this chapter, and no other reasonable alternative is available to the applicant.
- B. In granting a variance, the health officer may prescribe any conditions or requirements he deems necessary to minimize adverse effects upon the community or the surrounding neighborhood.
- C. In granting variances, the health officer shall consider the magnitude of nuisance caused by the offensive noise, the uses of property within the area of impingement by the noise, operations carried on under existing nonconforming rights or conditional use permits or zone variances, the time factors related to study, design, financing and construction of remedial work, the economic factors related to age and useful life of the equipment, the general public interest, health and welfare, the feasibility of plans submitted for correction, and the effect on the community if the variance was refused.

(Ord. 11778 § 2 (Art. 7 § 701), 1978: Ord. 11773 § 2 (Art. 7 § 701), 1978.)

12.08.590 Application—Contents.

Every applicant for a variance shall file with the health officer a written application on a form prescribed by the health officer. The application shall state the name and address of the applicant, the nature of the noise source involved, and such other information as the health officer may require.

(Ord. 11778 § 2 (Art. 7 § 702), 1978: Ord. 11773 § 2 (Art. 7 § 702), 1978.)

12.08.600 Application—Fee.

Every applicant shall pay a fee of \$25.00 for each application for variance.

(Ord. 11778 § 2 (Art. 7 § 703), 1978: Ord. 11773 § 2 (Art. 7 § 703), 1978.)

12.08.610 Application—Action by health officer.

- A. The health officer shall act, within 30 days, if possible, on an application for a variance, and shall notify the applicant of the action taken, namely, approval, conditional approval, or denial. Before acting on an application for a variance, the health officer may require the applicant to furnish further information. Failure of the applicant to provide such further information may be grounds for denial of the variance.
- B. In the event of denial of an application for a variance, the health officer shall notify the applicant in writing of the reasons therefor. The health officer shall not accept a further application unless the applicant has complied with the objections specified by the health officer as his reasons for denial.

(Ord. 11778 § 2 (Art. 7 § 704), 1978: Ord. 11773 § 2 (Art. 7 § 704), 1978.)

12.08.620 Application—Denial conditions.

The applicant may at his option deem the variance denied if the health officer fails to act on the application within 30 days after filing or within 10 days after applicant furnishes the further information requested by the health officer, whichever is later.

(Ord. 11778 § 2 (Art. 7 § 705), 1978: Ord. 11773 § 2 (Art. 7 § 705), 1978.)

12.08.630 Public hearing—For reconsideration of health officer decision.

Within 10 days after notice by the health officer of the decision on application for variance, any interested party may petition the health officer in writing for a public hearing to reconsider the decision. The health officer shall thereupon appoint a hearing officer to conduct said hearing.

(Ord. 11778 § 2 (Art. 7 § 706), 1978: Ord. 11773 § 2 (Art. 7 § 706), 1978.)

12.08.640 Public hearing—Decision and findings—Appeals.

A. Based upon the evidence presented at the public hearing, the hearing officer may affirm, modify or reverse the previous determination subject to such terms, conditions and requirements as he may deem necessary. The hearing officer shall be guided by the same considerations as set forth in Section 12.08.580.

- B. A decision by the hearing officer to grant a variance may be made only if the hearing officer makes the findings that:
 - 1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with this chapter; or
 - 2. The activity, operation or noise source cannot feasibly be done in a manner that would comply with the provisions of this chapter, and no other reasonable alternative is available to the applicant.
- C. The decision of the hearing officer shall be by written order, and shall be final. Appeals from an adverse decision shall be made to a court of competent jurisdiction.

(Ord. 11778 § 2 (Art. 7 § 707), 1978: Ord. 11773 § 2 (Art. 7 § 707), 1978.)

Part 7 VIOLATIONS AND ENFORCEMENT

12.08.650 Enforcement—Health officer powers and duties.

The health officer shall have primary responsibility for the enforcement of the noise regulations contained in this chapter. The health officer shall make all noise-level measurements required for the enforcement of this chapter. Nothing in this chapter shall prevent the health officer from efforts to obtain voluntary compliance by way of warning, notice, or educational means.

(Ord. 11778 § 2 (Art. 8 § 801), 1978: Ord. 11773 § 2 (Art. 8 § 801), 1978.)

12.08.660 Initial violations.

In the event of an initial violation of the provisions of this chapter a written notice of violation shall be given the alleged violator, specifying the time by which the condition shall be corrected or an application for permit or variance shall be received by the health officer. The health officer shall take no further action in the event the cause of the violation has been removed, the condition abated or fully corrected within the time period specified in the written notice.

(Ord. 11778 § 2 (Art. 8 § 802), 1978: Ord. 11773 § 2 (Art. 8 § 802), 1978.)

12.08.670 Violation—Penalty.

Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than \$500.00 or be imprisoned in the County Jail for a period not exceeding six months or by both such fine and imprisonment. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

(Ord. 11778 § 2 (Art. 8 § 803), 1978: Ord. 11773 § 2 (Art. 8 § 803, 1978.)

12.08.680 Severability.

If any provision, clause, sentence or paragraph of this chapter or the application thereof to any person or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of the provisions of this chapter which can be given effect without the invalid provisions or application and, to this end, the provisions of this chapter are hereby declared to be severable.

(Ord. 11778 § 2 (Art. 8 § 804), 1978: Ord. 11773 § 2 (Art. 8 § 804), 1978.)

APPENDIX 3.3:

CITY OF BALDWIN PARK MUNICIPAL CODE

This page intentionally left blank

15410-02 NA



NOISE CONTROL

§ 130.30 POLICY DECLARATION.

It is declared to be the policy of the city to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power. At certain levels, noises are detrimental to the health and welfare of the citizenry and, in the public interest, such noise levels shall be systematically proscribed.

(Ord. 1114, passed 5-1-96)

§ 130.31 DEFINITIONS.

For the purpose of this subchapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

AMBIENT NOISE. The all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far. For the purpose of this chapter, **AMBIENT NOISE LEVEL** is the level obtained when the noise level is averaged over a period of 15 minutes without inclusion of noise from isolated identifiable sources, at the location and time of day near that at which a comparison is to be made.

A-WEIGHTED SOUND PRESSURE LEVEL. The sound pressure level as measured with a sound meter using the "A"-weighting network. The standard notation is dBA.

COMMERCIAL PURPOSE. Includes the use, operation or maintenance of any sound amplifying equipment for the purpose of advertising any business, or any goods, or any services, or for the purpose of attracting the attention of the public to, or advertising for, or soliciting patronage or customers to or for any performance, show, entertainment, exhibition or event, for the purpose of demonstrating any such sound equipment.

COMMERCIAL ZONE. An area designated as neighborhood commercial (C-1), central business district (CBD), general commercial (C-2), or freeway commercial (FC) on the city zoning map.

CYCLICALLY VARYING NOISE. Steady or non-steady noise which varies in amplitude such that the same sound pressure level is obtained repetitively at reasonably uniform intervals of time. A beat is one class of noise.

DAY. The time period from 7:00 a.m. of one day to 10:00 p.m. of the same day.

DECIBEL (dB). A unit for expressing the ratio between two quantities of acoustical signal powers; the number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base ten of this ratio.

EMERGENCY WORK. Work made necessary to restore property to a safe condition following a public calamity, or work required to protect persons or property from an imminent exposure to danger, or work by private or public utilities when restoring utility service.

IMPULSIVE SOUND. A short-duration sound (such as might be produced by the impact of a drop hammer or a pile driver) with one second or less duration.

INDUSTRIAL ZONE. An area designated as commercial manufacturing (CM), office industrial (OI), industrial commercial (IC) or industrial (I) on the city zoning map.

MOTOR VEHICLES. Includes, but is not limited to, automobiles, trucks, motorcycles, mini bikes and go-carts.

NIGHT. The time period from 10:00 p.m. of one day to 7:00 a.m. of the following day.

NONCOMMERCIAL PURPOSE. The use, operation or maintenance of any sound equipment for other than a commercial use. **NONCOMMERCIAL PURPOSE** means and includes, but is not limited to, philanthropic, political, patriotic and charitable purposes.

PERSON. A person, firm, association, copartnership, joint venture, corporation, or any entity, public or private in nature, excluding the city.

PROPERTY BOUNDARY LINE. An imaginary line at the ground surface, which separates the real property owned by one person from that owned by another person and its vertical extension. This includes multiple-family dwelling units, with the property boundary being the wall separating the adjoining dwelling units.

PURE TONE. A sound wave whose instantaneous sound pressure varies essentially as a simple sinusoidal function of time.

RESIDENTIAL ZONE. An area designated as single family residential zone (R-I), residential garden (RG), or high-density multiple-family residential zone (R-3) on the city zoning map.

SOUND. The sensation perceived by the sense of hearing. For the purpose of this chapter, the terms sound and noise shall be used synonymously.

SOUND AMPLIFYING EQUIPMENT. Any device or equipment which amplifies the volume of any sound.

SOUND LEVEL (NOISE LEVEL). Expressed in decibels (dB) is the sound measured with the "A"-weight scale and with slow response by a sound level meter.

SOUND LEVEL METER. An instrument including a microphone, an amplifier, an output meter, and "A" frequency weighting networks for the measurement of sound levels, which satisfies the pertinent requirements in American Standard Specifications for Sound Level Meters SL4-1971 or the most recent revision thereof.

SOUND PRESSURE LEVEL. Twenty times the logarithm to the base ten of the ratio of the root-mean-square sound pressure to the reference pressure, which is 20 micronewtons per square meter.

SOUND TRUCK. Any motor vehicle or any other vehicle, regardless of motive power, whether in motion or stationary, which carries, is equipped with or which has mounted thereon, or attached thereto, any sound amplifying equipment for commercial, political or charitable purposes.

STEADY NOISE. Noise for which the sound pressure level remains essentially constant during the period of observation. It does not vary more than six dBA when measured with the slow meter characteristic of a sound level meter.

(Ord. 1114, passed 5-1-96; Am. Ord. 1388, passed 9-21-16)

§ 130.32 SOUND LEVEL MEASUREMENT.

Any sound level measurement made pursuant to the provisions of this chapter shall be measured with a sound level meter using the "A" weighting and response as indicated in § 130.31.

(Ord. 1114, passed 5-1-96)

§ 130.33 NOISE MEASUREMENT PROCEDURES.

The following procedures shall be utilized for measuring and evaluating exterior noise in the city unless otherwise specified in this chapter:

(A) Noise measurements shall be conducted any time during the day or night when the suspect noise source is in operation.

(B) The location selected for noise measurement shall be on the noise receptor's property line at a point approximately ten feet from any building, wall or obstruction (trees, bushes, etc.).

(C) No individual other than the operator shall be within ten feet of the sound level meter during the measurement period.

(D) The sound level meter shall be calibrated in accordance with the manufacturer's instructions.

(E) With the noise source in operation, the operator shall record the instantaneous response at 15-second intervals or less, for a period of 15 minutes or greater. Or, for a noise source in operation for less than 15 minutes, the operator shall record the instantaneous response at 15-second intervals or less for the time the noise source is in operation.

(F) The suspect noise source shall only be measured for a violation of this subchapter when it is five dBA or greater than another noise source within the measurement vicinity.

(G) The corrective factors set forth in §130.34(B) shall be applied to the noise standard established for the specific noise zone.

(H) The suspect noise level shall be compared with the standards in §130.34(A). If the noise level generated from the suspect noise source exceeds the standard, the suspect noise source shall be considered to be in violation of this chapter.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.34 AMBIENT BASE NOISE LEVELS.

(A) It is unlawful for any person within the city to make, cause or allow to be produced noise which is received on property occupied by another person within the designated zone, in excess of the following levels, except as expressly provided otherwise herein:

STANDARDS			
	Day	Night	
Zone	7:00 a.m 10:00 p.m.	10:00 p.m 7:00 a.m.	
R-I	55 dBA	45	
RG and R-3	60 dBA	55	
Commercial	65 dBA	60	
Industrial	70 dBA	70	

At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone shall be used.

(B) Corrections to noise limits. The numerical limits given in division (A) of this section shall be adjusted by the following

Noise Condition	Correction (in dB)
1. Repetitive impulsive noise, pure tones and sound with cyclically varying amplitude.	-5
2. Steady whine, screech or hum	-5
3. Noise occurring more than 5 but less than 15 minutes per hour.	+2
4. Noise occurring more than 1 but less than 5 minutes per hour.	+5
5. Noise occurring less than 1 minute per hour.	+7

(Ord. 1114, passed 5-1-96; Am. Ord. 1388, passed 9-21-16) Penalty, see § 10.99

§ 130.35 LOUD, UNNECESSARY AND UNUSUAL NOISE.

Notwithstanding any other provision of this chapter, and in addition thereto, it is unlawful for any person to wilfully make or continue, or cause to be made and continued, any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood, or which causes discomfort or annoyance to residents of the area. The standards which shall be considered in determining whether a violation of the provisions of this section exists may include, but not be limited to, the following:.

- (A) The level of the noise;
- (B) Whether the nature of the noise is usual or unusual;
- (C) The nature and zoning of the area within which the noise emanates;
- (D) The density of the inhabitation of the area within which the noise emanates;
- (E) The time of day or night the noise occurs;
- (F) The duration of the noise;
- (G) Whether the noise is recurrent, intermittent, or constant; and
- (H) Whether the origin of the noise is natural or unnatural.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.36 VIOLATIONS; ADDITIONAL REMEDIES; INJUNCTIONS.

As an additional remedy, the operation or maintenance of any device, instrument, vehicle, or machinery in violation of any provision of this chapter, which operation or maintenance causes discomfort or annoyance to reasonable persons of normal sensitiveness or which endangers the comfort, repose, health, or peace of residents in the area, shall be deemed and is declared to be a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.37 SPECIAL NOISE SOURCES.

(A) Horns and signaling devices. It is unlawful for any person to sound any horn or signaling device on an automobile, motorcycle or other vehicle on any street or public place of the city, except as a danger warning; to create by means of any such signaling device any unreasonably loud or harsh sound; to sound any such device for an unnecessary and unreasonable period of time; to use any signaling device except one operated by hand or electricity; to sound any horn, whistle or other device operated by engine exhaust; and to use any such signaling device when traffic is for any reason held up.

(B) Radios, television sets, and similar devices. It is unlawful for any person within an residential zone of the city to us or operate any radio receiving set, musical instrument, phonograph, television set, or other machine or device for the producing or reproducing of sound (between the hours of 10:00 p.m. of one day and 7:00 a.m., of the following day) in such a manner as to disturb the peace, quiet and comfort of neighboring residents or any reasonable person of normal sensitiveness residing in the area.

(C) Animals and fowl. No person shall keep or maintain, or permit the keeping of, upon any premises owned, occupied, or controlled by such person any animal or fowl otherwise permitted to be kept which, by any sound, cry or behavior, shall cause annoyance or discomfort to a reasonable person of normal sensitiveness in any residential neighborhood.

(D) *Exhausts.* It is unlawful for any person to cause emission into the open air of the exhaust from any motorboat or motor vehicle except through a muffler or other device which will effectively prevent loud or explosive noises therefrom.

(E) Construction of buildings and projects. It is unlawful for any person within a residential zone, or within a radius of 500

feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any piledriver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device (between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the Department of Public Works. No permit shall be required to perform emergency work as defined in § 130.31.

(F) Hawkers and peddlers. It is unlawful for any person within the city to sell anything by outcry within any area of the city zoned for residential uses. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food, and beverages at licensed sporting events, parades, fairs, circuses, and other similar licensed public entertainment events.

(G) *Drums*. It is unlawful for any person to use any drum or other instrument or device of any kind for the purpose of attracting attention by the creation of noise within the city. This section shall not apply to any person who is a participant in a school band or duly licensed parade or who has been otherwise duly authorized to engage in such conduct.

(H) Schools, churches, libraries, hospitals and convalescent homes. It is unlawful for any person to create any noise on any city street, sidewalk, or public place adjacent to any school, institution of learning, church or library while the same is in use or adjacent to any hospital or convalescent home, which noise unreasonably interferes with the workings of such institution or which disturbs or unduly annoys patients in such medical facilities, provided conspicuous signs are placed in such streets, sidewalks or public place indicating the presence of these facilities.

(I) *Machinery, equipment, fans and air conditioning.* It is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device (between the hour of 10:00 p.m. of one day and 7:00 a.m. of the following day), use of which is attended by loud or unusual noises.

- (J) Exceptions. There are exempted from this chapter the following:
 - (1) Lawfully conducted parades;
 - (2) Emergency work as defined in §130.31;
 - (3) Aircraft flight operations;
 - (4) Bells, chimes or carillons while being used in conjunction with religious services;
 - (5) Commercial motor vehicle operations;
 - (6) Emergency energy release devices;
 - (7) Speed or endurance events authorized by the city, involving motor or other vehicles;
 - (8) Surface carriers engaged in commerce by railroad, except for horns and whistles operated within city limits;
 - (9) Systems used to warn community of attack or imminent public danger such as flooding or explosion;
 - (10) Any noise or situation within the scope of Sections 23130 or 23109 of the Vehicle Code of the state.

(Ord. 1114, passed 5-1-96); Am. Ord. 1388, passed 9-21-16) Penalty, see § 10.99

§ 130.38 VEHICLES.

(A) Vehicle repairs. It is unlawful for any person within any residential area of the city to repair, rebuild, or test any motor vehicle (between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance.

(B) *Motor-driven vehicles.* It is unlawful for any person to operate any motor-driven vehicle within the city in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance; provided, however, any such vehicle which is operated upon any public highway, street, or right-of-way shall be excluded from the provisions of this section.

(Ord. 1114, passed 5-1-96) PPenalty, see § 10.99

§ 130.39 SOUND AMPLIFYING EQUIPMENT; APPLICABILITY.

No person shall use sound amplifying equipment within the city, except in compliance with the provisions of this subchapter.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.40 COMMERCIAL ACTIVITIES.

(A) No person shall use any sound amplifying equipment for the purpose of advertising the sale or lease of any goods, wares, merchandise or services, except:

(1) Within an enclosed building in a manner permitted pursuant to §130.42; or

(2) If the sound amplifying equipment is affixed to, or mounted in, a motor vehicle; and the goods, wares or merchandise being advertised for sale are available in the vehicle; and the sound being amplified is a sound, other then the human voice, which is customarily utilized in conjunction with the sale, by vehicle, or such goods, wares and merchandise; provided, that the activities may be conducted only between the hours of 10:00 a.m. and 10:00 p.m. of any day.

(B) Notwithstanding any other provision of this code, a violation of this section shall be deemed to be an infraction.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.41 NONCOMMERCIAL ACTIVITIES.

The use of sound amplification equipment for noncommercial activities shall be permitted, subject to the following:

(A) That such use shall be permitted only when the sound amplifying equipment is mounted in or affixed to, a motor vehicle.

(B) That such use shall be permitted only between the hours of 10:00 a.m. and 10:00 p.m. of any day.

(Ord. 1114, passed 5-1-96)

§ 130.42 USE OF SOUND AMPLIFYING EQUIPMENT; COMPLIANCE WITH LAW.

Nothing contained in this subchapter shall be deemed to prohibit the use of sound amplifying equipment, or other similar equipment, by any person at his place of residence, if the use is in compliance with the provisions of § 130.40.

(Ord. 1114, passed 5-1-96)

§ 130.43 FEES FOR USE OF POLICE PERSONNEL AT LOUD OR UNRULY ASSEMBLAGES.

(A) When any loud or unruly assemblage occurs or is held, and the city's police officers are required to respond to the scene in response to citizen complaints and the first responding police officer at the scene determines that there is a threat to the public peace, health, safety or general welfare, police action may be taken, criminal penalties may be imposed, and city costs collected as provided in this section.

(B) Upon the first responding police officer's determination that the assemblage constitutes a threat to the public peace, health, safety or general welfare, then that first responding police officer, or his or her successor or designee, shall do the following:

(1) Notify the owner of the property and/or the person in charge of the property where the assemblage exists, and/or the person responsible for the assemblage, of the following:

(a) Of the circumstances of the assemblage that constitute a threat to public peace, health, safety or general welfare;

(b) That if such person or persons fail or are unable to mitigate, and the Police Department is required to respond a second time, the circumstances of the assemblage constituting a threat to the public peace, health, safety or general welfare such that the threat no longer exists, the Police Department shall have the right to enter the property and any structures or premise thereon and order all individuals participating in the assemblage to exit the property and disperse from the area;

(c) That such person or persons, or in the case of a minor, the parents and/or guardians of the minor, will be held personally liable for all costs in providing additional police personnel on special security assignment over and above the normal services provided by the Police Department in response to the assemblage, including all costs required to enter the property and disburse individuals participating in the assemblage;

(2) If, after a reasonable time following the second notice given according to the provisions of division (B), the supervisor at the scene determines that the circumstances of the assemblage that constitute a threat to public peace, health, safety or general welfare have not been mitigated, or that additional circumstances have arisen which constitute an additional threat to public peace, health, safety or general welfare, that supervisor may direct any subordinate police officer or officers to do the following:

(a) To notify the owner of the property and/or the person in charge of the property where the assemblage exists, and/or the person responsible for the assemblage, that the assemblage will be terminated for failure to mitigate the circumstances of the assemblage that constitute a threat to public peace, health, safety or general welfare;

(b) To enter the property, and any and all structures and premises thereon, on which the assemblage is occurring and order all individuals participating in the assemblage to exit the property and disperse from the area;

(c) To direct, supervise, assist, escort, and manage individuals exiting the property such that their exit proceeds as quickly and safely as is reasonably possible under the circumstances;

(d) To order all individuals participating in the assemblage to disperse from the area following their exit from the property, and to direct, supervise, assist, and manage said dispersal from the area such that their dispersal proceeds as quickly and safely as is reasonably possible under the circumstances;

(3) If any senior police officer at the scene determines that the assemblage constitutes an imminent threat to the physical safety of individuals or property, the senior police officer shall forgo the provisions for giving notice provided in division (B)(1), and shall immediately take action to prevent the threat pursuant to the provisions of division (B)(2).

(C) All police personnel necessarily utilized to control the threat to the public peace, health, safety or general welfare pursuant to division (B) shall be deemed to be on special security assignment over and above the normal services provided and the owner of the property where the assemblage occurs, and/or the person responsible for the assemblage, shall be personally responsible for the cost of the special security assignment according to the following terms:

(1) Any cost of special security assignment levied pursuant to this subdivision shall be determined upon a cost accounting basis by the city, and shall include the cost damage to city property and/or injury to city personnel, all costs relating to police personnel actions to disperse individuals from the assemblage area pursuant to division (B)(2), and any other costs incurred;

(2) All costs levied by this subdivision shall be due and payable upon presentation, constitute a valid and subsisting debt in favor of the city, and may be collected by the city by any legal means, including filing a cause of action for collection in any court of competent jurisdiction;

(3) Any party aggrieved by a levy of costs pursuant to this section may appeal the matter to the City Council in accordance with the provisions of § 30.04.

(D) Any individual who obstructs police actions taken pursuant to division (B)(2) shall be guilty of a misdemeanor punishable by fine of up to \$1,000, imprisonment for up to six months, or both such fine and imprisonment. This penalty shall be in addition to any other administrative, civil, or criminal penalty which may exist in statute, regulation, ordinance, or other provision of law.

(E) Any individual who fails or refuses to comply with a police officer's order to exit property where the assemblage exists, or who fails or refuses to comply with a police officer's order to disburse from an assemblage area, shall be guilty of a misdemeanor punishable by fine of up to \$1,000, imprisonment for up to six months, or both such fine and imprisonment. This penalty shall be in addition to any other administrative, civil, or criminal penalty which may exist in statute, regulation, ordinance, or other provision of law.

(Ord. 1114, passed 5-1-96; Am. Ord. 1196, passed 11-6-02)

§ 130.44 SOUND AMPLIFICATION SYSTEMS.

(A) No person shall operate, or permit operation of, any sound amplification system mounted or installed in any motor vehicle which can be heard from 50 or more feet, from public or private property, unless that system is being operated to request assistance or warn of a hazardous situation.

(B) This section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications or water utilities. This section does not apply to the sound systems of vehicles used in parades or other special events.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99
APPENDIX 5.1:

STUDY AREA PHOTOS



This page intentionally left blank





15410_L1_A 1.North 34, 7' 4.090000"117, 59' 32.040000"



15410_L1_A 2.South 34, 7' 3.980000"117, 59' 32.120000"



15410_L1_A 3.East 34, 7' 4.240000"117, 59' 32.010000"



15410_L1_A 4.West 34, 7' 4.200000"117, 59' 32.040000"

103 J-109

JN:15410



15410_L2_F 1.North 34, 6' 54.760000"117, 58' 32.190000"



15410_L2_F 2.South 34, 6' 54.720000"117, 58' 32.190000"



15410_L2_F 3.East 34, 6' 54.720000"117, 58' 32.190000"



15410_L2_F 4.West 34, 6' 54.650000"117, 58' 32.270000"

JN:15410



15410_L3_H 1.North 34, 6' 19.690000"117, 58' 9.670000"



15410_L3_H 2.South 34, 6' 19.500000"117, 58' 9.640000"



15410_L3_H 3.East 34, 6' 19.480000"117, 58' 9.610000"



15410_L3_H 4.West 34, 6' 19.440000"117, 58' 9.670000"



15410_L4_L 1.North 34, 6' 7.750000"117, 58' 25.460000"



15410_L4_L 2.South 34, 6' 7.660000"117, 58' 25.460000"



15410_L4_L 3.East 34, 6' 7.680000"117, 58' 25.460000"



15410_L4_L 4.West 34, 6' 7.590000"117, 58' 25.350000"

106



15410_L5_P 1.North 34, 5' 57.600000"117, 58' 40.290000"



15410_L5_P 2.South 34, 5' 57.580000"117, 58' 40.160000"



15410_L5_P 3.East 34, 5' 57.550000"117, 58' 40.160000"



15410_L5_P 4.West 34, 5' 57.560000"117, 58' 40.460000"

This page intentionally left blank



APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS



This page intentionally left blank



						24-Ho	ur Noise Le	evel Measu	urement S	Summary						
Date:	Wednesday	/, April 26, 20	23		Location:	: L1 - Located	northwest of	the site nea	r the resider	nce at 2585	Meter	: Piccolo II			JN:	15410
Project:	Irwindale G	ateway			Source:	: Mountain Av	/e.								Analyst:	Z. Ibrahim
							Hourly L _{eq} (IBA Readings	(unadjusted)							
85.	0															
(8 0. 7 5.																
3 70.	0															
1 00.				8		4 –	ი	<mark>4</mark>	4	<mark>m</mark>	<u>N</u>	<mark>о</mark>	- <mark> 6</mark> -	<u>65.(</u>	<mark>м</mark> н	∞
noH 45.0	25.0	55.2	26.	56.	28	57.	20.	2 <mark></mark>	2 <mark>20.</mark>	56.	27.	57. 56.	55.		56.	- 28
35.	0 + +	1 2	2	4 5	6	7 0	0 1	0 11	12	12 14	15 1	C 17	19 10	20	21 22	
	0	1 2	5	4 5	0	/ 0	9 1	Hour Be	eginning	15 14	12 1	10 17	10 19	20	21 22	25
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	55.8	56.3	55.5	56.2	56.2	56.1	56.0	55.9	55.8	55.6	55.6	55.5	55.8	10.0	65.8
	2	55.8	56.3	55.6	56.2	56.2	56.0	56.0	55.9	55.8	55.8	55.0	55.0	55.8 55.9	10.0	65.9
Night	3	56.0	56.4	55.7	56.3	56.3	56.2	56.2	56.1	56.0	55.8	55.8	55.7	56.0	10.0	66.0
	4	56.2	56.6	55.9	56.5	56.5	56.4	56.4	56.3	56.2	56.1	56.0	56.0	56.2	10.0	66.2
	5	56.8	58.1	56.2	57.9 60.4	57.8	57.5 59.9	57.4	57.0	56.7	56.4	56.4	56.3 56.8	56.8 58.1	10.0	66.8 68.1
	7	57.4	59.7	56.4	59.4	59.2	58.8	58.5	57.8	57.2	56.6	56.5	56.4	57.4	0.0	57.4
	8	56.7	58.2	56.2	58.0	57.8	57.4	57.2	56.8	56.6	56.3	56.3	56.2	56.7	0.0	56.7
	9	56.9	60.4	55.9	60.1	59.9	59.1	58.6	57.0	56.5	56.1	56.0	55.9	56.9	0.0	56.9
	10	59.4 57.1	68.3 60.9	55.9 55.5	67.3 60.6	65.7 60.2	63.1 597	62.4 58.9	59.6 57.5	57.4	56.2 55.8	56.1 55.7	56.0	59.4 57.1	0.0	59.4 57.1
	12	56.4	59.7	55.1	59.4	59.1	58.4	57.9	56.6	56.1	55.4	55.3	55.2	56.4	0.0	56.4
	13	56.3	59.6	54.9	59.3	58.9	58.2	57.7	56.5	55.9	55.2	55.1	54.9	56.3	0.0	56.3
Day	14	56.0	58.3	54.9	58.0	57.7	57.2	56.9	56.4	55.8	55.2	55.1	55.0	56.0	0.0	56.0
	15	57.2	66.2	55.1	65.7	64.4	60.7	58.5	56.4	56.0	55.5	55.4	55.2	57.2	0.0	57.2
	16	57.0	63.6	55.0	62.9	62.3	60.6	59.3	56.8	56.1	55.4	55.2	55.1	57.0	0.0	57.0
	1/	56.5	59.0	55.2	58.8 58.1	58.5	58.U 57.5	57.7	56.7	56.2	55.0	55.5 55.4	55.3	56.5	0.0	56.5
	10	55.9	57.2	55.2	57.0	56.8	56.6	56.4	56.1	55.8	55.4	55.4	55.3	55.9	5.0	60.9
	20	65.0	79.3	55.6	78.5	77.0	72.6	67.3	56.5	56.1	55.8	55.7	55.6	65.0	5.0	70.0
	21	56.3	57.2	55.8	57.1	57.0	56.8	56.7	56.4	56.2	56.0	55.9	55.8	56.3	5.0	61.3
Night	22	56.1	56.7	55.7	56.6	56.5	56.4	56.4	56.2	56.1	55.9	55.8	55.8	56.1	10.0	66.1
- - - - - - - - - -	23	58.8	64.0	55.8	63.9	63.7	63.2	62.8	60.1	56.7	55.9	55.9	55.8	58.8	10.0	68.8
Timejrame	Hour	L _{eq}	L max	L _{min} 5/1 9	L1%	56 X	L5%	L8%	L25%	55 Q	L90%	L95%	199%	24-Hour	Leq (Davtime	UBA) Niahttime
Day	Max	65.0	79.3	56.4	78.5	77.0	72.6	67.3	59.6	57.4	56.6	56.5	56.4	CNEL	(7am- <u>10pm</u>)	(10pm-7am)
Energy	Average	58.2	Ave	rage:	61.3	60.8	59.6	58.7	56.9	56.3	55.7	55.6	55.5			
Night	Min	55.8	56.3	55.5	56.2	56.1	56.0	56.0	55.9	55.8	55.6	55.6	55.5	64.1	58.2	56.8
Energy	Max	58.8	64.0	56.7	63.9	63.7	63.2	62.8	60.1 56.0	57.8	57.0	56.9	56.8			
Linergy	Average	50.0	AVE	iuge.	57.0	51.1	57.5	57.4	50.5	50.5	50.0	50.0	33.9			



						24-Ho	our Noise Le	evel Measu	urement S	Summary						
Date: Project:	Wednesday Irwindale G	/, April 26, 20 iateway)23		Location: Source:	L2 - Located Arrow Hwy.	north of the s	site near the	sports com	olex at 1417	Meter:	Piccolo II			JN: Analyst:	15410 Z. Ibrahim
,		,				•	Hourly L _{ea} d	BA Readings	(unadjusted)						,	
05	0															
ap 75. 70.						7.7 5.8		v – v –	- <u>.</u>	N - N -	- <mark>0</mark>	4 <u>w</u>				
65. 60.	0 - : -	- œ - m	8	74			1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 <mark>4</mark> 4	2 <mark>.7</mark>	<mark>73.</mark>	<mark>; 3</mark>	<mark>. 74</mark>	72.:7		9.0 9.0	0.
<u></u>	فن 0 0	64	99													<u>6</u>
P 45. 40.	0															
35.	0 + +															
	0	1 2	3	4 5	6	7 8	9 1	.0 11 Hour Be	12 ginning	13 14	15 1	.6 17	18 19	20	21 22	23
Timeframe	Hour	1	,	1.	11%	12%	15%	18%	125%	150%	190%	105%	100%	1	٨di	Adi I
Timejrume	0	67.7	78.9	58.5	78.4	77.5	74.3	71.9	66.4	63.0	59.6	59.1	58.6	67.7	10.0	77.7
	1	64.8	73.9	57.9	73.5	72.9	70.6	68.9	64.6	62.3	59.1	58.6	58.0	64.8	10.0	74.8
	2	66.3	76.1	58.6	75.7	75.1	72.8	70.5	65.6	62.9	59.8	59.3	58.7	66.3	10.0	76.3
Night	3	66.8	75.8	60.0	75.5	74.8	72.4	70.8	66.7	64.2	61.2	60.6	60.1	66.8	10.0	76.8
	4	70.4	78.9 84.5	65.b	/8.6 83.8	82.8	75.9 80.0	74.6	70.9	67.7 72.1	68 1	64.1	63.7	70.4 74.7	10.0	80.4 84.7
	6	77.0	82.8	69.9	82.5	82.0	80.8	80.2	78.3	76.1	71.7	70.8	70.1	77.0	10.0	87.0
	7	77.7	85.5	69.9	85.2	84.5	82.1	80.6	78.5	76.7	72.0	71.0	70.1	77.7	0.0	77.7
	8	76.8	84.8	67.7	84.3	83.7	81.7	80.4	77.5	75.3	69.9	68.8	67.8	76.8	0.0	76.8
	9 10	75.3 74.5	82.4 82.1	65.0 65.7	82.1 81.8	81.6 81.3	80.1	79.0 78.5	76.4 75.4	/3./	68.6 67.6	67.1	65.2	75.3 74.5	0.0	75.3 74.5
	10	74.2	82.0	65.1	81.6	81.0	79.3	78.3	75.1	72.5	66.8	65.9	65.2	74.2	0.0	74.2
	12	75.0	86.2	65.2	85.0	83.6	80.3	78.7	74.9	72.1	67.1	66.1	65.3	75.0	0.0	75.0
	13	73.7	81.6	64.3	81.4	80.8	78.9	77.7	74.6	71.7	66.3	65.3	64.4	73.7	0.0	73.7
Day	14	74.2	82.7	64.8 65.7	82.3	81.6 80.6	79.3	77.8	74.8	72.3	67.0 67.6	65.9 66 7	65.0 65.9	74.2	0.0	74.2
	15	73.4	80.3	66.0	80.0	79.4	77.5	76.4	74.3	72.2	68.1	67.0	66.1	73.4	0.0	73.4
	17	74.3	83.3	66.0	83.1	82.4	79.9	77.6	74.3	72.2	68.1	67.1	66.2	74.3	0.0	74.3
	18	72.2	78.9	64.7	78.6	77.9	76.3	75.5	73.2	71.1	66.8	65.9	64.9	72.2	0.0	72.2
	19	71.4	79.5	63.9	78.9	78.0	76.1	74.8	72.3	69.8	65.2	64.6	64.0	71.4	5.0	76.4
	20	69.8 69.6	76.9	62.3	76.5	76.0	75.0	74.0	70.7	67.4 67.1	63.5	62.9	62.6	69.8 69.6	5.0 5.0	74.8
Night	22	69.0	76.9	61.9	76.7	76.1	74.4	73.3	69.7	66.4	62.9	62.5	62.0	69.0	10.0	79.0
Night	23	67.0	75.3	60.3	75.0	74.5	72.9	71.7	67.2	64.2	61.3	60.9	60.4	67.0	10.0	77.0
Timeframe	Hour	L _{eq}		L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	62 Q	L99%	24-Hour	Leq (Davtime	aba) Nighttime
Day	Max	77.7	86.2	69.9	85.2	84.5	82.1	80.6	78.5	76.7	72.0	71.0	70.1	CNEL	(7am-10pm)	(10pm-7am)
Energy	Average	74.2	Ave	erage:	81.3	80.6	78.6	77.4	74.5	71.9	67.2	66.3	65.5			
Night	Min	64.8	73.9	57.9	73.5	72.9	70.6	68.9	64.6	62.3	59.1	58.6	58.0	78.5	74.2	71.3
Energy	Max Average	77.0	84.5 Ave	69.9 erage:	83.8	82.8	80.8	80.2	78.3 69.4	/6.1	63.1	70.8	/0.1			
				0						30.0						



	24-Hour Noise Level Measurement Summary Date: Wednesday, April 26, 2023 Location: L3 - Located southeast of the site near the residence at 5114 Meter: Piccolo II JN: 15410															
Date:	Wednesday	/, April 26, 20)23		Location:	L3 - Located	southeast of	the site near	the residen	ce at 5114	Meter:	Piccolo II			JN:	15410
Project:	Irwindale G	ateway			Source:	Stewart Ave.									Analyst:	Z. Ibrahim
							Hourly L _{eq} d	IBA Readings	(unadjusted))						
85.	0															
a 80. 75.	0															
9 و 10. 65.	0							- m								
ـــــــــــــــــــــــــــــــــــــ	0 - 10			67.1	67.0	56.6		67.5 67.5	3.9 3.9	3.7 55.8	3.7	2.0 67.0	<mark>55.8</mark>	<mark></mark>	<mark>ᅇ</mark> ㅋ_ ㅋ	
n 50. 0 45.	0	5.1 4.3	4.				6		9	9 <u> </u>	9 1 1		9	<mark>9</mark>	<mark>61</mark>	0
± 40. 35.	0	O	<u> </u>				+							+-		
	0	1 2	3	4 5	6	7 8	91	.0 11	12 :	13 14	15 1	.6 17	18 19	20	21 22	23
								Hour Be	eginning							
Timeframe	Hour			L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
		67.4 55.1	67.1	47.3	66.8	79.8 66.1	75.8 62.7	69.7 59.9	53.9	50.5 47.8	48.0	47.7	47.5	67.4 55.1	10.0	77.4 65.1
	2	54.3	66.5	44.7	66.2	65.5	62.4	59.4	48.8	46.2	45.2	45.0	44.8	54.3	10.0	64.3
Night	3	53.4	65.1	44.5	64.9	64.4	61.4	58.5	49.0	46.0	44.9	44.8	44.6	53.4	10.0	63.4
	4	67.1	76.0	58.2	75.6	75.2	74.0	72.7	67.1	62.2	58.8	58.5	58.4	67.1	10.0	77.1
	5	62.3	71.8	50.6	71.5	71.1	69.4 73.4	68.0 71.8	67.5	56.4 62.8	51.6	51.2	50.7	62.3	10.0	72.3
	7	66.0	74.8	51.7	74.4	74.0	72.5	71.1	66.7	62.0	53.6	52.7	51.9	66.0	0.0	66.0
	8	66.6	77.1	52.9	76.8	75.9	73.3	71.1	66.4	61.9	55.7	54.6	53.2	66.6	0.0	66.6
	9	62.1	71.5	49.8	71.1	70.5	68.5	67.3	62.5	57.4	51.4	50.6	49.9	62.1	0.0	62.1
	10	63.5	75.0 81.2	49.3 49.7	74.5 80.7	73.6 79.8	70.8 75.3	68.5 71.2	63.5	56.9 57.2	50.6	50.1 50.3	49.5 49.8	67.8	0.0	63.5 67.8
	12	63.9	74.3	50.1	73.8	73.0	71.1	69.9	63.4	56.5	51.1	50.6	50.2	63.9	0.0	63.9
	13	63.7	74.2	49.6	73.7	73.0	70.5	69.1	63.4	57.4	50.9	50.2	49.7	63.7	0.0	63.7
Day	14	65.8	76.7	51.3	76.3	75.5	72.7	70.3	65.6	60.4	53.1	52.3	51.6	65.8	0.0	65.8
	15	63.7 65.2	/3./	49.0	73.2	72.4	70.1	68.8 69.7	64.3 66.0	57.9	50.3	49.7 51.2	49.1	63.7	0.0	63.7 65.2
	10	67.0	77.4	54.4	76.9	76.2	73.7	71.4	66.9	62.7	56.7	55.6	54.6	67.0	0.0	67.0
	18	65.8	75.6	51.7	75.0	74.3	72.2	70.8	66.0	61.0	53.9	53.1	52.1	65.8	0.0	65.8
	19	64.1	74.2	49.6	73.5	72.7	70.7	69.6	64.7	58.3	50.9	50.1	49.7	64.1	5.0	69.1
	20	62.6	72.6	50.8	72.2	71.4	69.2	67.8	62.9	57.4	51.7	51.2	50.9	62.6	5.0	67.6
	21	61.8	72.4	49.2	72.0	71.3	69.0	66.7	59.2	53.1	49.8	49.6	49.4	61.8	10.0	71.1
Night	23	62.8	75.5	48.8	75.2	74.6	70.4	67.1	58.7	53.1	49.3	49.1	48.8	62.8	10.0	72.8
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour	Leq	dBA)
Day	Min May	61.8 67.8	71.5	49.0 54.4	71.1	70.5	68.5 75.3	67.2 71 /	61.0 66.9	55.8 62.7	50.3 56.7	49.7 55.6	49.1 54.6	CNEL	Daytime	Nighttime
Energy	Average	65.0	Ave	erage:	74.6	73.8	73.3	69.6	64.4	58.9	52.2	51.5	50.9		(Yum-10pm)	(20011-70111)
Night	Min	53.4	65.1	44.5	64.9	64.4	61.4	58.5	48.8	46.0	44.9	44.8	44.6	70.6	65.0	63.7
-	Max	67.4	82.3	58.2	81.5	79.8	75.8	72.7	67.5	62.8	58.8	58.5	58.4			-
Energy	Average	63.7	Ave	erage:	/2.2	/1.5	68.7	66.0	57.4	53.1	50.1	49.8	49.5			



						24-Ho	ur Noise Le	evel Meas	urement S	ummary						
Date:	Wednesday	/, April 26, 20)23		Location:	L4 - Located	south of the	site near the	residence at	t 13803	Meter:	Piccolo II			JN:	15410
Project:	Irwindale G	ateway			Source:	Chilcot St.									Analyst:	Z. Ibrahim
							Hourly L _{eq} (dBA Readings	(unadjusted)							
85.	0															
a 80.	0															
ອ _{65.}	0												- <mark>r.</mark>			
۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔۔ 60.	0 2 2 2 0					<mark>ю</mark> — п					- <mark>10</mark>	<mark>й — пі</mark> —	- <mark></mark>	<u> </u>		
no 50.	0 6 0 0	0.0		56.5		2960	56.9	57.2	2 <u>2.0</u>	57.7	28.1	8 8 4	9	<mark>9</mark>	5.3 5.3	1.8
± 40. 35.	0	- 4 - 4	4	- <u>ii</u> i											<u>и</u> и	- ù
	0	1 2	3	4 5	6	7 8	9 1	10 11	12 1	L3 14	15 1	6 17	18 19	20	21 22	23
								Hour Be	eginning							
Timeframe	Hour	L _{eq}		L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
		63.2 45.9	75.3 52.9	43.9	74.9 52.5	74.6 52.0	72.2 50.7	68.6 49.5	55.9 45.8	47.9	44.7	44.4	44.0	63.2 45.9	10.0	73.2
	2	49.4	60.5	43.0	60.1	59.4	55.9	53.6	47.0	45.3	43.7	43.4	43.1	49.4	10.0	59.4
Night	3	48.6	59.6	44.3	58.7	57.5	52.4	50.6	47.9	46.6	45.0	44.7	44.4	48.6	10.0	58.6
	4	51.2	60.7	47.3	60.2	59.3 64.4	56.5 61.3	54.6	50.3	49.1 54.7	47.9 53.6	47.7 53.3	47.4 53.0	51.2	10.0	61.2
	6	58.4	68.1	53.7	67.6	66.6	63.6	61.4	57.5	56.3	54.7	54.3	53.9	58.4	10.0	68.4
	7	60.8	70.8	49.8	70.3	69.5	67.3	65.4	61.2	56.7	51.9	51.2	50.3	60.8	0.0	60.8
	8 9	59.5	67.2	40.7	66.8	66.0	67.2	61.4	55.8	53.3	47.9	47.4	48.9	59.5	0.0	59.5
	10	56.2	67.1	47.7	66.6	65.9	63.3	60.7	54.3	52.2	49.2	48.7	47.9	56.2	0.0	56.2
	11	57.2	67.8	48.7	67.2	66.3	63.2	60.6	56.4	54.6	50.4	49.9	49.2	57.2	0.0	57.2
	12	57.0	65.9	48.6	65.4	67.0	63.5	60.2	54.9 54.5	53.0	48.7	49.6	48.9	57.0	0.0	57.0
Day	14	57.4	69.7	48.1	69.2	68.3	64.7	61.7	54.2	51.5	49.0	48.6	48.3	57.4	0.0	57.4
	15	58.5	69.4	49.9	69.0	68.1	64.9	62.4	57.2	54.6	51.7	51.1	50.4	58.5	0.0	58.5
	10	60.5	71.0	52.0	69.6	69.7 68.6	66.2	64.7	60.4	56.0	52.5	53.0	51.3	60.5	0.0	60.5
	18	71.7	84.8	53.1	84.7	83.9	80.4	76.0	61.9	58.8	55.0	54.4	53.5	71.7	0.0	71.7
	19	64.1	73.4	58.6	72.7	72.0	70.3	68.5	63.4	61.3	59.2	58.9	58.7	64.1	5.0	69.1
	20	55.2	66.0	49.1	65.5	64.8	62.0	59.7	54.4	51.0	49.7	49.5	49.2	55.2	5.0	60.2
Night	22	55.3	66.5	47.8	66.0	65.5	63.4	60.3	51.5	49.5	48.4	48.2	47.9	55.3	10.0	65.3
Timeframe	23 Hour	51.8	61.4	47.1	60.9	60.2	57.3	55.2	51.5	49.0	47.7	47.4	47.2	51.8	10.0	61.8 (dBA)
Day	Min	5 <u>5.2</u>	- max 65.9	- min 46.7	65.4	64.7	62.0	59.7	52.9	51.0	47.9	47.4	46.9	24-Hour	Daytime	Nighttime
Day	Max	71.7	84.8	58.6	84.7	83.9	80.4	76.0	63.4	61.3	59.2	58.9	58.7	CNEL	(7am-10pm)	(10pm-7am)
Energy	Average	62.6 45.9	52.9	rage: 42.0	70.2	69.3 52.0	<u>66.4</u> 50.7	63.8 49.5	57.2 45.8	54.4 44.4	<u>51.2</u> 42.7	50.7 42.4	<u>50.2</u> 42.1	65 1	62 6	56 5
Night	Max	63.2	75.3	53.7	74.9	74.6	72.2	68.6	57.5	56.3	54.7	54.3	53.9		02.0	50.5
Energy	Average	56.5	Ave	rage:	62.9	62.2	59.3	57.0	51.5	49.2	47.6	47.3	47.0			



						24-Ho	ur Noise Le	evel Meası	urement S	ummary						
Date:	Wednesday	, April 26, 20)23		Location:	L4 - Located	south of the	site near the	residence at	t 13602 Olive	Meter:	Piccolo II			JN:	15410
Project:	Irwindale G	ateway			Source:	St.									Analyst:	Z. Ibrahim
							Hourly L _{eq} o	dBA Readings	(unadjusted)							
85.	0															
8 0. 6 <u>75</u> .																
b 70.	0															
60. ت 60. <u>ح</u> 55.	0			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		3.7	- <u> </u>	3.4	<u> </u>	<mark></mark>	2.4	<mark>_</mark>	2.5 2.3	<mark></mark>	5.4	
n 50. o 45.	0 - 6.0	61	55.6	58.	23		<mark></mark>	9 <mark> 9</mark>	<u> </u>			0	- <u> </u>	+ $+$	55.7	55.8
→ 40. 35.	0 0	Ľ														
	0	1 2	3	4 5	6	7 8	9 1	LO 11	12 1	L3 14	15 10	5 17	18 19	20	21 22	23
_: c						100/		Hour Be	eginning		1000/	1050/	1000/			A .1* 1
Timeframe	Hour	L _{eq}	58 5	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	45.0	L _{eq}	Adj.	60.9
	1	61.2	75.3	43.7	74.8	73.7	69.4	63.7	51.2	46.5	44.3	44.0	43.8	61.2	10.0	71.2
	2	54.2	65.3	43.9	65.1	64.6	61.8	59.3	52.4	47.5	44.6	44.3	44.0	54.2	10.0	64.2
Night	3	55.6	67.5	45.0	67.1	65.8	63.3	61.1	53.8	48.8	45.7	45.3	45.1	55.6	10.0	65.6
	4 5	54.9	68.0	40.9 51.2	67.8	67.5	65.4	63.0	57.0	53.8	51.8	47.2 51.5	51.3	54.9	10.0	68.2
	6	59.7	69.1	53.2	68.6	68.0	66.1	63.8	59.5	56.6	53.9	53.6	53.3	59.7	10.0	69.7
	7	64.2	75.8	51.8	75.5	74.9	71.9	68.9	61.5	57.2	52.8	52.3	51.9	64.2	0.0	64.2
	8	63.7 61.0	73.7	53.7	73.3 71.6	72.9 70.7	70.7 67.5	65.8	62.7 59.5	59.4 56.6	55.2 53.4	54.5 52.9	53.8 52.5	63.7 61.0	0.0	63.7 61.0
	10	63.4	76.7	49.9	76.2	75.1	71.4	67.2	57.7	53.9	50.7	50.3	50.0	63.4	0.0	63.4
	11	60.8	71.1	51.3	70.8	70.3	68.5	66.0	59.1	56.2	52.3	51.9	51.4	60.8	0.0	60.8
	12	62.0	72.9	52.0	72.1	71.1	68.5	66.6	61.2	57.8	53.5	52.9	52.2	62.0	0.0	62.0
Dav	13	62.1	70.9	51.2	70.5	70.0	69.5	67.9	59.9 60.7	56.3	52.5	51.9	51.3	62.1	0.0	62.1
,	15	62.4	74.1	50.6	73.7	73.1	69.8	68.4	59.2	54.7	51.2	50.9	50.7	62.4	0.0	62.4
	16	64.4	75.7	51.5	75.4	75.0	73.1	70.4	60.7	55.8	52.3	51.9	51.6	64.4	0.0	64.4
	17	61.9	72.4	52.2	72.0	71.3	69.0	66.7	60.8	56.9	53.1	52.7	52.3	61.9	0.0	61.9
	18 19	62.5	72.2	52.9 53.4	71.8 71.6	71.4	69.6 69.3	66.3	61.2	58.3 59.4	54.5	53.8 54.2	53.1	62.5	0.0	62.5
	20	67.6	75.0	53.8	74.8	74.5	73.5	72.4	69.0	64.6	54.8	54.4	54.0	67.6	5.0	72.6
	21	62.4	75.0	52.5	74.4	73.4	70.4	67.6	56.8	54.5	52.9	52.8	52.6	62.4	5.0	67.4
Night	22	55.7	63.9	50.7	63.6	63.1	61.6	59.9	55.5	53.1	51.1	50.9	50.8	55.7	10.0	65.7
Timeframe	23 Hour	L og	64.9 L may	50.1 L min	64.7 L1%	64.3 L2%	62.2 L5%	60.9 L8%	L25%	52.6 L50%	50.5 L90%	50.3 L95%	50.1 L99%	55.8	Lea	(dBA)
Dav	Min	60.8	70.9	49.9	70.5	70.0	67.5	65.8	56.8	53.9	50.7	50.3	50.0	24-Hour	Daytime	Nighttime
Day	Max	67.6	76.7	53.8	76.2	75.1	73.5	72.4	69.0	64.6	55.2	54.5	54.0	CNEL	(7am-10pm)	(10pm-7am)
Energy	Average	63.2	Ave	rage:	73.0	72.4	70.1	67.8	60.8	57.2	53.1	52.6	52.2	66 1	62.2	57 2
Night	Max	61.2	75.3	53.2	74.8	73.7	69.4	63.8	59.5	56.6	53.9	53.6	53.3	00.1	03.2	57.2
Energy	Average	57.2	Ave	rage:	66.0	65.4	63.3	60.9	54.4	50.6	48.3	48.1	47.8			



This page intentionally left blank



APPENDIX 7.1:

OPTION 1 - OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS



This page intentionally left blank



	FHWA-R	D-77-108 HIGH	WAY NO	ISE P	REDIC	TION MO	ODEL (9/12/2	:021)		
Scenar	io: E					Project I	Vame:	Irwind	ale Gatewa	ay SP	
Road Nan Road Segme	ne: Avenida Ba nt: n/o Arrow I	arbosa Highway				Job Nu	imber:	15410			
SITE	SPECIFIC IN	NPUT DATA				N	OISE I	NODE	EL INPUT	s	
Highway Data				Sit	te Con	ditions (Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	10,210 vehicl	es					Autos	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 /	Axles)	: 15		
Peak H	lour Volume:	938 vehicle	s		He	avy Truci	ks (3+ /	Axles)	: 15		
Ve	hicle Speed:	40 mph		Ve	hicle I	Aix					-
Near/Far La	ne Distance:	48 feet			Vehi	cleType		Day	Evening	Night	t Daily
Site Data						A	utos:	72.49	6 9.2%	18.4	% 85.65%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks:	77.7%	6 4.8%	17.5	% 9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	ucks:	84.3%	6 2.7%	13.0	% 5.23%
Centerline Di	st. to Barrier:	40.0 feet		No	oise So	urce Ele	vation	s (in f	eet)		
Centerline Dist.	to Observer:	40.0 feet				Autos.	: 0.	000			
Barrier Distance	to Observer:			Mediur	n Trucks	2.	297				
Observer Height	(Above Pad):			Heav	y Trucks	: 8.	004	Grade Ad	ljustme	nt: 0.0	
P	ad Elevation:	0.0 feet		1.			Distant	//	64		
Ro	ad Elevation:	0.0 feet		La	ne Equ	livalent	Distant	ce (In	reet)		
	Road Grade:	0.0%				Autos.	. 32.	388			
	Left View:	-90.0 degre	es 		Mealur	n Trucks.	: 32.	114			
	Right view:	90.0 degre	25		neav	y TTUCKS.	. 32.	141			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	nel	Barrier At	en E	lerm Atten
Autos:	66.51	-2.28		2.73		-1.20		-4.59	0.	000	0.000
Medium Trucks:	77.72	-12.00		2.78		-1.20		-4.87	0.	000	0.000
Heavy Trucks:	82.99	-14.42		2.78		-1.20		-5.56	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenua	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ Le	q Eve	ning	Leq N	light		Ldn		CNEL
Autos:	65	5.8	63.9		61.0		59.2	2	66.	6	66.9
Medium Trucks:	67	7.3	65.8		59.7		60.6	6	68.	0	68.1
Heavy Trucks:	Heavy Trucks: 70.1 69.0				60.0		62.1		70.	1	70.2
Vehicle Noise:	72	71.5		65.0		65.6	5	73.	2	73.4	
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 dB	IA	65 d	BA		60 dBA		55 dBA
		-	Ldn:		66		141		304	ł	656
		C	NEL:		67		145		313	3	673

			_					_			
Scenario	: EP					Project	Name: I	rwinda	ale Gatewa	y SP	
Road Name	e: Avenida Ba	rbosa				Job N	umber: *	5410			
Road Segmen	t: n/o Arrow H	lighway									
SITE S	PECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	5	
Highway Data				1	Site Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily 7	raffic (Adt):	10,405 vehicle	es				,	Autos:	15		
Peak Hour F	Percentage:	9.19%			Med	dium Tru	icks (2 A	xles):	15		
Peak Ho	our Volume:	956 vehicle	s		Hea	avy Truc	:ks (3+ A	xles):	15		
Veh	icle Speed:	40 mph		1	Vehicle N	lix					
Near/Far Lan	e Distance:	48 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.50%
Bari	rier Heiaht:	0.0 feet			Me	dium Tr	ucks:	77.7%	4.8%	17.5%	9.08%
Barrier Type (0-Wa	all, 1-Berm):	0.0			H	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.42%
Centerline Dis	t. to Barrier:	40.0 feet		-	Noico So	urco El	ovation	(in f	nof)		
Centerline Dist. to	o Observer:	40.0 feet		Ľ.	10/30 00	Autos	. 00	000			
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Trucks	. 0.0	997			
Observer Height (A	Above Pad):	5.0 feet			Heav	v Trucks	. 8.0	004	Grade Ad	iustment	: 0.0
Pa	d Elevation:	0.0 feet				,					
Roa	d Elevation:	0.0 feet		4	Lane Equ	iivalent	Distanc	e (in	feet)		
R	oad Grade:	0.0%				Autos	s: 32.0	388			
	Left View:	-90.0 degre	es		Mediun	n Trucks	32.	114			
	Right View:	90.0 degre	es		Heav	y Trucks	5. 32.	141			
FHWA Noise Mode	Calculations	5									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	-2.20		2.73	3	-1.20		-4.59	0.0	000	0.00
Medium Trucks:	77.72	-11.94		2.7	8	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-14.18		2.7	8	-1.20		-5.56	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	1	Leq E	vening	Leq	Night		Ldn	С	NEL
Autos:	65	.8	64.0		61.0		59.3		66.6	6	67.
Medium Trucks:	67	.4	65.8		59.7		60.6		68.0)	68.
Heavy Trucks:	Heavy Trucks: 70.4				60.3		62.4		70.3	3	70.
Vehicle Noise:	73	.1	71.7		65.2		65.7		73.4	ļ	73.
Centerline Distance	e to Noise Co	ntour (in feet)								
				70 c	dBA	65 (dBA	e	60 dBA	55	dBA
			I do:	-		-	4.45		240	-	674
			67		145		312		0/1		

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION MC	DEL	(9/12/20	021)		
Scena Road Nar Road Segme	rio: 2028 NP ne: Avenida Ba ent: n/o Arrow H	rbosa lighway				Project I Job Nu	lame: mber:	Irwinda 15410	ile Gatewa	y SP	
SITE	SPECIFIC IN	PUT DATA				N	DISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions (l	Hard =	: 10, Sc	ft = 15)		
Average Daily	Traffic (Adt):	17,107 vehicle	s					Autos:	15		
Peak Hou	Percentage:	9.19%			Me	dium True	cks (2	Axles):	15		
Peak I	lour Volume:	1,572 vehicles	5		He	avy Truck	(S (3+	Axles):	15		
V	ehicle Speed:	40 mph		v	ehicle l	Mix					
Near/Far La	ane Distance:	48 feet		F	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			М	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	40.0 feet		٨	loise So	ource Ele	vatior	ns (in fe	et)		
Centerline Dist	to Observer:	40.0 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 Ad	justment.	0.0
F	ad Elevation:	0.0 feet			ono Fa	uivalant	Diator	oo (in i	(a a f)		
R	ad Elevation:	0.0 feet		-	ane Eq	Autoo	JISIAI	200	eelj		
	Road Grade:	0.0%			Madiu	Autos.	32	.300			
	Right View:	-90.0 degree 90.0 degree	es es		Heav	y Trucks	32	.114 .141			
FHWA Noise Moo	el Calculation	-									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos.	66.51	-0.03		2.73	3	-1.20		-4.59	0.0	000	0.000
Medium Trucks.	77.72	-9.76		2.78	3	-1.20		-4.87	0.0	000	0.000
Heavy Trucks	82.99	-12.18		2.78	3	-1.20		-5.56	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atteni	uation)						
VehicleType	Leq Peak Hou	r Leq Day		Leq Ev	ening	Leq N	light		Ldn	CI	VEL
Autos.	68	.0	66.2		63.2		61.	5	68.	В	69.1
Medium Trucks.	69	.5	68.0		61.9		62.	8	70.3	2	70.4
Heavy Trucks.	72	.4	71.2		62.3		64.	4	72.3	3	72.4
Vehicle Noise	75	.1	73.8		67.3		67.	8	75.	5	75.6
Centerline Distan	ce to Noise Co	ntour (in feet)								-	
			L	70 d	BA	65 d	BA	6	0 dBA	55	dBA
			Ldn:		92		19	9	429		925
		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			05		201		441		950

	FHWA-R	D-77-108 HIGHW	AY NOIS			DEL (9/12	(2021)		
Scenar	rio: 2028 WP				Project N	ame: Irwin	dale Gateway	/ SP	
Road Nan	ne: Avenida Ba	arbosa			Job Nur	nber: 1541	0		
Road Segme	nt: n/o Arrow I	Highway							
SITE	SPECIFIC I	NPUT DATA			NO	ISE MOD	EL INPUTS	6	
Highway Data				Site Con	nditions (H	lard = 10, 3	Soft = 15)		
Average Daily	Traffic (Adt):	17,302 vehicles				Auto	s: 15		
Peak Hour	Percentage:	9.19%		Me	edium Truc	ks (2 Axles	s): 15		
Peak I	lour Volume:	1,590 vehicles		He	eavy Truck	s (3+ Axles	s): 15		
Ve	ehicle Speed:	40 mph		Vehicle	Mix				
Near/Far La	ane Distance:	48 feet		Veh	icleType	Dav	Evenina	Night Da	ailv
Site Data					Au	tos: 72.4	% 9.2%	18.4% 85.	56%
Ba	rrier Height	0.0 feet		м	edium Tru	cks: 77.7	% 4.8%	17.5% 9.	10%
Barrier Type (0-V	Vall, 1-Berm):	0.0			Heavy Tru	cks: 84.3	% 2.7%	13.0% 5.	35%
Centerline D	ist. to Barrier:	40.0 feet		Noise S	ource Elev	ations (in	foot)		
Centerline Dist.	to Observer:	40.0 feet		110130 00	Autos	0.000	1001/		
Barrier Distance	to Observer:	0.0 feet		Modiu	m Trucks:	2 207			
Observer Height	(Above Pad):	5.0 feet		Hear	W Trucks:	9.004	Grade Adi	ustment [,] 0.0	
P	ad Elevation:	0.0 feet		//ca	vy mucks.	0.004	0/000 / 10/		
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent D)istance (ii	n feet)		
	Road Grade:	0.0%			Autos:	32.388			
	Left View:	-90.0 degrees		Mediu	m Trucks:	32.114			
	Right View:	90.0 degrees		Hear	vy Trucks:	32.141			
FHWA Noise Mod	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	en Berm At	ten
Autos:	66.51	0.01	2	.73	-1.20	-4.5	9 0.0	00 0	0.000
Medium Trucks:	77.72	-9.72	2	.78	-1.20	-4.8	7 0.0	00 0	0.000
Heavy Trucks:	82.99	-12.03	2	.78	-1.20	-5.5	6 0.0	00 0	.000
Unmitigated Nois	e Levels (with	out Topo and b	arrier atte	enuation)					
VehicleType	Leq Peak Ho	ur Leq Day	Leq	Evening	Leq Ni	ight	Ldn	CNEL	
Autos:	68	3.0 66	5.2	63.3		61.5	68.9		69.2
Medium Trucks:	69	9.6 68	3.1	62.0		62.8	70.2		70.4
Heavy Trucks:	72	2.5 7	1.4	62.4		64.5	72.5		72.6
Vehicle Noise:	75	5.2 73	3.9	67.3		67.9	75.6		75.7
Centerline Distan	ce to Noise C	ontour (in feet)							
			70	0 dBA	65 dE	3A	60 dBA	55 dBA	
		Le	dn:	94		202	435		938
		CNE	EL:	96		208	447		964

Monday, June 26, 2023

	FHWA-R	D-77-108 HIGH	IWAY N	OISE P	REDIC	TION MC	DDEL (9/12/20	021)		
Scenar Road Nan Road Segme	rio: 2040 NP ne: Avenida Ba ent: n/o Arrow I	arbosa Highway				Project I Job Nu	Vame: I mber:	rwinda 15410	le Gatewa	y SP	
SITE	SPECIFIC IN	NPUT DATA				N	DISE N	IODE	L INPUT	s	
Highway Data				Si	te Con	ditions (l	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	25,384 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium True	cks (2 A	Axles):	15		
Peak H	Hour Volume:	2,333 vehicle	s		He	avy Truck	ks (3+ A	Axles):	15		
Ve	ehicle Speed:	40 mph		Ve	hicle I	Mix					
Near/Far La	ane Distance:	48 feet			Vehi	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	40.0 feet		No	oise So	urce Ele	vation	s (in fe	et)		
Centerline Dist.	to Observer:	40.0 feet				Autos	. 0.0	000			
Barrier Distance	to Observer:			Mediur	n Trucks	2.2	297				
Observer Height	(Above Pad):			Heav	v Trucks	. 8.0	004	Grade Ad	iustment	: 0.0	
P	ad Elevation:	0.0 feet		-							
Ro	ad Elevation:	0.0 feet		Lá	ne Equ	uivalent l	Distanc	e (in f	'eet)		
	Road Grade:	0.0%				Autos:	: 32.	388			
	Left View:	-90.0 degre	es		Mediur	m Trucks:	: 32.	114			
	Right View:	90.0 degre	es		Heav	y Trucks:	32.	141			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	rm Atten
Autos:	66.51	1.68		2.73		-1.20		-4.59	0.0	000	0.000
Medium Trucks:	77.72	-8.05		2.78		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-10.47		2.78		-1.20		-5.56	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Daj	/ L	.eq Eve	ning	Leq N	light		Ldn	C	NEL
Autos:	69	9.7	67.9		64.9		63.2	2	70.5	5	70.8
Medium Trucks:	71	1.3	69.7		63.6		64.5	5	71.9	9	72.1
Heavy Trucks:	Heavy Trucks: 74.1 72.9						66.1		74.0)	74.1
Vehicle Noise:	76	3.9	75.5		69.0		69.5	5	77.2	2	77.3
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 dE	BA	65 d	BA	6	0 dBA	55	dBA
			Ldn:		120		259		559		1,203
		С	NEL:		124		266		574		1,236

	FHWA-RI	D-77-108 HIGF	IWAY	NOISI	= PREDIC	TION	IODEL	9/12/2	021)		
Scenari	o: 2040 WP					Project	Name:	Irwind	ale Gatewa	iy SP	
Road Nam	e: Avenida Ba	arbosa				Job N	lumber:	15410			
Road Segmer	nt: n/o Arrow H	Highway									
SITE	SPECIFIC IN	IPUT DATA					OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	: 10, So	oft = 15)		
Average Daily	Traffic (Adt):	25,579 vehicl	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Mee	dium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	2,351 vehicle	s		Hei	avy Tru	cks (3+	Axles):	15		
Vel	hicle Speed:	40 mph			Vehicle N	lix					
Near/Far Lar	ne Distance:	48 feet			Vehi	cleType	9	Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.59%
Bar	rier Heiaht:	0.0 feet			Me	edium T	rucks:	77.7%	4.8%	17.5%	9.11%
Barrier Type (0-W	all, 1-Berm):	0.0			F	leavy T	rucks:	84.3%	5 2.7%	13.0%	5.31%
Centerline Dis	t. to Barrier:	40.0 feet			Noise So	urco F	lovation	e (in fi	oof)		
Centerline Dist.	to Observer:	40.0 feet			110/30 00	Auto	e 0	000			
Barrier Distance	o Observer:	0.0 feet			Mediur	n Truck	s: 2	297			
Observer Height (Above Pad):	5.0 feet			Heav	v Truck	s: 8	.004	Grade Ad	justmen	t: 0.0
Pa	d Elevation:	0.0 feet									
Roa	d Elevation:	0.0 feet			Lane Equ	iivalen	t Distan	ce (in	feet)		
F	Road Grade:	0.0%				Auto	s: 32	.388			
	Left View:	-90.0 degre	es		Mediur	n Truck	S: 32	.114			
	Right view:	90.0 degre	es		neav	y TTUCK	s. 32	. 14 1			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	66.51	1.71		2.	73	-1.20		-4.59	0.0	000	0.00
Medium Trucks:	77.72	-8.02		2.1	78	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-10.37		2.	78	-1.20		-5.56	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barri	ier atte	nuation)						
VehicleType	Leq Peak Ho	ur Leq Day	y I	Leq E	evning	Leq	Night		Ldn	C	NEL
Autos:	69	9.7	67.9		65.0		63.	2	70.	6	70.9
Medium Trucks:	71	1.3	69.8		63.7		64.	5	72.		72.
Heavy Trucks:	74	1.2	73.0		64.1		66.	2	74.	1	74.
venicie ivoise:	76	0.9	/5.5		69.0		69.	o	77.	2	17.
Centerline Distanc	e to Noise C	ontour (in feet	9								
			L	70	dBA	65	dBA		50 dBA	55	dBA
			Ldn:		121		262	2	564	-	1,215
		С	NEL:		125		269)	579)	1,248

Monday, June 26, 2023

								112/2	021)		
	FHWA-RL	D-77-108 HIGH	WAT N		REDIC		IODEL (S	9/12/2	021)-		
Scenario	p: E					Project	Name: I	rwinda	ale Gatewa	ay SP	
Road Name	e: Rivergrade	Road				Job N	umber: 1	15410			
Road Segmen	it: s/o Live Oa	ik Avenue									
SITE S	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE	L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	9,965 vehicle	s					Autos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Tr	ucks (2 A	(xles):	15		
Peak He	our Volume:	916 vehicles			He	avy Tru	cks (3+ A	(xles):	15		
Vel	hicle Speed:	40 mph		V	ehicle I	Mix					
Near/Far Lar	ne Distance:	12 feet		-	Veh	icleTvne		Dav	Evenina	Night	Daily
Site Data						,	Autos:	72.4%	9.2%	18.49	% 85.65%
Bar	rior Hoight:	0.0 foot			M	edium T	rucks:	77.7%	4.8%	17.5	% 9.12%
Barrier Type (0-Wa	all 1-Rerm)	0.0 1001			1	Heavy T	rucks:	84.3%	2.7%	13.09	% 5.23%
Centerline Dis	t. to Barrier:	30.0 feet						. (in \$	41		
Centerline Dist. t	o Observer:	30.0 feet		N	oise so	ource El	evations	5 (IN 10	eet)		
Barrier Distance t	o Observer:	0.0 feet				Auto	s: 0.0	000			
Observer Height ()	Above Pad):	5.0 feet			Mediu	m Truck	S: 2.4	297	Crada Ac	livetme	nt: 0.0
Pa	d Elevation:	0.0 feet			Heav	у тиск	s: 8.0	J04	Grade Ad	jusunei	11. 0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalent	t Distanc	e (in	feet)		
F	Road Grade:	0.0%				Auto	s: 29.8	316			
	Left View:	-90.0 degree	s		Mediu	m Truck	s: 29.8	518			
	Right View:	90.0 degree	s		Heav	y Truck	s: 29.	547			
FHWA Noise Mode	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier At	ten Be	erm Atten
Autos:	66.51	-2.38		3.26		-1.20		-4.49	0.	000	0.000
Medium Trucks:	77.72	-12.11		3.33		-1.20		-4.86	0.	000	0.000
Heavy Trucks:	82.99	-14.53		3.32		-1.20		-5.77	0.	000	0.000
Unmitigated Noise	Levels (with	out Topo and l	oarrier	attenu	ation)						
VehicleType	Leq Peak Hou	Ir Leq Day	L	.eq Eve	ening	Leq	Night		Ldn	(CNEL
Autos:	66	.2 6	64.4		61.4		59.7		67.	0	67.3
Medium Trucks:	67	.7 6	6.2		60.1		61.0		68.	4	68.6
Heavy Trucks:	70	.6 6	69.4		60.5		62.6	i	70.	5	70.6
Vehicle Noise:	73	.3 7	2.0		65.5		66.0		73.	7	73.8
Centerline Distanc	e to Noise Co	ontour (in feet)									
				70 dl	BA	65	dBA	(60 dBA	5	i5 dBA
		1	dn:		53		113		244	ŧ	526
		CN	IEL:		54		116		251	1	540

	FHWA-R	D-77-108 HIGF	IWAY I	NOISEI	PREDIC	TION MC	DEL (9/1	2/2021)			
Scenar	io: EP					Project N	lame: Irw	indale G	ateway	/ SP	
Road Nan	ne: Rivergrade	Road				Job Nu	mber: 15	410			
Road Segme	nt: s/o Live Oa	ak Avenue									
SITE	SPECIFIC II	IPUT DATA				NC	DISE MO	DEL IN	IPUTS	5	
Highway Data				S	ite Con	ditions (H	lard = 10	, Soft =	15)		
Average Daily	Traffic (Adt):	10,068 vehicl	es				Au	tos: 1	5		
Peak Hour	Percentage:	9.19%			Me	dium Truc	ks (2 Axl	es): 1	5		
Peak H	lour Volume:	925 vehicle	s		He	avy Truck	s (3+ Axl	es): 1	5		
Ve	hicle Speed:	40 mph		v	ehicle l	Mix					
Near/Far La	ne Distance:	12 feet		-	Veh	icleType	Da	y Eve	ening	Night	Daily
Site Data						AL	itos: 72	.4%	9.2%	18.4%	85.52%
Ba	rrier Height	0.0 feet			M	edium Tru	cks: 77	.7%	4.8%	17.5%	9.11%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 84	.3%	2.7%	13.0%	5.36%
Centerline Di	st. to Barrier:	30.0 feet		Δ	loise Sr	urce Fle	vations (in feet)			
Centerline Dist.	to Observer:	30.0 feet		-	0.00 00	Autos	0.00)			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	2.29	7			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	8.00	1 Gra	de Adii	ustment.	0.0
P	ad Elevation:	0.0 feet			mour	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.00				
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent L	Distance	(in feet)			
	Road Grade:	0.0%				Autos:	29.81	5			
	Left View:	-90.0 degre	es		Mediui	m Trucks:	29.51	В			
	Right View:	90.0 degre	es		Heav	y Trucks:	29.54	7			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barr	ier Atte	en Ber	m Atten
Autos:	66.51	-2.34		3.26	1	-1.20	-4	49	0.0	00	0.000
Medium Trucks:	77.72	-12.07		3.33		-1.20	-4	86	0.0	00	0.000
Heavy Trucks:	82.99	-14.37		3.32		-1.20	-5	77	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	r attenu	uation)						-
VehicleType	Leq Peak Ho	ur Leq Day	/	Leq Ev	ening	Leq N	ight	Ldn		CI	VEL
Autos:	66	3.2	64.4		61.4		59.7		67.0		67.4
Medium Trucks:	67	7.8	66.3		60.2		61.0		68.5		68.6
Heavy Trucks:	70).7	69.6		60.6		62.7		70.7		70.8
Vehicle Noise:	73	3.4	72.1		65.5		66.1		73.8		73.9
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 d	BA	65 dl	BA	60 dE	BA	55	dBA
			Ldn:		53		115		248		534
		С	NEL:		55		118		255		549

	FHWA-R	D-77-108 HIG	HWAY	NOISE	PREDIC		DDEL (S	0/12/20)21)		
Scena Road Nan Road Segme	rio: 2028 NP ne: Rivergrade ent: s/o Live Oa	e Road ak Avenue				Project I Job Ni	Vame: I Imber: 1	rwinda 5410	le Gatewa	y SP	
SITE	SPECIFIC II	NPUT DATA				N	OISE N	ODE	L INPUTS	5	
Highway Data				S	ite Con	ditions (Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	15,626 vehic	les					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 A	xles):	15		
Peak I	-lour Volume:	1,436 vehicle	es		He	avy Truc	ks (3+ A	xles):	15		
Ve	ehicle Speed:	40 mph		V	ahicle	Mix					
Near/Far La	ane Distance:	12 feet		-	Veh	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			М	edium Tru	ucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tri	ucks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	30.0 feet		Λ	loise So	ource Ele	vations	in fe	et)		
Centerline Dist.	to Observer:	30.0 feet				Autos	: 0.0	000	.,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	/v Trucks	: 8.0	004	Grade Adj	ustment	0.0
P	ad Elevation:	0.0 feet		_							
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distanc	e (in f	'eet)		
	Road Grade:	0.0%				Autos	: 29.8	316			
	Left View:	-90.0 degre	es		Meaiu	m Trucks	: 29.8	518			
	Right View:	90.0 degre	es		Heav	/y Trucks	. 29.0	047			
FHWA Noise Mod	lel Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el i	Barrier Atte	en Ber	m Atten
Autos:	66.51	-0.43	3	3.26	6	-1.20		-4.49	0.0	00	0.000
Medium Trucks:	77.72	-10.15	5	3.33	3	-1.20		-4.86	0.0	00	0.000
Heavy Trucks:	82.99	-12.57	7	3.32	2	-1.20		-5.77	0.0	00	0.000
Unmitigated Nois	e Levels (with	nout Topo and	l barrie	er attenı	uation)						
VehicleType	Leq Peak Ho	ur Leq Da	y	Leq Ev	ening	Leq N	light		Ldn	CI	VEL
Autos:	6	B.1	66.3		63.4		61.6		69.0)	69.3
Medium Trucks:	69	9.7	68.2		62.1		63.0		70.4		70.5
Heavy Trucks:	72	2.5	71.4		62.4		64.5		72.5	,	72.6
Vehicle Noise:	75	5.3	73.9		67.4		68.0		75.6		75.8
Centerline Distan	ce to Noise C	ontour (in fee	t)								
			L	70 d	BA	65 d	BA	6	0 dBA	55	dBA
			Ldn:		71		153		330		710
		C	NEL:		73		157		339		730

			_	_	_	_	_			
Scenario:	2028 WP				Project	Name: I	rwinda	ile Gatewa	y SP	
Road Name:	Rivergrade Ro	ad			Job Ni	imber: 1	5410			
Road Segment:	s/o Live Oak A	venue								
SITE SP	ECIFIC INPU	T DATA			N	OISE N	IODE	L INPUT	5	
Highway Data				Site Cond	ditions (Hard =	10, So	oft = 15)		
Average Daily Tra	ffic (Adt): 15,	729 vehicles					Autos:	15		
Peak Hour Pe	rcentage: 9	.19%		Med	dium Tru	cks (2 A	xles):	15		
Peak Hou	Volume: 1,4	45 vehicles		Hea	avy Truc	ks (3+ A	xles):	15		
Vehici	le Speed:	40 mph	F	Vehicle N	lix					
Near/Far Lane	Distance:	12 feet	1	Vehi	cleType		Day	Evening	Night	Daily
Site Data					A	utos:	72.4%	9.2%	18.4%	85.57%
Barrie	r Heiaht:	0.0 feet		Me	dium Tr	ucks:	77.7%	4.8%	17.5%	9.129
Barrier Type (0-Wall,	1-Berm):	0.0		H	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.31%
Centerline Dist. t	o Barrier:	30.0 feet	-	Noise So	urco Ele	vations	in fe	of)		
Centerline Dist. to (Observer: 3	30.0 feet	-	110/30 00	Autos	· 0.0	000			
Barrier Distance to (Observer:	0.0 feet		Mediur	n Trucks	· 22	997			
Observer Height (Ab	ove Pad):	5.0 feet		Heav	v Trucks	: 8.0	004	Grade Ad	iustment	: 0.0
Pad I	Elevation:	0.0 feet	-							
Road I	Elevation:	0.0 feet	-	Lane Equ	ivalent	Distanc	e (in f	'eet)		
Roa	ad Grade: 0	.0%			Autos	: 29.8	316			
1	Left View: -9	0.0 degrees		Meaiun	n Trucks	29.	518			
RI	gnt view: 9	0.0 degrees		Heav	y Trucks	: 29.0	047			
FHWA Noise Model C	alculations									
VehicleType	REMEL Tr	affic Flow D	istance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	-0.40	3.2	26	-1.20		-4.49	0.0	000	0.00
Medium Trucks:	77.72	-10.13	3.3	33	-1.20		-4.86	0.0	000	0.00
Heavy Trucks:	82.99	-12.47	3.3	32	-1.20		-5.77	0.0	000	0.00
Unmitigated Noise Le	evels (without	Topo and barr	ier atter	nuation)						
VehicleType Le	q Peak Hour	Leq Day	Leq E	vening	Leq I	light		Ldn	C	NEL
Autos:	68.2	66.3		63.4		61.6	i i	69.0)	69.
Medium Trucks:	69.7	68.2		62.1		63.0		70.4	ļ	70.
Heavy Trucks:	72.6	71.5		62.5		64.6		72.6	3	72.
Vehicle Noise:	75.4	74.0		67.5		68.0		75.7	7	75.
Centerline Distance t	o Noise Conto	our (in feet)								
			70	dBA	65 c	IBA	6	i0 dBA	55	dBA
		Ldn:		72		154	•	333	•	717

FHWA-RD-77-108 HIGHW	AY NOISE PREDICTION MODEL (9/12/2021)
Scenario: 2040 NP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue	Project Name: Irwindale Gateway SP Job Number: 15410
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
nway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 22,418 vehicles	Autos: 15
Average Daily Traffic (Adt): 22,418 vehicles Peak Hour Percentage: 9.19%	Autos: 15 Medium Trucks (2 Axles): 15
Average Daily Traffic (Adt): 22,418 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,060 vehicles Vehicle Speed: 40 mph	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15

Highway Data				S	site Con	aitions	(Hard	= 10, Si	oft = 15)		
Average Daily	Traffic (Adt):	22,418 vehicle	es					Autos	15		
Peak Hour	Percentage:	9.19%			Me	dium Tr	ucks (2	Axles).	15		
Peak H	lour Volume:	2,060 vehicle	s		He	avy Tru	cks (3+	Axles).	15		
Ve	hicle Speed:	40 mph		v	/ehicle	Mix					
Near/Far La	ne Distance:	12 feet		F	Veh	icleTvpe		Dav	Evenina	Niaht	Daily
Site Data							Autos:	72.4%	6 9.2%	18.4	% 85.65%
Ba	rrior Hoight	0.0 feet			Me	edium T	rucks:	77.7%	6 4.8%	17.5	% 9.12%
Dd Barrier Type (0-M	/all_1_Berm):	0.0 1001			ŀ	leavy T	rucks:	84.3%	6 2.7%	13.0	% 5.23%
Centerline Di	ist to Barrier:	30.0 feet									
Centerline Dist	to Observer:	30.0 feet		Λ	loise So	ource El	evatio	ns (in f	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto	s: (0.000			
Observer Height	(Above Pad):	5.0 feet			Mediui	n Truck	s: 2	2.297			
P	ad Elevation:	0.0 feet			Heav	y Truck	s: 8	3.004	Grade Ad	justme	nt: 0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	t Distai	nce (in	feet)		
	Road Grade:	0.0%				Auto	s: 29	9.816			
	Left View:	-90.0 degre	es		Mediui	n Truck	s: 29	9.518			
	Right View:	90.0 degre	es		Heav	y Truck	s: 29	9.547			
	•					-					
FHWA Noise Mod	el Calculation	5									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fres	anel	Barrier Att	en B	erm Atten
Autos:	66.51	1.14		3.26	3	-1.20		-4.49	0.	000	0.000
Medium Trucks:	77.72	-8.59		3.33	3	-1.20		-4.86	0.	000	0.000
Heavy Trucks:	82.99	-11.01		3.32	2	-1.20		-5.77	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/ L	eq Ev	rening	Leq	Night		Ldn		CNEL
Autos:	69	.7	67.9		64.9		63	.2	70.	5	70.8
Medium Trucks:	71	.3	69.7		63.6		64	.5	71.	9	72.1
Heavy Trucks:	74	.1	72.9		64.0		66	.1	74.	0	74.2
Vehicle Noise:	76	.9	75.5		69.0		69	.5	77.	2	77.4
Centerline Distan	ce to Noise Co	ntour (in feet)								
				70 d	IBA	65	dBA		60 dBA	5	55 dBA
			Ldn:		90		19	5	419)	903
		С	NEL:		93		20	0	431		928

	FHWA-RI	J-77-108 HIGF	IWAYI	NOISE	PREDIC		IODEL (9/12/2	2021)		
Scena	rio: 2040 WP					Project	Name:	Irwinc	lale Gatewa	y SP	
Road Nar	ne: Rivergrade	Road				Job N	umber:	15410)	,	
Road Segme	ent: s/o Live Oa	ik Avenue									
SITE	SPECIFIC IN	IPUT DATA				N	IOISE I	NOD		s	
Highway Data				3	Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	22,521 vehicl	es					Autos	: 15		
Peak Hou	r Percentage:	9.19%			Me	dium Tri	ucks (2)	(Axles	: 15		
Peak I	Hour Volume:	2,070 vehicle	s		He	avy Tru	cks (3+)	Axles)	: 15		
Ve	ehicle Speed:	40 mph		1	Vehicle	Mix					
Near/Far La	ane Distance:	12 feet		F	Veh	icleTvpe		Dav	Evenina	Niah	t Dailv
Site Data				-			Autos:	72.49	% 9.2%	18.4	% 85.59%
Ba	arrier Height:	0.0 feet			M	edium T	rucks:	77.79	% 4.8%	17.5	% 9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy T	rucks:	84.39	% 2.7%	13.0	/% 5.29%
Centerline D	ist. to Barrier:	30.0 feet		1	Noise So	ource El	evation	s (in i	feet)		
Centerline Dist.	to Observer:	30.0 feet		F		Auto	s' 0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	e 2	297			
Observer Height	(Above Pad):	5.0 feet			Heat	n Truck	з. <u>–</u> . e [.] Я	004	Grade Ad	iustme	ent: 0.0
F	Pad Elevation:	0.0 feet			near	y mach	3. 0.	004			
Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 29.	816			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 29.	518			
	Right View:	90.0 degre	es		Heav	y Truck	s: 29.	547			
FHWA Noise Moo	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresr	nel	Barrier Att	en E	Berm Atten
Autos	66.51	1.16		3.2	6	-1.20		-4.49	0.0	000	0.000
Medium Trucks	77.72	-8.57		3.3	3	-1.20		-4.86	0.0	000	0.000
Heavy Trucks	82.99	-10.93		3.3	2	-1.20		-5.77	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)						
VehicleType	Leg Peak Hou	Ir Leq Day	/	Leg Ev	vening	Leq	Night		Ldn	1	CNEL
Autos	69	0.7	67.9		64.9		63.3	2	70.5	ō	70.9
Medium Trucks	71	.3	69.8		63.7		64.	5	72.0	C	72.1
Heavy Trucks	74	.2	73.0		64.1		66.	1	74.1	1	74.2
Vehicle Noise:	76	6.9	75.5		69.0		69.0	3	77.2	2	77.4
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 c	1BA	65	dBA		60 dBA	1	55 dBA
			Ldn:		91		196		422	: :	909
		С	NEL:		93		201		434		934

Monday, June 26, 2023

	FHWA-R	D-77-108 HIGH	IWAY N	OISE F	PREDIC	TION MO	ODEL (S)/12/20	021)		
Scenai Road Nan Road Segme	rio: E ne: Balwin Par nt: s/o Live Oa	k Blvd. ak Avenue				Project I Job Nu	Name: I Imber: 1	rwinda 5410	ile Gatewa	y SP	
SITE	SPECIFIC IN	NPUT DATA				N	OISE N	IODE	L INPUT	3	
Highway Data				S	ite Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	10,885 vehicl	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	1,000 vehicle	s		He	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		V	obicle I	Air					
Near/Far La	ne Distance:	48 feet		-	Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	ucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	ucks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	40.0 feet		N	oise So	urce Ele	vations	; (in fe	eet)		
Centerline Dist.	to Observer:	40.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	ustment.	0.0
P	ad Elevation:	0.0 feet					Distant	- (1)	F 41		
Ro	ad Elevation:	0.0 feet		L	ane Equ	Ivalent	Distanc		eet)		
	Road Grade:	0.0%				Autos	32.3	388			
	Len View:	-90.0 degre	es		Heav	n mucks v Trucks	. 32.	1/14			
	Night view.	90.0 degre	65		neav	y mucho	. 02.				
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ince	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	-2.00		2.73		-1.20		-4.59	0.0	100	0.000
Medium Trucks:	//./2	-11.72		2.78		-1.20		-4.87	0.0	100	0.000
neavy mucks.	02.99	-14.14		2.70		-1.20		-5.50	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	iation)		e	1			
Venicle I ype	Leq Peak Ho	ur Leq Daj		eq Eve	ening	Leq r	vignt		Lan		VEL
Autos:	00	5.U	64.Z		61.3		59.5		00.0	; 5	67.2
Heavy Trucks	70	.0	60.3		60.3		62.4		70 /	:	70.5
Vehicle Noise:	73	3.2	71.8		65.3		65.8		73.5	5	73.7
Contactina Distan	N 0				50.0		50.0		10.0		10.1
Centeriine Distan	ce to Noise C	ontour (in feel	9	70 di	BA	65 d	IBA	e	0 dBA	55	dBA
			Ldn:		68	00 0	147		318		684
		С	NEL:		70		151		326		703

Coonori						Drainat	Nomo	nuinde	la Cataura		
Bood Morris	J. EF Bolwin Bork	Rhid				Ioh M	mber:	16410	ale Gatewa	y SP	
Road Seamen	t daiwin Park	Divu.				JOD IN	iniber.	15410			
Road Segmen	. SUCLIVE ON	Avende									
SITE S	PECIFIC IN	PUT DATA			0:4- 0	N	OISE	AODE		S	
Highway Data					Site Con	ditions (Hard =	10, SC	oft = 15)		
Average Daily	Traffic (Adt):	11,091 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	9.19%			Med	dium Tru	cks (2 A	Axles):	15		
Peak He	our Volume:	1,019 vehicle	s		Hea	avy Truc	ks (3+ A	Axles):	15		
Vel	icle Speed:	40 mph			Vehicle N	lix					
Near/Far Lar	e Distance:	48 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.42
Bar	rier Heiaht:	0.0 feet			Me	dium Tr	ucks:	77.7%	4.8%	17.5%	9.10
Barrier Type (0-Wa	all. 1-Berm):	0.0			H	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.48
Centerline Dis	t. to Barrier:	40.0 feet		H	Naina Ca	uree Ele	wation	n (in fe	ant)		
Centerline Dist. t	o Observer:	40.0 feet		-	NUISe 30	urce Ere	valion	s (III 16	el)		
Barrier Distance t	o Observer:	0.0 feet			Modium	Autos	. 0.1	207			
Observer Height ()	Above Pad):	5.0 feet			Healun	Trucks	. 2.	297	Grade Ad	iuctmont	
Pa	d Elevation:	0.0 feet			neav.	y mucks	. 0.	004	Orade Auj	usunen	0.0
Roa	d Elevation:	0.0 feet			Lane Equ	iivalent	Distand	ce (in i	feet)		
F	oad Grade:	0.0%				Autos	: 32.	388			
	Left View:	-90.0 degree	es		Mediun	n Trucks	: 32.	114			
	Right View:	90.0 degre	es		Heav	y Trucks	32.	141			
FHWA Noise Mode	I Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	-1.93		2.7	3	-1.20		-4.59	0.0	000	0.00
Medium Trucks:	77.72	-11.65		2.7	8	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-13.86		2.7	8	-1.20		-5.56	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and	barrie	er atter	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq E	vening	Leq I	Vight		Ldn	C	NEL
Autos:	66.	.1	64.3		61.3		59.6	6	66.9	9	67.
Medium Trucks:	67.	6	66.1		60.0		60.9)	68.3	3	68
Heavy Trucks:	70.	.7	69.5		60.6		62.7	7	70.6	3	70
Vehicle Noise:	73.	4	72.0		65.4		66.0)	73.1	7	73.
Centerline Distanc	e to Noise Co	ntour (in feet)	70	-10.4	65.4	0		0 -10 4		
			L	70	JBA TO	65 0	IBA	6	OU OBA	55	aBA
		0	Lan:		70		151		326		703
		C	VEL:		72		156		335		722

	FHWA-RD)-77-108 HIGHW	AY NOIS			DEL (9/	12/20	021)		
Scena Road Nan Road Segme	rio: 2028 NP ne: Balwin Park ent: s/o Live Oa	: Blvd. k Avenue			Project N Job Nur	lame: In nber: 15	winda 5410	le Gatewa	y SP	
SITE	SPECIFIC IN	PUT DATA			NC	ISE M	ODE		s	
Highway Data				Site Cor	nditions (H	lard = 1	0, So	ft = 15)		
Average Daily Peak Hou Peak I	Traffic (Adt): Percentage: Hour Volume:	16,327 vehicles 9.19% 1,500 vehicles		Me He	edium Truc eavy Truck	A ks (2 Ax s (3+ Ax	utos: (les): (les):	15 15 15		
Ve	ehicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ane Distance:	48 feet		Veh	nicleType	D	ay	Evening	Night	Daily
Site Data					Au	tos: 7	2.4%	9.2%	18.4%	85.65%
Ba Barrier Type (0-V	rrier Height: Vall, 1-Berm):	0.0 feet 0.0		M	ledium Tru Heavy Tru	cks: 7 cks: 8	7.7% 4.3%	4.8% 2.7%	17.5% 13.0%	9.12% 5.23%
Centerline D	ist. to Barrier:	40.0 feet		Noice S	ourco Elos	ations	(in fo	nof)		
Centerline Dist.	to Observer:	40.0 feet		Noise 3	Autos:	0.00	00	el)		
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks:	2.29	97			
Observer Height	(Above Pad):	5.0 feet		Hea	vy Trucks:	8.00)4	Grade Adj	iustmen	č 0.0
P	ad Elevation:	0.0 feet		Long Ea		Viotonos	(in f	in atl		
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent L	vistance		eet)		
	Road Grade:	0.0%		Marth	Autos:	32.30	58			
	Right View:	-90.0 degrees 90.0 degrees		Hea	wy Trucks: vy Trucks:	32.1	14 41			
FHWA Noise Mod	lel Calculation:	5								
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresne	1	Barrier Atte	en Be	rm Atten
Autos	66.51	-0.24	2	.73	-1.20	-4	4.59	0.0	000	0.000
Medium Trucks:	77.72	-9.96	2	.78	-1.20	-4	4.87	0.0	000	0.000
Heavy Trucks:	82.99	-12.38	2	.78	-1.20	-	5.56	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and ba	nrier att	enuation)						
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq N	ight		Ldn	С	NEL
Autos:	67	.8 66	6.0	63.0)	61.3		68.6	3	68.9
Medium Trucks:	69	.3 67	.8	61.7		62.6		70.0)	70.2
Heavy Trucks:	72	.2 71	.0	62.1		64.2		72.1	1	72.2
Vehicle Noise:	74	.9 73	1.6	67.1		67.6		75.3	3	75.4
Centerline Distan	ce to Noise Co	ntour (in feet)								
			7	0 dBA	65 dE	BA	6	0 dBA	55	dBA
		Lo	in:	90		193		416		897
		CNE	L:	92		198		427		921

	FHWA-RI	D-77-108 HIGH	NAY N	OISE	PREDIC		ODEL (9	/12/2	021)		
Scenai Road Nan Road Segme	rio: 2028 WP ne: Balwin Park ent: s/o Live Oa	k Blvd. k Avenue				Project Job Ni	Name: Ii umber: 1	winda 5410	ale Gateway	/ SP	
SITE	SPECIFIC IN	IPUT DATA				N	OISE M	ODE	L INPUTS	3	
Highway Data				S	ite Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	16.533 vehicle	s				A	utos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 A	xles):	15		
Peak I	lour Volume:	1,519 vehicles			He	avy Truc	ks (3+ A	, xles):	15		
Ve	hicle Speed:	40 mph						-			
Near/Far La	ne Distance:	48 feet			enicie i				Evening	Market	Deilte
0:4- 0-4-		-			veni	cie i ype	1	Jay	Evening	Night	Daily
Site Data				_		A dium Tr	utos:	/ 2.4% 77 70/	9.2%	18.4%	0.110/
Ba	rrier Height:	0.0 feet			IVIE	loouu Tr	ucks.	11.170 24.20/	9 70/	12.0%	5 20%
Barrier Type (0-V	Vall, 1-Berm):	0.0			r	leavy II	UCKS. (54.3%	2.170	13.0%	5.39%
Centerline D	ist. to Barrier:	40.0 feet		٨	loise So	urce Ele	evations	(in fe	eet)		
Centerline Dist.	to Observer:	40.0 feet				Autos	: 0.0	00			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	97			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	04	Grade Adj	ustment	t: 0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distanc	e (in i	reet)		
	Road Grade:	0.0%				Autos	32.3	88			
	Left View:	-90.0 degree	s		Mediur	n Trucks	: 32.1	14			
	Right View:	90.0 degree	s		Heav	y Trucks	32.1	41			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	e/	Barrier Atte	en Bei	rm Atten
Autos:	66.51	-0.19		2.73		-1.20	-	4.59	0.0	00	0.000
Medium Trucks:	77.72	-9.91		2.78		-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	82.99	-12.19		2.78		-1.20	-	5.56	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and l	oarrier a	attenı	uation)						
VehicleType	Leq Peak Hou	Ir Leq Day	L	.eq Ev	ening	Leq I	Vight		Ldn	С	NEL
Autos:	67	.8 6	6.0		63.1		61.3		68.7		69.0
Medium Trucks:	69	.4 6	67.9		61.8		62.6		70.1		70.2
Heavy Trucks:	72	.4 7	1.2		62.3		64.3		72.3	i .	72.4
Vehicle Noise:	75	.1 7	3.7		67.2		67.7		75.4		75.5
Centerline Distan	ce to Noise Co	ontour (in feet)									
				70 d	BA	65 0	IBA	6	60 dBA	55	dBA
		1	.dn:		91		197		424		913
		CA	IEL:		94		202		435		938

Monday, June 26, 2023

	FHWA-R	D-77-108 HIGH	IWAY N	IOISE P	REDIC	TION MC	DDEL (9/12/20	021)		
Scenai Road Nan Road Segme	rio: 2040 NP ne: Balwin Par ent: s/o Live Oa	k Blvd. ak Avenue				Project N Job Nu	lame: I mber: '	rwinda 15410	le Gatewa	y SP	
SITE	SPECIFIC IN	NPUT DATA				NC	DISE N	IODE	L INPUT	S	
Highway Data				Si	te Con	ditions (F	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	22,859 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	cks (2 A	Axles):	15		
Peak H	Hour Volume:	2,101 vehicle	s		He	avy Truck	(3+ A	Axles):	15		
Ve	ehicle Speed:	40 mph		Ve	hicle I	Mix					
Near/Far La	ane Distance:	48 feet		Ē	Veh	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						AL	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	40.0 feet		No	oise So	urce Ele	vation	s (in fe	et)		
Centerline Dist.	to Observer:	40.0 feet				Autos:	0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.3	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks:	8.0	004	Grade Adj	iustment	: 0.0
P	ad Elevation:	0.0 feet		-							
Ro	ad Elevation:	0.0 feet		La	ne Equ	uivalent L	Distanc	ce (In 1	eet)		
	Road Grade:	0.0%				Autos:	32.	388			
	Left View:	-90.0 degre	es		Meaiui	m Trucks:	32.	114			
	Right View:	90.0 degre	es		Heav	y Trucks:	32.	141			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	1.23		2.73		-1.20		-4.59	0.0	000	0.000
Medium Trucks:	77.72	-8.50		2.78		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-10.92		2.78		-1.20		-5.56	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Da	/ 1	Leq Eve	ening	Leq N	light		Ldn	C	NEL
Autos:	69	9.3	67.4		64.5		62.7	,	70.1	1	70.4
Medium Trucks:	70	0.8	69.3		63.2		64.1		71.5	5	71.6
Heavy Trucks:	73	3.6	72.5		63.5		65.6	6	73.6	6	73.7
Vehicle Noise:	76	3.4	75.0		68.5		69.1		76.7	7	76.9
Centerline Distan	ce to Noise C	ontour (in feet)				_				
			∟	70 dE	ЗA	65 di	ВA	6	0 dBA	55	dBA
		-	Ldn:		112		242		521		1,122
		С	NEL:		115		248		535		1,153

Scenario: 2040 WP			Project Nan	e: Irwind	ale Gatewa	y SP	
Road Name: Balwin Park Blvd.			Job Numb	er: 15410			
Road Segment: s/o Live Oak Avenue							
SITE SPECIFIC INPUT DATA			NOIS	E MODE	L INPUT	5	
Highway Data		Site Con	ditions (Har	d = 10, S	oft = 15)		
Average Daily Traffic (Adt): 23,065 vehi	cles			Autos.	15		
Peak Hour Percentage: 9.19%		Me	dium Trucks	(2 Axles).	15		
Peak Hour Volume: 2,120 vehic	es	He	avy Trucks (3+ Axles).	15		
Vehicle Speed: 40 mph		Vehicle I	Nix				
Near/Far Lane Distance: 48 feet		Veh	cleType	Day	Evening	Night	Daily
Site Data			Autos	: 72.4%	6 9.2%	18.4%	85.54%
Barrier Height: 0.0 feet		Me	edium Trucks	: 77.7%	6 4.8%	17.5%	9.11%
Barrier Type (0-Wall. 1-Berm): 0.0		F	leavy Trucks	84.3%	6 2.7%	13.0%	5.35%
Centerline Dist. to Barrier: 40.0 feet		Noise Sc	urco Flovat	ions (in f	oof)		
Centerline Dist. to Observer: 40.0 feet		NUISE SU	Autos:	0.000	eel)		
Barrier Distance to Observer: 0.0 feet		Mediu	n Trucks	2 207			
Observer Height (Above Pad): 5.0 feet		Heav	v Trucks:	8 004	Grade Ad	iustment	0.0
Pad Elevation: 0.0 feet			<i>y 11</i> dono.	0.001	,		
Road Elevation: 0.0 feet		Lane Eq	uivalent Dis	ance (in	feet)		
Road Grade: 0.0%			Autos:	32.388			
Left View: -90.0 degr	ees	Mediui	n Trucks:	32.114			
Right View: 90.0 degr	ees	Heav	y Trucks:	32.141			
FHWA Noise Model Calculations							
VehicleType REMEL Traffic Flow	Distan	ce Finite	Road Fr	esnel	Barrier Atte	en Ber	m Atten
Autos: 66.51 1.2	6	2.73	-1.20	-4.59	0.0	000	0.00
Medium Trucks: 77.72 -8.4	7	2.78	-1.20	-4.87	0.0	000	0.00
Heavy Trucks: 82.99 -10.7	8	2.78	-1.20	-5.56	0.0	000	0.00
Unmitigated Noise Levels (without Topo an	d barrier a	ttenuation)					
VehicleType Leq Peak Hour Leq D	ay Le	eq Evening	Leq Nigh	t	Ldn	C	VEL
Autos: 69.3	67.5	64.5		52.8	70.1	I	70.
Medium Trucks: 70.8	69.3	63.2		54.1	71.5	5	71.
Heavy Trucks: 73.8	72.6	63.7		65.8	73.7	7	73.
Vehicle Noise: 76.5	75.1	68.6		59.1	76.8	3	77.
Centerline Distance to Noise Contour (in fe	et)						
· · · ·	L	70 dBA	65 dBA		60 dBA	55	dBA
	Ldn:	114		245	528		1,137

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021) Project Name: Irwindale Gateway SP Job Number: 15410 Scenario: E Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Highway Data Autos: 15 Average Daily Traffic (Adt): 27,632 vehicles Peak Hour Percentage: 9.19% Medium Trucks (2 Axles): 15 Peak Hour Volume: 2,539 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix Near/Far Lane Distance: 80 feet Day Evening Night Daily VehicleType
 Autos:
 72.4%
 9.2%
 18.4%
 85.65%

 Medium Trucks:
 77.7%
 4.8%
 17.5%
 9.12%
 Site Data Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.23% Centerline Dist. to Barrier: Centerline Dist. to Observer: 50.0 feet 50.0 feet Noise Source Elevations (in feet) Autos: 0,000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Grade Adjustment: 0.0 Heavy Trucks: 8.004 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 30.122 Road Grade: 0.0% Left View: -90.0 degrees Right View: Heavy Trucks: 30.150 90.0 degrees MEL Traffic Flow Distance Finite Road FHWA Noise Model Calculations VehicleType REMEL Autos: 66 Barrier Atten Berm Atten Fresnel 2.05 -7.68 -4.65 0.000 0.000 Medium Trucks: 77.72 -1.20 -4.87 3.20 0.000 0.000 Heavy Trucks: 82.99 -10.10 3.19 -1.20 -5.43 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night 68.7 65.7 64 CNEL Ldn 71.3 Autos 70.5 64.0 71.6 Medium Trucks: 65.3 72.0 70.5 64.4 72.7 72.9 Heavy Trucks: Vehicle Noise: 74 0 73.7 64.8 66.9 74.8 74.9 77.6 78.1 69.8 70.3 78.0 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 170 365 787 1,696 CNEL: 174 375 809 1,743

Scenario: EP	Scenario: EP Road Name: Live Oak Avenue							ale Gatewa	iy SP	
Road Name: Live Oak A	Avenue				Job Nur	nber: '	15410			
Road Segment: s/o Arrow	Highway									
SITE SPECIFIC I	NPUT DATA				NO	ISE N	IODE	L INPUT	s	
Highway Data			S	ite Con	ditions (H	lard =	10, So	oft = 15)		
Average Daily Traffic (Adt):	28,004 vehicle	es				,	Autos:	15		
Peak Hour Percentage:	9.19%			Mee	dium Truc	ks (2 A	(xles)	15		
Peak Hour Volume:	2,574 vehicles	S		Hei	avy Truck	s (3+ A	(xles)	15		
Vehicle Speed:	40 mph		v	ehicle A	Nix					
Near/Far Lane Distance:	80 feet		-	Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data					Au	tos:	72.4%	9.2%	18.4%	85.72%
Parrier Height:	0.0 foot			Me	edium Tru	cks:	77.7%	4.8%	17.5%	9.04%
Barrier Type (0-Wall, 1-Berm):	0.0			F	leavy Tru	cks:	84.3%	2.7%	13.0%	5.24%
Centerline Dist. to Barrier:	50.0 feet		A	loise So	urce Flev	ation	: (in fi	pet)		
Centerline Dist. to Observer:	50.0 feet		Ê	0.00 00	Autos	0.0	000			
Barrier Distance to Observer:	0.0 feet			Modiur	n Trucke:	2 2	207			
Observer Height (Above Pad):	5.0 feet			Heav	n Trucks.	2.4	104	Grade Ad	iustment	· 0.0
Pad Elevation:	0.0 feet			neav	y mucks.	0.0	504	0.0007.10	Juounon	. 0.0
Road Elevation:	0.0 feet		L	ane Equ	uivalent D)istanc	e (in :	feet)		
Road Grade:	0.0%				Autos:	30.4	414			
Left View:	-90.0 degree	es		Mediur	n Trucks:	30.	122			
Right View:	90.0 degree	es		Heav	y Trucks:	30.	150			
FHWA Noise Model Calculation	าร									
VehicleType REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier Att	en Bei	rm Atten
Autos: 66.5	1 2.11		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks: 77.72	2 -7.66		3.20)	-1.20		-4.87	0.0	000	0.000
Heavy Trucks: 82.99	-10.03		3.19)	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise Levels (with	hout Topo and	barrier a	attenı	uation)						
VehicleType Leq Peak Ho	ur Leq Day	' L	eq Ev	ening	Leq Ni	ight		Ldn	С	NEL
Autos: 7	0.6	68.7		65.8		64.0)	71.4	4	71.7
Medium Trucks: 7	2.1	70.5		64.4		65.3	5	72.	7	72.9
Heavy Trucks: 7	5.0	73.8		64.8		66.9)	74.9	9	75.0
Vehicle Noise: 7	7.7	76.3		69.8		70.4		78.	D	78.2
Centerline Distance to Noise C	ontour (in feet,)								
			70 d	BA	65 dE	BA	6	60 dBA	55	dBA
		Ldn:		171		368		794		1,710
	CI	NEL:		176		378		815		1,756

Monday, June 26, 2023

	FHWA-R	D-77-108 HIG	HWAY	NOISE I	PREDIC	TION MC	DEL (9)/12/20	21)		
Scenar	Scenario: 2028 NP Road Name: Live Oak Avenue					Project N	lame: I	rwinda	le Gatewa	y SP	
Road Nan Road Segme	nt: s/o Arrow H	Highway				300 MU	mber: 1	5410			
SITE	SPECIFIC IN	NPUT DATA				N	DISE N	IODE	L INPUT	5	
Highway Data				S	ite Con	ditions (F	lard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	38,323 vehic	les				A	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	cks (2 A	xles):	15		
Peak H	lour Volume:	3,522 vehicle	es		He	avy Truck	(3+ A	xles):	15		
Ve	ehicle Speed:	40 mph		v	ehicle l	Mix					
Near/Far La	ne Distance:	80 feet		-	Veh	icleType	1	Day	Evening	Night	Daily
Site Data						AL	itos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			М	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	loise Sc	ource Ele	vations	; (in fe	et)		
Centerline Dist.	to Observer:	50.0 feet				Autos:	0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks:	8.0	004	Grade Adj	ustment.	0.0
P	ad Elevation:	0.0 feet						- (in 1	4		
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent L	Jistanc		eet)		
	Road Grade:	0.0%			Madiu	Autos:	30.4	114			
	Len View:	-90.0 degre	es		Heav	n Trucks. v Trucks:	30.1	122			
	rtight view.	90.0 degre	505		near	y mucho.	00.1	100			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el I	Barrier Atte	en Ber	m Atten
Autos:	00.01	3.4	2	3.14		-1.20		4.00	0.0	000	0.000
Heavy Trucks	92.00	-0.20	2	3.20		-1.20		-4.07 5.42	0.0	000	0.000
neavy nacks.	02.00	-0.00		0.10		-1.20		0.40	0.0	/00	0.000
Unmitigated Nois	e Levels (with	out Topo and	1 barrie	r attenu	aning	Log	light		l dn	0	VEI
Autos	Ley reak not		70.1	Ley LV	67 1	Ley N	65.4		ZUII 72 7		73.0
Medium Trucks	73	3.5	71.9		65.8		66.7		74 1		74.3
Heavy Trucks:	76	3.3	75.1		66.2		68.3		76.2	>	76.4
Vehicle Noise:	79	9.1	77.7		71.2		71.7		79.4	ļ	79.6
Centerline Distan	ce to Noise C	ontour (in fee	t)								
				70 d	BA	65 d	BA	6	0 dBA	55	dBA
			Ldn:		211		455		979		2,110
	Lan: CNEL:					217 467 1,006					2,167

FRWA-	RD-//-100 P	IIGHWA	I NOISE	PREDIC		ODEL (9/12/20	021)		
Scenario: 2028 WF)				Project	Name: I	rwinda	ale Gatewa	y SP	
Road Name: Live Oak	Avenue				Job Nu	imber: *	15410			
Road Segment: s/o Arrov	v Highway									
SITE SPECIFIC	INPUT DA	ТА			N	OISE N	IODE	L INPUT	s	
Highway Data			4	Site Con	ditions ('Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt)	38,695 ve	ehicles					Autos:	15		
Peak Hour Percentage	9.19%			Me	dium Tru	cks (2 A	(xles)	15		
Peak Hour Volume	3,556 ve	hicles		Hei	avy Truc	ks (3+ A	(xles)	15		
Vehicle Speed	40 mp	bh	1	Vehicle N	lix					
Near/Far Lane Distance	80 fee	et	Ē	Vehi	cleType		Day	Evening	Night	Daily
Site Data					A	utos:	72.4%	9.2%	18.4%	85.70%
Barrier Height	: 0.0 fe	et		Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.06%
Barrier Type (0-Wall, 1-Berm)	. 0.0			F	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.24%
Centerline Dist. to Barrier	: 50.0 fe	et	-	Noise So	urce Ele	vation	: (in fe	pet)		
Centerline Dist. to Observer	: 50.0 fe	et	Ľ.	10.00 00	Autos	. 00	000	,		
Barrier Distance to Observer	: 0.0 fe	et		Mediur	n Trucks	2.3	297			
Observer Height (Above Pad)	: 5.0 fe	et		Heav	v Trucks	: 8.0	004	Grade Ad	iustment	: 0.0
Pad Elevation	: 0.0 fe	et	L.							
Road Elevation	: 0.0 fe	et	1	Lane Equ	iivalent	Distanc	e (in i	feet)		
Road Grade	: 0.0%				Autos	: 30.4	414			
Left View	: -90.0 d	egrees		Mediur	n Trucks	: 30.	122			
Right View	: 90.0 d	egrees		Heav	y Trucks	: 30.	150			
FHWA Noise Model Calculation	ons									
VehicleType REMEL	Traffic Fi	low D	istance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos: 66.	51	3.51	3.1	4	-1.20		-4.65	0.0	000	0.00
Medium Trucks: 77.	72 -	6.24	3.2	0	-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 82.9	99 -	8.63	3.1	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Levels (wi	thout Topo	and barr	ier atten	uation)						
VehicleType Leq Peak H	lour Leq	ı Day	Leg E	vening	Leq I	Vight		Ldn	C	NEL
Autos:	72.0	70.1		67.2		65.4	Ļ	72.8	3	73.
Medium Trucks:	73.5	71.9		65.9		66.7	,	74.1	1	74.
Heavy Trucks:	76.4	75.2		66.2		68.3	1	76.3	3	76.
Vehicle Noise:	79.1	77.7		71.2		71.8	5	79.4	1	79.
Centerline Distance to Noise	Contour (in	feet)								
			70 0	dBA	65 c	iBA	6	60 dBA	55	dBA
		Ldn		212		457		985		2,122
		CNEL		219		470		1 0 1 2		2 180

Monday, June 26, 2023

	FHWA-RD	-77-108 HIGHV	VAY NO	DISE I	PREDIC	TION M	ODEL (9/12/2	021)		
Scenario:	2040 NP					Project	Name: I	rwinda	ale Gatewa	y SP	
Road Name:	Live Oak Av	enue				Job N	umber: `	15410			
Road Segment:	s/o Arrow H	ighway									
SITE SP	ECIFIC IN	PUT DATA				N	OISE N	IODE		S	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Tra	affic (Adt):	51,151 vehicles	3					Autos:	15		
Peak Hour Pe	rcentage:	9.19%			Me	dium Tru	icks (2 A	(xles)	15		
Peak Hou	r Volume:	4,701 vehicles			He	avy Truc	:ks (3+ A	(xles)	15		
Vehic	le Speed:	40 mph		v	ehicle l	Mix					
Near/Far Lane	Distance:	80 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Barrie	er Heiaht:	0.0 feet			М	edium Tr	ucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wall,	1-Berm):	0.0			1	Heavy Tr	ucks:	84.3%	2.7%	13.0%	5.23%
Centerline Dist.	to Barrier:	50.0 feet		N	loise So	ource El	evation	s (in fe	eet)		
Centerline Dist. to	Observer:	50.0 feet				Autos	: 01	100	.,		
Barrier Distance to	Observer:	0.0 feet			Mediu	m Trucks	2.3	297			
Observer Height (Ab	ove Pad):	5.0 feet			Heav	v Trucks	. 8.0	004	Grade Ad	justment	: 0.0
Pad	Elevation:	0.0 feet				,					
Road	Elevation:	0.0 feet		L	ane Eq	uivalent	Distanc	ce (in i	feet)		
Roa	ad Grade:	0.0%				Autos	s: 30	414			
	Left View:	-90.0 degrees	5		Mediu	m Trucks	30.	122			
R	ight View:	90.0 degrees	3		Heav	ry Trucks	s: 30.	150			
FHWA Noise Model (Calculations										
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresn	e/	Barrier Att	en Bei	rm Atten
Autos:	66.51	4.72		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-5.00		3.20		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-7.42		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Noise L	evels (witho	ut Topo and b	arrier a	ttenu	uation)						
VehicleType Le	q Peak Hou	r Leq Day	Le	eq Ev	ening	Leq	Night		Ldn	C	NEL
Autos:	73.	2 7	1.3		68.4		66.6	6	74.0	D	74.3
Medium Trucks:	74.	7 7	3.2		67.1		68.0)	75.4	4	75.6
Heavy Trucks:	77.	6 7	6.4		67.4		69.5	5	77.5	5	77.6
Vehicle Noise:	80.	3 7	8.9		72.4		73.0)	80.6	6	80.8
Centerline Distance	to Noise Co	ntour (in feet)									
				70 di	BA	65 0	зBA	1 6	ou dBA	55	aBA
		L	dn:		256		551		1,187		2,558

	FHWA-RI	D-77-108 HIGH	WAY NC	DISE F	PREDIC		IODEL (§	9/12/20	021)		
Scenari Road Nam	Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway					Project Job N	Name: I lumber:	rwinda 15410	ile Gatewa	y SP	
Road Segmer	nt: s/o Arrow H	lighway									
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE		5	
Highway Data				Si	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	51,523 vehicle	es				,	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tr	ucks (2 A	Axles):	15		
Peak H	our Volume:	4,735 vehicles	6		He	avy Tru	cks (3+ A	Axles):	15		
Ve	hicle Speed:	40 mph		V	ehicle	Mix					
Near/Far La	ne Distance:	80 feet			Veh	icleType	;	Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.69%
Bar	rier Height:	0.0 feet			М	edium T	rucks:	77.7%	4.8%	17.5%	9.08%
Barrier Type (0-W	'all, 1-Berm):	0.0			1	Heavy T	rucks:	84.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	50.0 feet		N	oise So	ource El	levations	s (in fe	et)		
Centerline Dist.	to Observer:	50.0 feet				Auto	s: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2.2	297			
Observer Height (Above Pad):	5.0 feet			Hear	/y Truck	s: 8.0	004	Grade Adj	iustment.	0.0
Pa	ad Elevation:	0.0 feet		1.	ano Ea	uivalon	t Dictory	o (in t	(act)		
Roa	ad Elevation:	0.0 feet		L	апе сч	Auto	C 20	111 111	eeŋ		
,	Loft View:	0.0%			Mediu	m Truck	3. JU.	100			
	Right View:	-90.0 degree	25		Heav	/v Truck	s. 30. s. 30.	122			
	ragin tion.	JU.U degree	~			,	a. 00.				
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	00.01	4.76		3.14		-1.20		-4.00	0.0	000	0.000
Heavy Trucks	92.00	-4.99		3.20		-1.20		-4.07	0.0	000	0.000
Tieavy Trucks.	02.55	=1.55		3.15		=1.20		-3.43	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier a	ttenu	ation)	100	Night	1	l dn	0	
Autos	Ley Feak Hot	2 Leq Day	714	SY LVC	68.4	Ley	66 7	,	74 (74.3
Medium Trucks:	74	1.7	73.2		67.1		68.0)	75.4	í	75.6
Heavy Trucks:	77	7.6	76.4		67.5		69.6	3	77.5	5	77.6
Vehicle Noise:	80).3	79.0		72.5		73.0)	80.7	7	80.8
Centerline Distance	e to Noise C	ontour (in feet	1								
2 control Distante				70 dE	BA	65	dBA	6	i0 dBA	55	dBA
			Ldn:		257		553		1,192		2,569
		CI	VEL:		264		568		1,225		2,638

	FHWA-R	D-77-108 HIGH	IWAY N	IOISE F	PREDIC	TION MC	DDEL (S	9/12/20	021)		
Scenar Road Nan Road Segme	rio: E ne: Live Oak A ent: w/o I-605 S	venue SB On-Ramp				Project N Job Nu	lame: I mber: 1	rwinda 15410	ale Gatewa	y SP	
SITE	SPECIFIC I					NO	DISE N			5	
Highway Data	or con to h	I OI DAIA		S	ite Con	ditions (I	Hard =	10, So	oft = 15)	0	
Average Daily	Traffic (Adt):	27.632 vehicl	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	cks (2 A	Axles):	15		
Peak H	-lour Volume:	2,539 vehicle	s		He	avy Truck	(3+ A	xles):	15		
Ve	ehicle Speed:	40 mph		V	ohiclo I	Mix					
Near/Far La	ane Distance:	80 feet			Veh	icleType		Dav	Evenina	Niaht	Dailv
Site Data						AL	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height	0.0 feet			М	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall. 1-Berm):	0.0			1	Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	nisa Sr	urce Ele	vation	s (in fo	oot)		
Centerline Dist.	to Observer:	50.0 feet			0136 00	Autos	0.0	200			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	2:	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks:	8.0	004	Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet				,					
Ro	ad Elevation:	0.0 feet		Li	ane Eq	uivalent l	Distand	ce (in f	feet)		
	Road Grade:	0.0%				Autos:	30.4	414			
	Left View:	-90.0 degre	es		Mediu	m Trucks:	30.	122			
	Right View:	90.0 degre	es		Heav	y Trucks:	30.	150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el 🛛	Barrier Att	en Ber	m Atten
Autos:	66.51	2.05		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-7.68		3.20		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-10.10		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Daj	V I	Leq Eve	ening	Leq N	light		Ldn	C	NEL
Autos:	70	0.5	68.7		65.7		64.0)	71.3	3	71.6
Medium Trucks:	72	2.0	70.5		64.4		65.3	3	72.7	7	72.9
Heavy Trucks:	74	1.9	73.7		64.8		66.9)	74.8	3	74.9
Vehicle Noise:	77	7.6	76.3		69.8		70.3	3	78.0)	78.1
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 dE	BA	65 di	BA	6	60 dBA	55	dBA
			Ldn:		170		365		787		1,696
		С	NEL:		174		375		809		1,743

Scenario: EP			Project N	lame: Ir	windale	Gatewa	y SP	
Road Name: Live Oak Avenue			Job Nu	mber: 1	5410			
Road Segment: w/o I-605 SB On-Ramp								
SITE SPECIFIC INPUT DATA			NC	DISE M	ODEL	INPUT	5	
Highway Data		Site Con	ditions (H	lard = 1	0, Soft	= 15)		
Average Daily Traffic (Adt): 28,205 vehicles	6			A	utos:	15		
Peak Hour Percentage: 9.19%		Me	dium Truc	:ks (2 A:	xles):	15		
Peak Hour Volume: 2,592 vehicles		He	avy Truck	:s (3+ A)	xles):	15		
Vehicle Speed: 40 mph		Vehicle I	Nix					
Near/Far Lane Distance: 80 feet		Vehi	cleType	L	Day E	vening	Night	Daily
Site Data			AL	itos: 7	2.4%	9.2%	18.4%	85.51
Barrier Height: 0.0 feet		Me	edium Tru	cks: 7	7.7%	4.8%	17.5%	9.07
Barrier Type (0-Wall, 1-Berm); 0.0		F	leavy Tru	cks: 8	84.3%	2.7%	13.0%	5.42
Centerline Dist. to Barrier: 50.0 feet		Noine Co	uree Ele	rationa	(in feet			
Centerline Dist. to Observer: 50.0 feet		Noise Su	Autoo	valions	00)		
Barrier Distance to Observer: 0.0 feet		Madiu	Aulos. n Trucks:	2.0	00			
Observer Height (Above Pad): 5.0 feet		Heav	v Trucks:	8.0	5/ 04 G	rade Ad	iustment	.00
Pad Elevation: 0.0 feet		nouv	y maaks.	0.0	04 0	/000 / 10	aounom	. 0.0
Road Elevation: 0.0 feet		Lane Equ	uivalent L	Distance	e (in fee	et)		
Road Grade: 0.0%			Autos:	30.4	14			
Left View: -90.0 degrees	6	Mediur	n Trucks:	30.1	22			
Right View: 90.0 degrees	6	Heav	y Trucks:	30.1	50			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow	Distand	e Finite	Road	Fresne	el Ba	arrier Atte	en Ber	m Atten
Autos: 66.51 2.13		3.14	-1.20	-	4.65	0.0	000	0.00
Medium Trucks: 77.72 -7.62		3.20	-1.20	-	4.87	0.0	000	0.00
Heavy Trucks: 82.99 -9.85		3.19	-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise Levels (without Topo and b	arrier at	tenuation)						
VehicleType Leq Peak Hour Leq Day	Le	q Evening	Leq N	ïght	L	dn	C	NEL
Autos: 70.6 6	8.8	65.8		64.0		71.4	Ļ	71
Medium Trucks: 72.1 7	0.6	64.5		65.4		72.8	3	72
Heavy Trucks: 75.1 7	4.0	65.0		67.1		75.1		75
Vehicle Noise: 77.8 7	6.4	69.9		70.5		78.1		78
Centerline Distance to Noise Contour (in feet)								
		70 dBA	65 dl	BA	60	dBA	55	dBA
L	dn:	174		374		807		1,73
CN	EL:	178		295		828		1 79

Monday, June 26, 2023

FHWA-F	RD-77-108 HIGH	way nois	E PREDIO	CTION MOD	EL (9/12/	2021)		
Scenario: 2028 NP Road Name: Live Oak Road Segment: w/o I-605	Avenue SB On-Ramp			Project Na Job Numl	me: Irwin ber: 1541	dale Gatewa 0	y SP	
SITE SPECIFIC	NPUT DATA			NOI	SE MOD	EL INPUT	5	
Highway Data			Site Con	ditions (Ha	rd = 10, 3	Soft = 15)		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	38,323 vehicle 9.19% 3,522 vehicles	s	Me He	dium Trucks avy Trucks	Auto s (2 Axles (3+ Axles	s: 15 ;): 15 ;): 15		
Vehicle Speed:	40 mph		Vehicle	Mix				
Near/Far Lane Distance:	80 feet		Veh	icleTyne	Dav	Evenina	Night	Daily
Site Data				Auto	s: 72.4	% 9.2%	18.4%	85.65%
Barriar Hoight:	0.0 foot		м	edium Truck	s: 77.7	% 4.8%	17.5%	9.129
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Truck	is: 84.3	% 2.7%	13.0%	5.23%
Centerline Dist. to Barrier:	50.0 feet		Noise Se	ource Eleva	tions (in	feet)		
Centerline Dist. to Observer:	50.0 feet			Autos	0.000			
Barrier Distance to Observer:	0.0 feet		Mediu	m Trucks	2 297			
Observer Height (Above Pad):	5.0 feet		Heat	n Trucks	8 004	Grade Adi	iustment	: 0.0
Pad Elevation:	0.0 feet		nea	ry mucho.	0.004	,		
Road Elevation:	0.0 feet		Lane Eq	uivalent Dis	stance (ir	n feet)		
Road Grade:	0.0%			Autos:	30.414			
Left View:	-90.0 degree	IS .	Mediu	m Trucks:	30.122			
Right View:	90.0 degree	is	Hear	vy Trucks:	30.150			
FHWA Noise Model Calculatio	ns		1					
VehicleType REMEL	Traffic Flow	Distance	Finite	Road F	resnel	Barrier Atte	en Ber	m Atten
Autos: 66.5	1 3.47	3	.14	-1.20	-4.6	5 0.0	000	0.00
Medium Trucks: 77.7	2 -6.26	3	.20	-1.20	-4.8	7 0.0	000	0.00
Heavy Trucks: 82.9	9 -8.68	3	.19	-1.20	-5.4	3 0.0	000	0.00
Unmitigated Noise Levels (wit	hout Topo and I	barrier atte	enuation)					
VehicleType Leq Peak H	our Leq Day	Leq	Evening	Leq Nigi	ht	Ldn	CI	NEL
Autos:	1.9	70.1	67.1		65.4	72.7	7	73.
Medium Trucks:	3.5	71.9	65.8		66.7	74.1	1	74.
Heavy Trucks:	6.3	75.1	66.2		68.3	76.2	2	76.
Vehicle Noise:	9.1	77.7	71.2		71.7	79.4	ŀ	79.
Centerline Distance to Noise	Contour (in feet)			r				
		7	0 dBA	65 dBA	1	60 dBA	55	dBA
		Ldn:	211		455	979		2,110
	CNEL:				217 467 1,006			

	FHWA-R	D-77-108 HIGP	IVVAT	OISE	PREDIC		ODEL	9/12/2	021)		
Scenar	io: 2028 WP					Project	Name:	Irwinda	ale Gatewa	ay SP	
Road Nam	ne: Live Oak A	venue				Job N	umber:	15410			
Road Segme	nt: w/o I-605 S	B On-Ramp									
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	s	
Highway Data				S	Site Cond	ditions (Hard =	: 10, Se	oft = 15)		
Average Daily	Traffic (Adt):	38,896 vehicl	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Med	dium Tru	icks (2	Axles):	15		
Peak H	lour Volume:	3,575 vehicle	s		Hea	avy Truc	ks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		V	ehicle N	lix					
Near/Far La	ne Distance:	80 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.49	6 85.55%
Ba	rrier Heiaht:	0.0 feet			Me	dium Tr	ucks:	77.7%	4.8%	17.5%	6 9.08%
Barrier Type (0-W	Vall, 1-Berm):	0.0			H	leavy Tr	ucks:	84.3%	2.7%	13.0%	6 5.37%
Centerline Di	ist. to Barrier:	50.0 feet		Δ	loise So	urce Ele	evation	s (in f	eet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	. 0	000			
Barrier Distance	to Observer:	0.0 feet			Mediun	n Trucks	. 2	.297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks		004	Grade Ad	ljustmer	nt: 0.0
P	ad Elevation:	0.0 feet		L.						-	
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos	:: 30	.414			
	Left View:	-90.0 degre	es		Mediun	n Trucks	:: 30	.122			
	Right View:	90.0 degre	es		Heav	y Trucks	:: 30	.150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier At	ten Be	erm Atten
Autos:	66.51	3.53		3.14	Ļ	-1.20		-4.65	0.	000	0.000
Medium Trucks:	77.72	-6.21		3.20)	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	82.99	-8.50		3.19)	-1.20		-5.43	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	r attenu	uation)						
VehicleType	Leq Peak Ho	ur Leq Da	/	Leq Ev	rening	Leq I	Vight		Ldn	(CNEL
Autos:	72	2.0	70.2		67.2		65.	4	72.	.8	73.1
Medium Trucks:	73	3.5	72.0		65.9		66.	8	74.	2	74.3
Heavy Trucks:	76	3.5	75.3		66.4		68.	5	76.	4	76.5
Vehicle Noise:	79	9.2	77.8		71.3		71.	8	79.	.5	79.7
Centerline Distant	ce to Noise C	ontour (in feel)								
				70 d	BA	65 0	1BA	(50 dBA	5	5 dBA
			Ldn:		215		463	3	99	7	2,147
		С	NEL:		221		475	5	1,024	4	2,205

	FHWA-R	D-77-108 HIGH	WAY N	NOISE	PREDIC	TION MC	DDEL (S	9/12/20)21)		
Scenar Road Nan Road Segme	rio: 2040 NP ne: Live Oak A nt: w/o I-605 S	venue SB On-Ramp			Project N Job Nu	lame: I mber: 1	rwinda 15410	le Gatewa	y SP		
SITE	SPECIFIC IN	PUT DATA				N	DISE N	IODE		s	
Highway Data				S	ite Con	ditions (I	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	51,151 vehicl	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	cks (2 A	(xles):	15		
Peak H	lour Volume:	4,701 vehicle	s		He	avy Truck	ks (3+ A	(xles):	15		
Ve	ehicle Speed:	40 mph		v	ehicle	Mix					
Near/Far La	ne Distance:	80 feet		F	Veh	icleType		Day	Evening	Night	Daily
Site Data						AL	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			М	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		٨	loise So	ource Ele	vations	s (in fe	et)		
Centerline Dist.	to Observer:	50.0 feet				Autos:	0.0	000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	vy Trucks:	8.0	004	Grade Adj	iustment	0.0
P	ad Elevation:	0.0 feet		-	_				-		
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent L	Distanc	e (in f	eet)		
	Road Grade:	0.0%				Autos:	30.4	414			
	Left View:	-90.0 degre	es		Mediu	m Trucks:	30.	122			
	Right View:	90.0 degre	es		Heav	/y Trucks:	30.	150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el i	Barrier Atte	en Ber	m Atten
Autos:	66.51	4.72		3.14	Ļ	-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-5.00		3.20)	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-7.42		3.19)	-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	r attenı	uation)						
VehicleType	Leq Peak Ho	ur Leq Daj	/	Leq Ev	ening	Leq N	light		Ldn	CI	VEL
Autos:	73	3.2	71.3		68.4		66.6		74.0)	74.3
Medium Trucks:	74	4.7	73.2		67.1		68.0		75.4	1	75.6
Heavy Trucks:	77	7.6	76.4		67.4		69.5		77.5	5	77.6
Vehicle Noise:	80).3	78.9		72.4		73.0		80.6	3	80.8
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 d	BA	65 di	BA	6	0 dBA	55	dBA
			Ldn:		256		551		1,187		2,558
	CNEL:				263 566 1,219					2,627	

			_								
Scenario: 2040 WF						Projec	t Name:	Irwind	ale Gatewa	iy SP	
Road Name: Live Oak	Avenue					Job I	Vumber:	15410			
Road Segment: w/o I-605	SB On-F	lamp									
SITE SPECIFIC	INPUT I	DATA				1	NOISE	MODE	EL INPUT	S	
Highway Data					Site Con	ditions	(Hard :	= 10, S	oft = 15)		
Average Daily Traffic (Adt)	51,724	vehicle	es					Autos	15		
Peak Hour Percentage	9.19	%			Me	dium T	rucks (2	Axles)	15		
Peak Hour Volume	4,753	vehicles	5		He	avy Tru	ıcks (3+	Axles)	: 15		
Vehicle Speed	40	mph			Vehicle I	Mix					
Near/Far Lane Distance	80	feet			Veh	icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	72.49	6 9.2%	18.4%	85.58
Barrier Height	0.0) feet			Me	edium 1	Trucks:	77.79	6 4.8%	17.5%	9.09
Barrier Type (0-Wall, 1-Berm)	: 0.0)			ŀ	leavy 1	Frucks:	84.3%	6 2.7%	13.0%	5.339
Centerline Dist. to Barrier	50.0) feet			Noiso Sc		lovatio	ne (in f	ootl		
Centerline Dist. to Observer	50.0) feet			NUISE SU	Auto		000	eelj		
Barrier Distance to Observer	0.0) feet			Mediu	m Truc	73. U	207			
Observer Height (Above Pad)	5.0) feet			Heav	v Truck	ks: 8	004	Grade Ad	iustmen	t: 0.0
Pad Elevation	0.0) feet			mour	<i>y</i> ao.				,	
Road Elevation	0.0) feet			Lane Eq	uivalen	t Distar	ice (in	feet)		
Road Grade	0.0%	•				Auto	os: 30	.414			
Left View	-90.0) degree	es		Mediu	m Truci	ks: 30	.122			
Right View	90.0) degree	es		Heav	y Truci	KS.' 30	.150			
FHWA Noise Model Calculation	ons										
VehicleType REMEL	Traffic	: Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos: 66.	51	4.77		3.	14	-1.20		-4.65	0.	000	0.00
Medium Trucks: 77.	2	-4.97		3.3	20	-1.20		-4.87	0.	000	0.00
Heavy Trucks: 82.	99	-7.29		3.	19	-1.20		-5.43	0.	000	0.00
Unmitigated Noise Levels (wi	thout To	po and	barri	er atte	nuation)						
VehicleType Leq Peak H	our l	Leq Day	r -	Leq E	evning	Leq	Night		Ldn	C	NEL
Autos:	73.2		71.4		68.4		66	.7	74.	D	74
Medium Trucks:	74.7		73.2		67.1		68	.0	75.	4	75.
Heavy Trucks:	77.7		76.5		67.6		69	.7	77.	6	77.
Vehicle Noise:	80.4		79.0		72.5		73	.1	80.	7	80.
Centerline Distance to Noise	Contour	(in feet))								
				70	dBA	65	dBA		60 dBA	55	5 dBA
			Ldn:		259		55	В	1,203	1	2,592
		~			000				4 007		2 661

Monday, June 26, 2023

	FHWA-RD	-77-108 HIGH\	VAY N	OISE	PREDIC		IODEL	(9/12/2	021)			
Scenario	E Live Oak A:	100110				Project	Name:	Irwind	ale Gate	way S	P	
Road Seamen	t: e/o Graham	Road				JOD N	umber.	15410				
SITE S				1				MODE		Te		
Highway Data	PECIFIC IN	PUIDAIA		1	Site Con	ditions	(Hard :	= 10, S	oft = 15)	13		
Average Daily 1 Peak Hour F Peak Ho	raffic (Adt): Percentage: our Volume:	16,505 vehicle: 9.19% 1,517 vehicles	8		Me He	dium Tri avy Tru	ucks (2 cks (3+	Autos: Axles): Axles):	15 15 15			
Veh	icle Speed:	40 mph			Vehicle I	Mix						
Near/Far Lan	e Distance:	80 feet		H	Veh	icleTvpe		Dav	Evenin	a N	aht	Dailv
Site Data						,	Autos:	72.4%	6 9.2	% 1	8.4%	85.65%
Barrier Type (0-Wa	rier Height: all. 1-Berm):	0.0 feet 0.0			M	edium T Heavy T	rucks: rucks:	77.7% 84.3%	6 4.89 6 2.79	%1 %1	7.5% 3.0%	9.12% 5.23%
Centerline Dis	t. to Barrier:	50.0 feet			Noico Se	urco El	ovatio	ne (in f	oof)			
Centerline Dist. to Barrier Distance to Observer Height (A	o Observer: o Observer: Above Pad): d Elevation:	50.0 feet 0.0 feet 5.0 feet		_	Mediu Heav	Auto m Truck ry Truck	s: (s: 2 s: 8	.000 .297 .004	Grade /	Adjust	ment	0.0
Roa	d Elevation:	0.0 feet		1	Lane Eq	uivalen	Distar	nce (in	feet)			
R	oad Grade:	0.0%				Auto	s: 30	.414	,			
	Left View: Right View:	-90.0 degree 90.0 degree	6		Mediu Heav	m Truck ry Truck	s: 30 s: 30).122).150				
FHWA Noise Mode	Calculations											
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres	nel	Barrier /	Atten	Ber	m Atten
Autos:	66.51	-0.19		3.1	4	-1.20		-4.65		0.000		0.00
Medium Trucks:	77.72	-9.92		3.2	0	-1.20		-4.87		0.000		0.00
Heavy Trucks:	82.99	-12.33		3.1	9	-1.20		-5.43		0.000		0.00
Unmitigated Noise	Levels (witho	out Topo and b	arrier	atten	uation)			_				
VehicleType I	Leq Peak Hou	r Leq Day	L	.eq Ei	vening	Leq	Night	_	Ldn		CI	VEL
Autos: Madium Truakai	68.	.3 6	0.4		63.5		61	./	6 7	9.1		69. 70
Medium Trucks:	69. 70	.8 0	0.3		62.2		03	.1 e	7	0.5		70.
Vehicle Noise	75	./ / 4 7	1.5		67.5		68	.0	7	2.0 5.7		72.
			1.0		07.0		00			0.1		
Centerline Distance	e to Noise Co	ntour (in feet)		70 (- BA	65	dBA		60 dBA		55	dBA
		1	dn:		120	00	25	9	5 5	58	50	1.203
		CN	EL:		120		26	6	5	74		1.236
									-			,

	FHWA-RI	D-77-108 HIGH	WAY N	DISE	PREDIC		ODEL (9/12/2	021)		
Scenar	io: EP					Project	Name:	Irwinda	ale Gatewa	ay SP	
Road Nam	ne: Live Oak A	venue				Job Ni	umber:	15410			
Road Segme	nt: e/o Grahar	n Road									
SITE	SPECIFIC IN	NPUT DATA				N	OISE I	NODE	L INPUT	S	
Highway Data				S	ite Con	ditions ((Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	17,648 vehicle	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	icks (2 /	Axles):	15		
Peak H	lour Volume:	1,622 vehicles	S		He	avy Truc	ks (3+7	Axles):	15		
Ve	hicle Speed:	40 mph		v	ehicle l	Nix					
Near/Far La	ne Distance:	80 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.49	% 84.80%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5	% 9.07%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.09	% 6.13%
Centerline Di	st. to Barrier:	50.0 feet		N	loise So	urce Ele	evation	s (in f	eet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	. 0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	n Trucks	2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks		004	Grade Ad	liustmei	nt: 0.0
P	ad Elevation:	0.0 feet			neav	y macks	. 0.	004		,	
Ro	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos	: 30.	414			
	Left View:	-90.0 degree	es		Mediur	n Trucks	: 30.	122			
	Right View:	90.0 degree	es		Heav	y Trucks	30.	150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr	nel	Barrier Att	ten B	erm Atten
Autos:	66.51	0.06		3.14		-1.20		-4.65	0.	000	0.000
Medium Trucks:	77.72	-9.65		3.20)	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	82.99	-11.35		3.19)	-1.20		-5.43	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	attenu	uation)						
VehicleType	Leq Peak Ho	ur Leq Day	′ L	eq Ev	ening	Leq I	Vight		Ldn	(CNEL
Autos:	68	3.5	66.7		63.7		62.0)	69.	3	69.6
Medium Trucks:	70	0.1	68.5		62.4		63.3	3	70.	7	70.9
Heavy Trucks:	73	3.6	72.5		63.5		65.6	3	73.	6	73.7
Vehicle Noise:	76	6.1	74.7		68.0		68.7	7	76.	3	76.5
Centerline Distant	ce to Noise C	ontour (in feet,)								
				70 d	BA	65 0	1BA	(60 dBA	5	5 dBA
			Ldn:		132		285		615	5	1,324
		CI	NEL:		136		293		631		1,359

	FHWA-R	D-77-108 HIGH	IWAY N	IOISE	PREDIC	TION MO	DDEL (S	9/12/2	021)		
Scenar Road Nan	io: 2028 NP ne: Live Oak A	venue				Project I Job Nu	Vame: I Imber: 1	rwinda 15410	ale Gatewa	y SP	
Road Segme	nt: e/o Grahar	n Road									
SITE	SPECIFIC IN	NPUT DATA				N	OISE N	IODE	L INPUT	5	
Highway Data				S	Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	28,756 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 A	(xles):	15		
Peak H	lour Volume:	2,643 vehicle	s		He	avy Truc	ks (3+ A	(xles):	15		
Ve	hicle Speed:	40 mph		v	/ehicle I	<i>lix</i>					
Near/Far La	ne Distance:	80 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	ucks:	84.3%	2.7%	13.0%	5.23%
Centerline Di	st. to Barrier:	50.0 feet		٨	loise So	urce Ele	vations	s (in fe	eet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	justment	: 0.0
P	ad Elevation:	0.0 feet		,	ano Equ	inalant	Dictor	o (in	foot		
Ro	ad Elevation:	0.0 teet		-	ane Equ	Autoo	Distant	e (m)	ieel)		
	Road Grade:	0.0%	~~		Madiu	n Trucks	. 30.4	+14			
	Right View.	-90.0 degre	85 85		Heav	v Trucks	: 30. : 30.	150			
		00.03									
FHWA Noise Mod	el Calculation	S	0.1		-		_				
Venicie I ype	REMEL	I raffic Flow	Dista	ance	Finite	Road	⊦resn	ei	Barrier Atte	en Ber	m Atten
Autos. Medium Trucks:	77 72	2.22		3.14	+	-1.20		4.05	0.0	000	0.000
Heavy Trucks:	82.99	-9.92		3.10	, a	-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	a Lavala (with	out Tono and	horrior	otton	untion)						
VehicleType	Lea Peak Ho	ur Leg Da		l ea Ev	venina	l ea N	liaht		l dn	CI	NEI
Autos:	2097 00117101 7().7	68.8	209 21	65.9	2047	64.1		71.5	5	71.8
Medium Trucks:	72	2.2	70.7		64.6		65.5		72.9	9	73.1
Heavy Trucks:	75	5.1	73.9		64.9		67.0)	75.0)	75.1
Vehicle Noise:	77	7.8	76.4		69.9		70.5	i	78.1	1	78.3
Centerline Distan	ce to Noise C	ontour (in feet	9								
				70 d	IBA	65 d	BA	6	60 dBA	55	dBA
			Ldn:		174		375		809		1,742
		С	NEL:		179		386		831		1,789

Scenario	o: 2028 WP					Projec	t Nam	e: Irwind	ale Gatewa	ay SP	
Road Name	e: Live Oak Av	venue				Job I	Vumbe	er: 15410			
Road Segmen	nt: e/o Graham	n Road									
SITE S	SPECIFIC IN	PUT DATA				1	NOIS	E MODE	EL INPUT	S	
Highway Data				:	Site Con	ditions	: (Haro	d = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	29,899 vehicl	es					Autos	: 15		
Peak Hour I	Percentage:	9.19%			Me	dium T	rucks	(2 Axles)	: 15		
Peak He	our Volume:	2,748 vehicle	s		He	avy Tru	icks (3	+ Axles)	: 15		
Vel	hicle Speed:	40 mph		1	Vehicle I	Mix					
Near/Far Lar	ne Distance:	80 feet			Veh	icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos	72.49	6 9.2%	18.4%	85.15
Bar	rier Height:	0.0 feet			M	edium 1	Frucks	77.79	6 4.8%	17.5%	9.09
Barrier Type (0-Wa	all, 1-Berm):	0.0			1	leavy 1	rucks	: 84.3%	6 2.7%	13.0%	5.76
Centerline Dis	t. to Barrier:	50.0 feet			Noise So	ource E	levati	ons (in f	eet)		
Centerline Dist. t	to Observer:	50.0 feet		-		Auto	os:	0.000			
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Trucl	ks:	2.297			
Observer Height (/	Above Pad):	5.0 feet			Heav	y Truck	ks:	8.004	Grade Ad	ljustment	: 0.0
Pa	d Elevation:	0.0 feet		-			4 Di-4		6 43		
Roa	d Elevation:	0.0 feet		-	Lane Eq	uivaien	t Dist	ance (in	reet)		
F	Road Grade:	0.0%			Madiu	AUIO)S:	30.414			
	Len View:	-90.0 degre	es		Heav	v Truci	ts. ker	30.122			
	Right view.	90.0 degre	63		near	y maci		50.150			
FHWA Noise Mode	l Calculation	S									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fr	esnel	Barrier Att	en Ber	m Atten
Autos:	66.51	2.37		3.1	4	-1.20		-4.65	0.	000	0.00
Medium Trucks:	77.72	-7.35		3.2	0	-1.20		-4.87	0.	000	0.00
Heavy Trucks:	82.99	-9.33		3.1	9	-1.20		-5.43	0.	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	ier atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	70	.8	69.0		66.0		6	54.3	71.	6	71.
Medium Trucks:	72	.4	70.8		64.7		6	5.6	73.	0	73.
Heavy Trucks:	75	./	76.0		70.0		-	07.0	75.	5	75.
venicie Noise:	78	.2	76.8		70.2			0.8	78.	5	78.
Centerline Distanc	e to Noise Co	ontour (in feet)	70	10.4		-04		0.404		-10.4
			1 day	70 0	3BA 404	65	aBA	07	ou aBA	55	aBA 4.04
		0	LUII:		184		-	09/	850	, ,	1,844
		C			109		4	NO	0/5	,	1,694

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021) Project Name: Invindale Gateway SP Job Number: 15410 Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: e/o Graham Road SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Highway Data Average Daily Traffic (Adt): Peak Hour Percentage: Autos: 15 43,456 vehicles 9.19% Medium Trucks (2 Axles): 15 Peak Hour Volume: 3,994 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix Near/Far Lane Distance: 80 feet Day Evening Night Daily VehicleType
 Autos:
 72.4%
 9.2%
 18.4%
 85.65%

 Trucks:
 77.7%
 4.8%
 17.5%
 9.12%
 Site Data Medium Trucks: 77.7% Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.23% Centerline Dist. to Barrier: Centerline Dist. to Observer: 50.0 feet 50.0 feet Noise Source Elevations (in feet) Autos: 0,000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Grade Adjustment: 0.0 Heavy Trucks: 8.004 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 30.122 Road Grade: 0.0% Left View: -90.0 degrees 30 122 Right View: Heavy Trucks: 30.150 90.0 degrees FHWA Noise Model Calculations MEL Traffic Flow Distance Finite Road VehicleType REMEL Autos: 66 Barrier Atten Berm Atten Fresnel -4.65 0.000 0.000 -1.20 Medium Trucks: 77.72 -5.71 -4.87 3.20 0.000 0.000 Heavy Trucks: 82.99 -8.13 3.19 -1.20 -5.43 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) **эро ал.** Leq Day 70.6 VehicleType Leq Peak Hour CNEL Leq Evening 6 67.7 Leq Night Ldn 73.3 Autos 72.5 65.9 73.6 Medium Trucks: 74.0 72.5 67.3 66.4 74.7 74.8 Heavy Trucks: Vehicle Noise: 76.9 75.7 66.7 68.8 76.8 76.9 78.2 79.6 72.3 79.9 80.1 71.7 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA 2,294 Ldn: 229 494 1,065 CNEL: 236 508 1,094 2.357

	FHWA-RI	D-77-108 HIGHWA	AY NOISE	PREDIC	TION MC	DEL (9/12)	(2021)	
Scenar	rio: 2040 WP				Project N	lame: Irwin	dale Gateway	/ SP
Road Nan	ne: Live Oak A	venue			Job Nu	mber: 1541	0	
Road Segme	nt: e/o Grahan	n Road						
SITE	SPECIFIC IN	IPUT DATA			NC	DISE MOD	EL INPUTS	6
Highway Data				Site Con	ditions (H	lard = 10, 3	Soft = 15)	
Average Daily	Traffic (Adt):	44,599 vehicles				Auto	s: 15	
Peak Hour	Percentage:	9.19%		Me	dium Truc	ks (2 Axles	s): 15	
Peak I	lour Volume:	4,099 vehicles		He	avy Truck	s (3+ Axles	s): 15	
Ve	ehicle Speed:	40 mph	ŀ	Vehicle	Mix			-
Near/Far La	ane Distance:	80 feet	-	Veh	icleType	Dav	Evening	Night Daily
Site Data				10/1	AL	itos: 72.4	% 9.2%	18.4% 85.32%
0.10 2010		0.0.6		М	edium Tru	cks: 77.7	% 4.8%	17.5% 9.10%
Ba Rorrier Type (0 V	Vall 1 Borm)	0.0 reet			Heavv Tru	cks: 84.3	% 2.7%	13.0% 5.58%
Centerline D	ist to Parrier	0.0 50.0 foot			,			
Centerline Di	to Observer:	50.0 feet		Noise So	ource Ele	vations (in	feet)	
Parrier Distance	to Observer.	0.0 feet			Autos:	0.000		
Observer Height	(Above Rad):	5.0 feet		Mediu	m Trucks:	2.297		
	(ADOVE Fau).	5.0 feet		Heav	y Trucks:	8.004	Grade Adji	ustment: 0.0
r Bo	ad Elevation:	0.0 feet	ŀ	l ane Fo	uivalent l	Distance (ii	n feet)	
70	Bood Grade:	0.0 1001	ŀ	Lano Lq	Autos	30 414		
	Loft View:	0.0%		Mediu	m Trucks:	20 122		
	Dight View:	-90.0 degrees		Heat	n Trucks.	30.122		
	rught view.	50.0 degrees			<i>y maono.</i>	50.150		
FHWA Noise Mod	el Calculation	s						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	n Berm Atten
Autos:	66.51	4.11	3.1	4	-1.20	-4.6	5 0.0	00 0.000
Medium Trucks:	77.72	-5.61	3.2	20	-1.20	-4.8	7 0.0	00 0.000
Heavy Trucks:	82.99	-7.73	3.1	9	-1.20	-5.4	3 0.0	00 0.000
Unmitigated Nois	e Levels (with	out Topo and ba	rrier atter	nuation)				
VehicleType	Leg Peak Hou	ir Leq Day	Leq E	vening	Leq N	ight	Ldn	CNEL
Autos:	72	2.6 70.	.7	67.8		66.0	73.4	73.7
Medium Trucks:	74	.1 72.	.6	66.5		67.4	74.8	75.0
Heavy Trucks:	77	.3 76.	.1	67.1		69.2	77.2	77.3
Vehicle Noise:	79	0.9 78.	.5	71.9		72.5	80.2	80.3
Centerline Distan	ce to Noise Co	ontour (in feet)						
			70	dBA	65 dl	BA	60 dBA	55 dBA
		Ldi	n:	238		513	1,106	2,383
		CNE	L:	245		527	1,136	2,447

Monday, June 26, 2023

	FHWA-R	D-77-108 HIGH	WAY	NOISE I	PREDIC	TION MO	ODEL (S	9/12/2	021)		
Scenar	rio: E					Project I	Vame: I	rwinda	ale Gatewa	y SP	
Road Nan	ne: Live Oak A	venue				Job Nu	imber: 1	15410			
Road Segme	nt: w/o Riverg	rade Road									
SITE	SPECIFIC IN	NPUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				S	ite Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	18,226 vehicl	es				,	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 A	(xles):	15		
Peak H	lour Volume:	1,675 vehicle	s		He	avy Truci	ks (3+ A	(xles):	15		
Ve	ehicle Speed:	40 mph		v	ehicle l	Nix					
Near/Far La	ne Distance:	80 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	6 9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks:	77.7%	6 4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	ucks:	84.3%	6 2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	loise Sc	ource Ele	vations	s (in f	eet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediui	n Trucks	: 2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	004	Grade Adj	iustmen	t: 0.0
P	ad Elevation:	0.0 feet					D:	- /	f 4)		
Ro	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distanc	e (In	reet)		
	Road Grade:	0.0%			1 4	Autos.	: 30.4	114			
	Left View:	-90.0 degre	es		Mediui	TI TTUCKS	. 30.	122			
	Right view:	90.0 degre	es		neav	y mucks.	. 30.	150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	66.51	0.24		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-9.48		3.20	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-11.90		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrie	r attenu	uation)						
VehicleType	Leq Peak Ho	ur Leq Da	V	Leq Ev	ening	Leq N	light		Ldn	С	NEL
Autos:	68	3.7	66.9		63.9		62.2		69.5	5	69.8
Medium Trucks:	70	0.2	68.7		62.6		63.5		70.9	9	71.1
Heavy Trucks:	73	3.1	71.9		63.0		65.0		73.0)	73.1
Vehicle Noise:	75	5.8	74.4		68.0		68.5		76.2	2	76.3
Centerline Distan	ce to Noise C	ontour (in feet)								
			L	70 d	ВA	65 d	BA		60 dBA	55	dBA
		-	Ldn:		129		277		597		1,285
		С	NEL:		132		284		613		1,320

	THUANE			NOIDE				// TE/E	<u>, , , , , , , , , , , , , , , , , , , </u>		
Scenario	: EP					Project	Name: I	rwinda	ale Gatewa	y SP	
Road Name	: Live Oak Av	/enue				Job Ni	imber: 1	5410			
Road Segmen	t: w/o Rivergr	ade Road									
SITE S	PECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				s	Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily 1	raffic (Adt):	18,830 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Tru	cks (2 A	xles):	15		
Peak Ho	our Volume:	1,730 vehicle	s		He	avy Truc	ks (3+ A	xles):	15		
Veh	icle Speed:	40 mph		V	/ehicle l	Nix					
Near/Far Lar	e Distance:	80 feet			Veh	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.31
Ban	rier Height:	0.0 feet			M	edium Tr	ucks:	77.7%	4.8%	17.5%	9.079
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.62
Centerline Dis	t. to Barrier:	50.0 feet			loise Sr	urco Ele	vations	in f	oof)		
Centerline Dist. t	o Observer:	50.0 feet		-		Autos	· 00	000			
Barrier Distance t	o Observer:	0.0 feet			Mediu	n Trucks	: 2.2	97			
Observer Height (/	Above Pad):	5.0 feet			Heav	v Trucks	: 8.0	004	Grade Ad	iustment	: 0.0
Pa	d Elevation:	0.0 feet		_							
Roa	d Elevation:	0.0 feet		L	ane Eq	livalent	Distanc	e (in	leet)		
F	oad Grade:	0.0%				Autos	: 30.4	114			
	Left View:	-90.0 degree	es		Mediui	n Trucks	. 30.1	122			
	Right View:	90.0 degre	es		Heav	y Trucks	: 30.	150			
FHWA Noise Mode	Calculations	5									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	0.37		3.14	Ļ	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72	-9.37		3.20)	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-11.45		3.19)	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	ier attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	1	Leq Ev	rening	Leq I	light		Ldn	С	NEL
Autos:	68	.8	67.0		64.0		62.3		69.6	3	69
Medium Trucks:	70	.3	68.8		62.7		63.6		71.0)	71.
Heavy Trucks:	73	.5	72.4		63.4		65.5		73.5	5	73.
Vehicle Noise:	76	.1	74.8		68.2		68.8		76.4	1	76
Centerline Distanc	e to Noise Co	ntour (in feet)								
				70 d	BA	65 c	IBA	6	60 dBA	55	dBA
			Ldn:		134		289		624		1,343
			A 1 - 1 -						0.40		4 0 7 4

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021) Project Name: Irwindale Gateway SP Job Number: 15410 Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Highway Data Autos: 15 Average Daily Traffic (Adt): 27,955 vehicles Peak Hour Percentage: 9.19% Medium Trucks (2 Axles): 15 Peak Hour Volume: 2,569 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix Near/Far Lane Distance: 80 feet Day Evening Night Daily VehicleType
 Autos:
 72.4%
 9.2%
 18.4%
 85.65%

 Medium Trucks:
 77.7%
 4.8%
 17.5%
 9.12%
 Site Data Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.23% Centerline Dist. to Barrier: Centerline Dist. to Observer: 50.0 feet 50.0 feet Noise Source Elevations (in feet) Autos: 0,000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet 8.004 Grade Adjustment: 0.0 Heavy Trucks: Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 30.122 Road Grade: 0.0% Left View: -90.0 degrees Right View: Heavy Trucks: 30.150 90.0 degrees MEL Traffic Flow Distance Finite Road FHWA Noise Model Calculations VehicleType REMEL Autos: 66 Barrier Atten Berm Atten Fresnel -4.65 2.10 -7.63 0.000 0.000 Medium Trucks: 77.72 -1.20 3.20 -4.87 0.000 0.000 Heavy Trucks: 82.99 -10.05 3.19 -1.20 -5.43 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night 68.7 65.8 64 CNEL Ldn 71.4 71.7 Autos 70.5 64.0 Medium Trucks: 65.3 72.1 70.6 64.5 72.8 72.9 Heavy Trucks: Vehicle Noise: 74 0 73.8 64.8 66.9 74 9 75.0 77.7 76.3 69.8 78.0 78.2 70.4 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA 1,710 Ldn: 171 368 794 CNEL: 176 378 815 1,756

Scenario: 2028 WP Project Name: Invindale Gateway SP Job Number: 15410 Road Segment: wio Rivergrade Road Job Number: 15410 Highway Data Site SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Autos: 15 Average Daily Traffic (Adt): 28,559 vehicles Autos: 15 Vehicle Speed: 40 mph Peak Hour Volume: 2,625 vehicles Medium Trucks (2 Axles): 15 Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet Vehicle Type Dey Evening Night Dail Site Data Autos: 72.4% 9.2% 18.4% 85.4 Medium Trucks: 77.7% 4.8% 17.5% 9.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.4 Barrier Type (O-Walt, 1-Berrip: 0.0 Feet Noise Source Elevations (in feet) Noise Source Elevations (in feet) Centerline Dist. to Daserver: 0.0 feet Noise Model Calculations Over Source Elevations (in feet) Medium Trucks: 30.122 Road Elevation: 0.0 feet Road Elevation: 0.0 feet Medium Trucks: 30.122 Heavy Trucks: 30.150 FHWA Noise Model Calculations Over Source Elevations (in feet) Medium Trucks: 30.150 Elevation: 0.00 Medium Trucks: 66.51 2.18 3.14 -1.20 -6.5		FINANCE	-77-100 HIGH	WAI	NOISE	FREDIC		LL (9/12/2	2021)		
Road Name: Live Oak Avenue Job Number: 15410 Road Segment: wlo Rivergrade Road NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Autos:: 15 Average Daily Traffic (Adt): 28,559 vehicles Autos:: 15 Peak Hour Volume: 2,625 vehicles Autos:: 15 Vehicle Speed: 40 mph Wehicle Mix Vehicle Mix Near/Far Lane Distance: 80 feet Vehicle Mix Dail Site Data Autos: 72.4% 9.2% 18.4% 85.4 Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.0 Barrier Dist. to Darrier: 5.0 feet Medium Trucks: 0.0 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Centerline Dist. to Darrier: 0.0 feet Autos:: 30.414 Medium Trucks: 0.0 Road Grade: 0.0% Autos:: 30.122 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0%	Scenar	io: 2028 WP					Project Nar	ne: Irwind	lale Gatewa	iy SP	
Road Segment: wio Rivergrade Road SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 28,559 vehicles Autos: 15 Peak Hour Percentage: 9,19% Medium Trucks (2 Axles): 15 Vehicle Speed: 40 mph Heavy Trucks (3 Axles): 15 Vehicle Speed: 40 mph Vehicle Type Day Evening Night Dail Site Data Autos: 72.4% 9.2% 18.4% 84.3 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Moise Source Elevations (in feet) Medium Trucks: 7.7% 4.8% 17.5% 9.0 Barrier Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Noise Source Elevations (in feet) Medium Trucks: 2.297 Observer: 0.0 feet Road Grade: 0.0% Autos:: 30.414 Medium Trucks: 30.141 Road Grade: 0.0% Elevation: 0.0 earce Distance (in feet) <td>Road Nam</td> <td>e: Live Oak Av</td> <td>/enue</td> <td></td> <td></td> <td></td> <td>Job Numb</td> <td>er: 15410</td> <td>)</td> <td></td> <td></td>	Road Nam	e: Live Oak Av	/enue				Job Numb	er: 15410)		
SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 28,559 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,625 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet Vehicle Speed: 40 mph Barrier Height: 0.0 feet Barrier Height: 0.0 feet Barrier Height: 0.0 feet Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Diserver: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Vehicle Type REMEL	Road Segme	nt: w/o Rivergr	ade Road								
Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 28,559 vehicles Autos:: 15 Peak Hour Percentage: 9,19% Medium Trucks (24,24e): 15 Peak Hour Volume: 2,625 vehicles Medium Trucks (24,24e): 15 Vehicle Speed: 40 mph Mear/Far Lane Distance: 80 feet Vehicle Mix Site Data Autos:: 72,4% 9,2% 18,4% 85,4 Barrier Type (0-Wall, 1-Berm): 0.0 feet Medium Trucks: 27,7% 4,8% 17,5% 9.0 Barrier Type (0-Wall, 1-Berm): 0.0 feet Medium Trucks: 77,7% 4,8% 17,5% 9.0 Barrier Dist. to Doserver: 50.0 feet Medium Trucks: 2,287 13.0% 5.4 Observer Height (Above Pag): 5.0 feet Autos:: 30.414 Medium Trucks: 2,287 Pad Elevation: 0.0 feet Autos:: 30.414 Medium Trucks: 30.122 Heavy Trucks: 8.299 -9.74 3.19 -1.20 -4.65 0.000 0.0	SITE	SPECIFIC IN	PUT DATA				NOIS	SE MOD	EL INPUT	s	
Average Daily Traffic (Adt): 28,559 vehicles Autos:: 15 Peak Hour Opercentage: 9.19% Medium Trucks (2 Axles): 15 Peak Hour Opercentage: 9.19% Medium Trucks (2 Axles): 15 Vehicle Speed: 40 mph Medium Trucks (2 Axles): 15 Near/Far Lane Distance: 80 feet Vehicle Type Dey Evening Night Dail Barrier Type (0-Wall, 1-Berm): 0.0 Medium Trucks: 7.7% 4.8% 17.5% 9.0 Barrier Type (0-Wall, 1-Berm): 0.0 feet Medium Trucks: 0.00 Heavy Trucks: 84.3% 2.7% 13.0% 5.4 Centerline Dist. to Barrier: 5.0 feet Moles Source Elevations (in feet) Medium Trucks: 0.00 Barrier Distance to Observer: 0.0 feet Autos:: 30.41 Medium Trucks: 0.0 Road Elevation: 0.0 feet Autos:: 30.414 Medium Trucks: 0.0 Road Grade: 0.0% Distance Finite Road Fresnel Barrier Atten Berm Atten	Highway Data					Site Conc	litions (Ha	rd = 10, S	oft = 15)		
Peak Hour Volume: 2,625 vehicles Medium Trucks (2 Axles): 15 Vehicle Speed: 40 mph Heavy Trucks (3 Axles): 15 Site Data Vehicle Type Day Evening Night Dail Site Data Autos: 72.4% 9.2% 18.4% 85.4 Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.0% Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.0% Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Diserver: 0.0 feet Moise Source Elevations (in feet) Medium Trucks: 77.7% 4.8% 17.5% 9.0% Barrier Distance to Diserver: 0.0 feet Autos: 0.000 Medium Trucks: 0.00 Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 30.141 Medium Trucks: 77.7 7.75 3.20 -1.20 -4.65 0.000 0.0 Heavy Trucks:	Average Daily	Traffic (Adt):	28,559 vehicle	es				Autos	: 15		
Peak Hour Volume: 2,625 vehicles Vehicle Speed: Heavy Trucks (3+ Axles): 15 Vehicle Speed: 40 mph Vehicle Mix Day Evening Night Dail Site Data Autos: 72.4% 9.2% 18.4% 85.4 Barrier Height: 0.0 feet Autos: 72.4% 9.2% 18.4% 85.4 Barrier Type (0-Wail, 1-Berm): 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.4 Centerline Dist. to Barrier: 50.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.0 Barrier Dist. to Observer: 50.0 feet Noise Source Elevations (in feet) Noise Source Elevations (in feet) Noise Source 0.000 Medium Trucks: 2.37 13.0% 5.4 Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 30.414 Left View: -90.0 degrees Medium Trucks: 30.122 Heavy Trucks: 30.122 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -4.65 0.000 0.0	Peak Hour	Percentage:	9.19%			Mea	lium Trucks	(2 Axles)	: 15		
Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet Vehicle Mix Site Data Autos: 72.4% 9.2% 18.4% 85.4% Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.0% Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.4 Centerline Dist. to Barrier: 50.0 feet Moise Source Elevations (in feet) Constraint 0.0 Centerline Dist. to Deserver: 0.0 feet Autos: 0.04 Grade Adjustment: 0.0 Barrier Distance to Observer: 0.0 feet Medium Trucks: 0.04 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 0.00 Road Grade: 0.0% Autos: 30.122 Heavy Trucks: 30.150 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 66.51 2.18 3.14 -1.20 -4.65	Peak H	lour Volume:	2,625 vehicle	s		Hea	wy Trucks	(3+ Axles)	: 15		
Near/Far Lane Distance: 80 feet VehicleType Day Evening Night Dail Site Data Autos: 72.4% 9.2% 18.4% 85.4 Barrier Height: 0.0 feet Medum Trucks: 77.7% 4.8% 17.5% 9.0 Barrier Type (0-Wall, 1-Berm): 0.0 0 Heavy Trucks: 84.3% 2.7% 13.0% 5.4 Centerline Dist to Barrier: 50.0 feet Moise Source Elevations (in feet) Moise Source Elevations (in feet) Medium Trucks: 2.297 Observer: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 8.004 Grade Adjustment: 0.00 0.0 Keitole Type REIMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Bern Atten Autos: 77.72	Ve	hicle Speed:	40 mph		1	/ehicle M	lix				
Site Data Autos: 72.4% 9.2% 18.4% 85.4 Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.0 Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 87.7% 13.0% 5.4 Centerline Dist. to Barrier: 50.0 feet Moise Source Elevations (in feet) 18.4% 85.4 Observer Height (Above Pad): 5.0 feet Autos: 0.000 Medium Trucks: 2.2% 18.4% 9.2% 18.4% 85.4 Observer Height (Above Pad): 5.0 feet Autos: 0.000 Medium Trucks: 2.287 13.0% 5.4 Observer Height (Above Pad): 5.0 feet Autos: 30.41 Heavy Trucks: 30.12 Road Grade: 0.0% Left View: 90.0 degrees Heavy Trucks: 30.122 Heavy Trucks: 82.99 -9.74 3.14 -1.20 -4.65 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0	Near/Far La	ne Distance:	80 feet		F	Vehic	leType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Barrier Distance to Observer: 50.0 feet Barrier Distance to Observer: 50.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -9.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations Distance to 651 VehicleType REMEL Traffic Flow VehicleType REMEL Traffic Flow VehicleType REMEL Traffic Flow VehicleType RelwetL Traffic Flow VehicleType RelwetL Traffic Flow VehicleType RelwetL Traffic Flow VehicleType Leqt Vibutt Topo and barrier attenuation) VehicleType Leqt Peak Hour Leqt Evening VehicleType Relwet Mour Leqt Evening VehicleType Relwet Mour Leqt Evening VehicleType Relwethour	Site Data						Auto	s: 72.49	% 9.2%	18.4%	85.42%
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.4 Centerline Dist. to Barrier: 50.0 feet Noise Source Elevations (in feet) Autos: 0.000 Barrier Dist. to Observer: 0.0 feet Autos: 0.000 Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Autos: 0.00 feet Autos: 0.000 Road Elevation: 0.0 feet Autos: 30.414 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Medium Trucks: 30.414 Road Crade: 0.0% Autos: 30.122 Heavy Trucks: 30.150 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 66.51 2.18 3.14 -1.20 -4.67 0.000 0.0 Medium Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Vehicle Ty	Ba	rrier Height	0.0 feet			Me	dium Truck	s: 77.79	% 4.8%	17.5%	9.09%
Centerline Dist. to Barrier: 50.0 feet Noise Source Elevations (in feet) Centerline Dist. to Observer: 50.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Deserver Height (Above Pag): 5.0 feet Autos: 0.000 Pad Elevation: 0.0 feet Medium Trucks: 2.297 Road Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Cirade: 0.0% Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 8.004 Grade Adjustment: 0.0 0.0 eet FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Bern Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1	Barrier Type (0-W	/all, 1-Berm):	0.0			н	eavy Truck	s: 84.39	% 2.7%	13.0%	5.49%
Centerline Dist. to Observer: 50.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Meavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Lane Equivalent Distance (in feet) Road Grade: 0.0% Autos: 30.144 Medium Trucks: 30.122 Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.87 0.000 0.0 Medium Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Immitigated Noise Levels (without Topo and barrier attenuation) Leq Night Ldn CNEL Vehicle T	Centerline Di	st. to Barrier:	50.0 feet		-	Voise So	urce Eleva	tions (in t	feet)		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Pad Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Left View: -90.0 degrees Autos: 30.414 Left View: -90.0 degrees Medium Trucks: 30.122 Heavy Trucks: 30.122 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berrier Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Medium Trucks: 72.2 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7	Centerline Dist.	to Observer:	50.0 feet		ŀ	10.00 00.	Autos:	0.000			
Observer Height (Above Pad): 5.0 feet Intervention Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Autos: 30.414 Medium Trucks: 30.0122 Heavy Trucks: 30.122 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Berm Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Heavy Trucks: 72.2 7.06 64.5 65.4 72.8 7 Medium Trucks: 72.2 70.6	Barrier Distance	to Observer:	0.0 feet			Madium	Trucker	2 207			
Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Calculation: 0.0 feet Lane Equivalent Distance (in feet) Road Calculation: 90.0 degrees Heavy Trucks: 30.141 Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.87 0.000 0.0 Medium Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Night Ldn CNEL Vehicle Type Leq Peak Hour Leq Revening Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Vehicle Type Leq Peak Hour Leq Evening Leq Night Zdn Zn Vehicle Noise: 72.2 70.6 64.5	Observer Height ((Above Pad):	5.0 feet			Heave	Trucks:	2.237	Grade Ad	iustment	.00
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0% Autos: 30.414 Left View: -90.0 degrees Autos: 30.414 Heavy Trucks: 30.122 Heavy Trucks: 30.150 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berrier Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.65 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Peak Hour Leq Deay Leq Right Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 <t< td=""><td>Pa</td><td>ad Elevation:</td><td>0.0 feet</td><td></td><td>L</td><td>Tieavy</td><td>TTUCKS.</td><td>0.004</td><td>0,000,10</td><td>Juotimoni</td><td>. 0.0</td></t<>	Pa	ad Elevation:	0.0 feet		L	Tieavy	TTUCKS.	0.004	0,000,10	Juotimoni	. 0.0
Road Grade: 0.0% Autos: 30.414 Left View: 90.0 degrees Medium Trucks: 30.122 FHWA Noise Model Calculations Heavy Trucks: 30.150 Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Bern Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.67 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Ummitgated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 <td>Roa</td> <td>ad Elevation:</td> <td>0.0 feet</td> <td></td> <td>1</td> <td>ane Equ</td> <td>ivalent Dis</td> <td>tance (in</td> <td>feet)</td> <td></td> <td></td>	Roa	ad Elevation:	0.0 feet		1	ane Equ	ivalent Dis	tance (in	feet)		
Left View: -90.0 degrees Medium Trucks: 30.122 Right View: 90.0 degrees Heavy Trucks: 30.122 FHWA Noise Model Calculations Heavy Trucks: 30.150 Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.67 0.000 0.0 Medium Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Right Ldn CNEL Vehicle Type Leq Peak Hour Leq Devining Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 <td< td=""><td></td><td>Road Grade:</td><td>0.0%</td><td></td><td></td><td></td><td>Autos:</td><td>30.414</td><td></td><td></td><td></td></td<>		Road Grade:	0.0%				Autos:	30.414			
Right View: 90.0 degrees Heavy Trucks: 30.150 FHWA Noise Model Calculations Finite Road Fresnel Barrier Atten Berner Atten Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.87 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Umnitigated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leq Peak Hour Leq Dey Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 <td></td> <td>Left View:</td> <td>-90.0 degree</td> <td>es</td> <td></td> <td>Medium</td> <td>n Trucks:</td> <td>30.122</td> <td></td> <td></td> <td></td>		Left View:	-90.0 degree	es		Medium	n Trucks:	30.122			
EHWA Noise Model Calculations Image: Constraint of the image: Constrainton image:		Right View:	90.0 degre	es		Heavy	/ Trucks:	30.150			
VehicleType REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Bern Atte Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.67 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Ummitgated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leq Peak Hour Leq Dey Leq Evening Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	FHWA Noise Mode	el Calculations	5								
Autos: 66.51 2.18 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.87 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	VehicleType	REMEL	Traffic Flow	Dis	stance	Finite F	Road F	resnel	Barrier Att	en Ber	m Atten
Medium Trucks: 77.72 -7.55 3.20 -1.20 -4.87 0.000 0.0 Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL Vehicle Type Leq Peak Hour Leq Day Leq Evening 64.1 71.4 7 Medium Trucks: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	Autos:	66.51	2.18		3.14	4	-1.20	-4.65	0.0	000	0.000
Heavy Trucks: 82.99 -9.74 3.19 -1.20 -5.43 0.000 0.0 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Evening Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	Medium Trucks:	77.72	-7.55		3.20	D	-1.20	-4.87	0.0	000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	Heavy Trucks:	82.99	-9.74		3.19	9	-1.20	-5.43	0.0	000	0.000
Vehicle Type Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	Unmitigated Noise	e Levels (with	out Topo and	barrie	er atten	uation)					
Autos: 70.6 68.8 65.8 64.1 71.4 7 Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	VehicleType	Leq Peak Hou	r Leq Day	'	Leq E	/ening	Leq Nigl	nt	Ldn	C	NEL
Medium Trucks: 72.2 70.6 64.5 65.4 72.8 7 Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	Autos:	70	.6	68.8		65.8		64.1	71.4	4	71.7
Heavy Trucks: 75.2 74.1 65.1 67.2 75.2 7 Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	Medium Trucks:	72	.2	70.6		64.5		65.4	72.	В	73.0
Vehicle Noise: 77.9 76.5 70.0 70.5 78.2 7	Heavy Trucks:	75	.2	74.1		65.1		67.2	75.	2	75.3
	Vehicle Noise:	77	.9	76.5		70.0		70.5	78.	2	78.4
Centerline Distance to Noise Contour (in feet)	Centerline Distant	ce to Noise Co	ntour (in feet)							
70 dBA 65 dBA 60 dBA 55 dBA					70 c	iBA	65 dBA		60 dBA	55	dBA
Ldn: 176 379 817 1,7				Ldn:		176		379	817		1,760
CNEL: 181 389 839 1,8			C	NEL:		181		389	839)	1,807

Monday, June 26, 2023

	FHWA-R	D-77-108 H	GHWA	Y NOISI	E PREDI		DEL (9/	12/2021)			
Scena Road Nan Road Segme	rio: 2040 NP ne: Live Oak A ent: w/o Riverg	venue rade Road				Project N Job Nu	lame: Irv mber: 15	vindale Gate 5410	eway SF	>	
SITE	SPECIFIC II	NPUT DAT	A			NC	DISE MO	ODEL INP	UTS		
Highway Data					Site Cor	nditions (H	lard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt):	39,630 vel	nicles				AL	utos: 15			
Peak Hour	Percentage:	9.19%			Me	edium Truc	ks (2 Ax	les): 15			
Peak I	Hour Volume:	3,642 veh	cles		He	eavy Truck	s (3+ Ax	<i>les):</i> 15			
Ve	ehicle Speed:	40 mpł	n		Vehicle	Mix					
Near/Far La	ane Distance:	80 feet			Velicie	nicleType	D	av Eveni	na Nic	abt	Daily
Site Data					101	AL	itos: 7	2.4% 9.2	2% 18	3.4%	85.65%
Ba	rrier Height	0.0 fee	d .		N	ledium Tru	cks: 7	7.7% 4.8	3% 17	.5%	9.12%
Barrier Type (0-V	Vall. 1-Berm):	0.0				Heavy Tru	cks: 8	4.3% 2.7	7% 13	3.0%	5.23%
Centerline D	ist. to Barrier:	50.0 fee	ŧ		Noise S	ource Elev	vations	(in foot)			
Centerline Dist.	to Observer:	50.0 fee	ŧ		110/30 0	Autos:	0.00	0			
Barrier Distance	to Observer:	0.0 fee	ŧ		Medii	im Trucks:	2.20	17			
Observer Height	(Above Pad):	5.0 fee	ŧ		Hea	vv Trucks:	8.00)4 Grade	Adiustr	nent:	0.0
P	ad Elevation:	0.0 fee	ŧ			<i>i) maono.</i>	0.00				
Ro	ad Elevation:	0.0 fee	ŧ		Lane Eq	uivalent L	Distance	(in feet)			
	Road Grade:	0.0%				Autos:	30.41	14			
	Left View:	-90.0 de	grees		Mediu	im Trucks:	30.12	22			
	Right View:	90.0 de	grees		Hea	vy Trucks:	30.15	50			
FHWA Noise Mod	lel Calculation	ıs									
VehicleType	REMEL	Traffic Flo	w D	istance	Finite	e Road	Fresnel	Barrier	Atten	Berm	1 Atten
Autos:	66.51	3	.61	3.	14	-1.20	-4	1.65	0.000		0.000
Medium Trucks:	77.72	-6	.11	3.	20	-1.20	-4	1.87	0.000		0.000
Heavy Trucks:	82.99	-8	.53	3.	19	-1.20	-5	5.43	0.000		0.000
Unmitigated Nois	e Levels (with	nout Topo a	nd barr	ier atte	nuation)					-	
VehicleType	Leq Peak Ho	ur Leq	Day	Leq E	Evening	Leq N	ight	Ldn		CNI	EL
Autos:	72	2.1	70.2		67.3	3	65.5		72.9		73.2
Medium Trucks:	73	3.6	72.1		66.0)	66.9		74.3		74.4
Heavy Trucks:	70	6.5	75.3		66.3	3	68.4		76.4		76.5
Vehicle Noise:	79	9.2	77.8		71.3	3	71.9		79.5		79.7
Centerline Distan	ce to Noise C	ontour (in f	eet)	I		1			1		
				70	dBA	65 dl	BA	60 dBA		55 d	BA
			Ldn:		216		465	1,	001		2,157
			CNEL:		222		477	1,	029		2,216

Road Nam	, ∠u⊶u wr a: Live Oak Au					Ioh N	umber: 1	5/10	ale GaleWa	y or	
Road Segmen	t: w/o Riverara	ade Road				300 W	unibel.	J4 IU			
SITE S						N		IODE		s	
Highway Data				5	Site Con	ditions	(Hard =	10, Sc	oft = 15)	•	
Average Daily 1	raffic (Adt):	40,234 vehicle	s					Autos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Tru	ucks (2 A	xles):	15		
Peak Ho	our Volume:	3,697 vehicles	6		He	avy Truc	cks (3+ A	xles):	15		
Veh	icle Speed:	40 mph		1	/ehicle	Mix					
Near/Far Lar	e Distance:	80 feet		F	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	Autos:	72.4%	9.2%	18.4%	85.49
Bar	rier Heiaht:	0.0 feet			M	edium Ti	ucks:	77.7%	4.8%	17.5%	9.109
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Ti	rucks:	84.3%	2.7%	13.0%	5.419
Centerline Dis	t. to Barrier:	50.0 feet			Voise Sr	urce Fl	evations	: (in f	pet)		
Centerline Dist. t	o Observer:	50.0 feet		ŕ	10/30 00	Auto	s' 0 (000			
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck	s. 0.0	997			
Observer Height (A	Above Pad):	5.0 feet			Heav	v Truck	s: 8.0	004	Grade Ad	iustment	: 0.0
Pa	d Elevation:	0.0 feet		L		,					
Roa	d Elevation:	0.0 feet		1	ane Eq	uivalent	Distanc	e (in	feet)		
F	oad Grade:	0.0%				Autos	s: 30.4	414			
	Left View:	-90.0 degree	S		Mediui	m Trucks	s: 30.1	122			
	Right View:	90.0 degree	S		Heav	y Truck	s.' 30.'	150			
FHWA Noise Mode	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	66.51	3.67		3.14	4	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72	-6.06		3.20	D	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-8.31		3.19	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and	barri	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	'	Leq Ev	/ening	Leq	Night		Ldn	C	NEL
Autos:	72.	.1	70.3		67.3		65.6		72.9	9	73.
Medium Trucks:	73.	./	/2.1		66.0		66.9		74.3	5	74.
Heavy Trucks:	76.	.1	15.5		500.5		58.6		76.6	7	76.
venicie Noise:	79.	.3	78.0		/1.4		72.0		79.	1	79.
Centerline Distanc	e to Noise Co	ntour (in feet,)	70 -	ID A	65	AD A		O dBA	55	dBA
			I dn'	100	IDA 222	05 (UDA 475	e	1 000	55	UBA 2 001
			Lun:		220		4/5		1,022		2,202

	FHWA-RD	-77-108 HIGH	NAY NO	DISE F	PREDIC	TION MC	DDEL (9/12/20	021)		
Scenari Road Nam Road Segmer	o: E e: Live Oak Av nt: w/o Stewart	enue Avenue				Project I Job Nu	lame: mber:	Irwinda 15410	ile Gatewa	ay SP	
SITE	SPECIFIC INI	PUT DATA				N	DISE	MODE		S	
Highway Data				SI	te Con	ditions (I	Hard =	10, SC	oft = 15)		
Average Daily	Traffic (Adt):	18,385 vehicle	s					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium True	cks (27	Axles):	15		
Peak H	our Volume:	1,690 vehicles			не	avy Iruci	(S (3+)	4xies):	15		
Vei	hicle Speed:	45 mph		Ve	ehicle l	Mix					
Near/Far Lai	ne Distance:	80 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Bar	rier Height:	0.0 feet			M	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			1	Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	50.0 feet		N	oise So	ource Ele	vation	s (in fe	eet)		
Centerline Dist.	to Observer:	50.0 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 Ad	ljustment	: 0.0
Pa	d Elevation:	0.0 feet		1.	ano Ea	uivalont	Dictor	co (in i	foot)		
Roa	a Elevation:	0.0 feet		La	ше сч	Autoo	20	44 A	eey		
r	toau Graue.	0.0%	_		Modiu	m Trucks	20.	414			
	Right View:	90.0 degree	s		Heav	y Trucks.	30.	150			
FHWA Noise Mode	Calculations										
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresr	nel	Barrier Att	en Bei	rm Atten
Autos:	68.46	-0.23		3.14		-1.20		-4.65	0.	000	0.000
Medium Trucks:	79.45	-9.96		3.20		-1.20		-4.87	0.	000	0.000
Heavy Trucks:	84.25	-12.38		3.19		-1.20		-5.43	0.	000	0.000
Unmitigated Noise	Levels (witho	ut Topo and I	oarrier a	attenu	ation)						
VehicleType	Leq Peak Hour	Leq Day	L	eq Eve	ening	Leq N	light		Ldn	C	NEL
Autos:	70.3	2 (68.3		65.4		63.6	5	71.	0	71.3
Medium Trucks:	71.	5 7	70.0		63.9		64.3	7	72.	2	72.3
Heavy Trucks:	73.9	9 7	2.7		63.7		65.8	3	73.	8	73.9
Vehicle Noise:	76.9	9 7	75.5		69.2		69.6	5	77.	2	77.4
Centerline Distanc	e to Noise Co	ntour (in feet)									
				70 dE	3A	65 d	BA	6	i0 dBA	55	dBA
			_dn:		152		327		705	5	1,519
		C	IEL:		156		336		725	5	1 561

	FHWA-RD	0-77-108 HIGHW	AY NOI	SE PREDIC	CTION MO	DDEL (S	9/12/2	021)		
Scenar Road Narr Road Segme	io: EP ne: Live Oak An nt: w/o Stewart	venue Avenue			Project I Job Nu	Vame: I mber: '	rwind: 15410	ale Gateway	y SP	
SITE	SPECIFIC IN				N					
Highway Data	SPECIFIC IN	FOI DATA		Site Con	ditions (Hard =	10. Se	oft = 15	,	
Average Daily	Traffic (Adt):	19 934 vobicion					Autos	15		-
Peak Hour	Percentage:	0 10%		Me	dium Tru	rks (2 4	vies)	15		
Peak Hour	lour Volume:	1 731 vehicles		He	avy Truci	ks (3+ 4	vies)	15		
Ve	hicle Sneed:	45 mph			avy 1100	10 10	101100).	10		
Near/Far I a	ne Distance:	80 feet		Vehicle	Mix					
	no Biotanoo.	00 1001		Veh	icleType		Day	Evening	Night	Daily
Site Data				_	A	utos:	72.4%	9.2%	18.4%	85.41%
Ba	rrier Height:	0.0 feet		M	edium Tru	icks:	77.7%	4.8%	17.5%	9.08%
Barrier Type (0-W	/all, 1-Berm):	0.0			Heavy Tru	icks:	84.3%	5 2.7%	13.0%	5.51%
Centerline Di	st. to Barrier:	50.0 feet		Noise Se	ource Ele	vations	s (in f	eet)		-
Centerline Dist.	to Observer:	50.0 feet			Autos	0.0	000			
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks	2.3	297			
Observer Height	Above Pad):	5.0 feet		Heav	/v Trucks	8.0	004	Grade Adj	ustment	t: 0.0
P	ad Elevation:	0.0 feet			,	-				
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	ce (in	feet)		
	Road Grade:	0.0%			Autos	30.4	414			
	Left View:	-90.0 degrees		Mediu	m Trucks	30.	122			
	Right View:	90.0 degrees		Hear	/y Trucks	30.	150			
FHWA Noise Mod	el Calculation:	S								
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresn	el	Barrier Atte	en Bei	rm Atten
Autos:	68.46	-0.14		3.14	-1.20		-4.65	0.0	00	0.000
Medium Trucks:	79.45	-9.87		3.20	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-12.04		3.19	-1.20		-5.43	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier at	tenuation)						-
VehicleType	Leq Peak Hou	r Leq Day	Leo	q Evening	Leq N	light		Ldn	С	NEL
Autos:	70	.3 6	3.4	65.5		63.7	7	71.1		71.4
Medium Trucks:	71	.6 7	D.1	64.0		64.8	3	72.2	:	72.4
Heavy Trucks:	74	.2 7	3.0	64.1		66.2	2	74.1		74.2
Vehicle Noise:	77	.1 7	5.7	69.3		69.8	3	77.4		77.6
Centerline Distan	ce to Noise Co	ontour (in feet)							-	
			7	70 dBA	65 d	BA	(50 dBA	55	i dBA
		L	dn:	157	-	337		727		1,566
		CN	EL:	161		347		747		1,610

Monday, June 26, 2023

	FHWA-R	D-77-108 HIGH	WAY N	DISE F	PREDIC	TION MC	DDEL (9/12/20	021)		
Scenar Road Non	rio: 2028 NP	Venue				Project N	Vame:	Irwinda	ile Gatewa	y SP	
Road Segme	ent: w/o Stewar	t Avenue				300 110	mber.	13410			
SITE	SPECIFIC IN	IPUT DATA				N	DISE I	NODE	L INPUT	S	
Highway Data				S	ite Con	ditions (l	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	29,342 vehicle	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truo	cks (2 /	Axles):	15		
Peak H	Hour Volume:	2,697 vehicle	s		He	avy Truck	ks (3+ /	Axles):	15		
Ve	ehicle Speed:	45 mph		V	ehicle I	Mix					
Near/Far La	ane Distance:	80 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			Me	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	oise Sc	ource Ele	vation	s (in fe	eet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	. 0.	000			
Barrier Distance	to Observer:	0.0 feet			Mediui	m Trucks:	2.	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks:	8.	004	Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet					D:	(!)	f 4)		
Ro	ad Elevation:	0.0 feet		L	ane Equ	uivalent l	Distant	ce (In 1	eet)		
	Road Grade:	0.0%				Autos:	30.	414			
	Left View:	-90.0 degre	es		Meaiui	m Trucks.	30.	122			
	Right View:	90.0 degre	es		Heav	y Trucks.	30.	150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr	nel 🛛	Barrier Att	en Ber	m Atten
Autos:	68.46	1.80		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	79.45	-7.93		3.20		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-10.35		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	′ L	eq Eve	ening	Leq N	light		Ldn	C	NEL
Autos:	72	2.2	70.4		67.4		65.7	7	73.0)	73.3
Medium Trucks:	73	3.5	72.0		65.9		66.8	3	74.2	2	74.4
Heavy Trucks:	75	5.9	74.7		65.8		67.9	9	75.8	3	75.9
Vehicle Noise:	78	3.9	77.5		71.2		71.6	6	79.3	3	79.4
Centerline Distan	ce to Noise C	ontour (in feet)								
			ட	70 dl	BA	65 d	ВА	6	ou dBA	55	аВА
			Ldn:		207		447		963		2,074
		C	NEL:		213		459		989		2,132

					0822 (i		,		
Scenario: 2028 WP				Project	Name: I	rwinda	ale Gatewa	y SP	
Road Name: Live Oak Avenue				Job Ni	umber: '	15410			
Road Segment: w/o Stewart Avenu	le								
SITE SPECIFIC INPUT	DATA			N	OISE N	IODE	L INPUT	5	
Highway Data			Site Cond	litions (Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 29,79	vehicles					Autos:	15		
Peak Hour Percentage: 9.19	%		Med	lium Tru	icks (2 A	(xles)	15		
Peak Hour Volume: 2,738	vehicles		Hea	avy Truc	:ks (3+ A	(xles)	15		
Vehicle Speed: 45	mph		Vehicle N	lix					
Near/Far Lane Distance: 80	feet	Ē	Vehi	cleType		Day	Evening	Night	Daily
Site Data				A	utos:	72.4%	9.2%	18.4%	85.50
Barrier Height: 0.0) feet		Me	dium Tr	ucks:	77.7%	4.8%	17.5%	9.109
Barrier Type (0-Wall, 1-Berm): 0.0)		н	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.419
Centerline Dist. to Barrier: 50.0) feet	ŀ	Noise So	urce El	avation	: (in fa	oof)		
Centerline Dist. to Observer: 50.0) feet	-	10130 00	Autos	. 00	000			
Barrier Distance to Observer: 0.0) feet		Mediun	n Trucks	. 0.0	297			
Observer Height (Above Pad): 5.0) feet		Heav	v Trucks	. 2.	004	Grade Ad	iustment	: 0.0
Pad Elevation: 0.0) feet	L							
Road Elevation: 0.0) feet	-	Lane Equ	ivalent	Distand	e (in i	feet)		
Road Grade: 0.0%	5			Autos	:: 30.4	414			
Left View: -90.0) degrees		Mediun	n Trucks	:: 30.1	122			
Right View: 90.0) degrees		Heavy	/ Trucks	: 30.	150			
FHWA Noise Model Calculations									
VehicleType REMEL Traffic	c Flow Dis	tance	Finite I	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos: 68.46	1.86	3.1	4	-1.20		-4.65	0.0	000	0.00
Medium Trucks: 79.45	-7.87	3.2	0	-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 84.25	-10.13	3.1	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Levels (without To	po and barrie	er atter	uation)						
VehicleType Leq Peak Hour	Leq Day	Leq E	vening	Leq I	Vight		Ldn	C	NEL
Autos: 72.3	70.4		67.5		65.7		73.1	I	73.
Medium Trucks: 73.6	72.1		66.0		66.8		74.2	2	74.
Heavy Trucks: 76.1	74.9		66.0		68.1		76.0)	76.
Vehicle Noise: 79.1	77.7		71.3		71.8		79.4	1	79.
Centerline Distance to Noise Contour	(in feet)								
		70	dBA	65 0	1BA	6	60 dBA	55	dBA
	Ldn:		211		456		982		2,11
	ONEL								0.47

Monday, June 26, 2023

	FHWA-RD	-77-108 HIGHW	AY NOIS	E PRED		DDEL (9)/12/2	021)		
Scenari Road Nam Road Segmer	io: 2040 NP e: Live Oak Av nt: w/o Stewart	enue Avenue			Project I Job Nu	Vame: li imber: 1	rwinda 5410	ale Gatewa	ay SP	
SITE	SPECIFIC IN	PUT DATA			N	OISE N	IODE	L INPUT	S	
Highway Data				Site Co	nditions (Hard =	10, Sc	oft = 15)		
Average Daily Peak Hour Peak H Ve Near/Far La	Traffic (Adt): Percentage: our Volume: hicle Speed: ne Distance:	42,489 vehicles 9.19% 3,905 vehicles 45 mph 80 feet		N F Vehicle	ledium Tru leavy Truc Mix	4 cks (2 A ks (3+ A	Autos: ixles): ixles):	15 15 15		
Nearr ar Ea	le Distance.	00 1001		Ve	hicleType	I	Day	Evening	Night	Daily
Site Data Bar Barrier Type (0-W	rier Height: 'all, 1-Berm):	0.0 feet 0.0		,	A Medium Tri Heavy Tri	utos: ucks: ucks:	72.4% 77.7% 84.3%	9.2% 4.8% 2.7%	18.4% 17.5% 13.0%	9.12% 5.23%
Centerline Dis	st. to Barrier:	50.0 feet		Noise S	Source Ele	vations	; (in fe	eet)		-
Centerline Dist. Barrier Distance Observer Height (Pa	to Observer: to Observer: Above Pad): ad Elevation:	50.0 feet 0.0 feet 5.0 feet 0.0 feet		Medi Hei	Autos um Trucks avy Trucks	: 0.0 : 2.2 : 8.0	000 297 004	Grade Ad	ljustmen	t: 0.0
Roa	ad Elevation:	0.0 feet		Lane E	quivalent	Distanc	e (in i	feet)		
,	Road Grade: Left View: Right View:	0.0% -90.0 degrees 90.0 degrees		Medi Hei	Autos um Trucks avy Trucks	: 30.4 : 30.1 : 30.1	114 122 150			
FHWA Noise Mode	el Calculations	;		1						
VehicleType	REMEL	Traffic Flow	Distance	Finit	e Road	Fresne	el	Barrier Att	en Be	rm Atten
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	3.41 -6.32 -8.74	3 3 3	.14 .20 .19	-1.20 -1.20 -1.20		-4.65 -4.87 -5.43	0.0 0.0 0.0	000 000 000	0.000 0.000 0.000
Unmitigated Noise	Levels (with	out Topo and ba	rrier atte	enuation)					
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leg N	light		Ldn	C	NEL
Autos:	73.	8 72	2.0	69.	0	67.3		74.0	6	74.9
Medium Trucks:	75.	1 73	1.6	67.	5	68.4		75.	8	76.
Heavy Trucks:	77.	5 76	6.3	67.	4	69.5		77.4	4	77.
Vehicle Noise:	80.	5 79).1	72.	8	73.2		80.9	9	81.
Centerline Distanc	e to Noise Co	ntour (in feet)								-
			70) dBA	65 d	BA	6	60 dBA	55	i dBA
		La	in:	26	5	572	•	1,232	2	2,655
		CNE	EL:	273	3	588		1,266	6	2,729

	FHWA-RI	D-77-108 HIGH	WAY N	OISE	PREDIC	TION MO	ODEL (9/12	(2021)		
Scenar	io: 2040 WP					Project I	Name: Irwin	dale Gatewa	y SP	
Road Nan	ne: Live Oak A	venue				Job Nu	imber: 1541	0		
Road Segme	nt: w/o Stewar	rt Avenue								
SITE	SPECIFIC IN	NPUT DATA				N	OISE MOD	EL INPUT	5	
Highway Data				S	Site Con	ditions (Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	42,938 vehicl	es				Auto	s: 15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 Axles	s): 15		
Peak F	lour Volume:	3,946 vehicle	s		He	avy Truci	ks (3+ Axles	s): 15		
Ve	hicle Speed:	45 mph		V	ehicle l	Nix				
Near/Far La	ne Distance:	80 feet			Vehi	cleType	Day	Evening	Night	Daily
Site Data						A	utos: 72.4	% 9.2%	18.4%	85.54%
Ba	rrier Height:	0.0 feet			Me	edium Tru	ucks: 77.7	% 4.8%	17.5%	9.10%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	ucks: 84.3	2.7%	13.0%	5.35%
Centerline Di	st. to Barrier:	50.0 feet		٨	loise So	urce Ele	vations (in	feet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	: 0.000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.004	Grade Adj	iustment	: 0.0
P	ad Elevation:	0.0 feet					Distance (
Ro	ad Elevation:	0.0 feet		1	ane Equ	livalent	Distance (I	n reet)		
	Road Grade:	0.0%			Madin	Autos	30.414			
	Left View:	-90.0 degre	es		Mediur	n Trucks	30.122			
	Right View:	90.0 degre	es		Heav	y Trucks	30.150			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	68.46	3.45		3.14	Ļ	-1.20	-4.6	5 0.0	000	0.000
Medium Trucks:	79.45	-6.28		3.20)	-1.20	-4.8	7 0.0	000	0.000
Heavy Trucks:	84.25	-8.59		3.19)	-1.20	-5.4	3 0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	r attenu	uation)					
VehicleType	Leq Peak Hou	ur Leq Day	/ .	Leq Ev	rening	Leq N	light	Ldn	CI	NEL
Autos:	73	3.8	72.0		69.1		67.3	74.6	6	75.0
Medium Trucks:	75	5.2	73.6		67.6		68.4	75.8	3	76.0
Heavy Trucks:	77	7.7	76.5		67.5		69.6	77.6	6	77.7
Vehicle Noise:	80	0.6	79.2		72.9		73.3	81.0)	81.1
Centerline Distan	ce to Noise C	ontour (in feet)							
				70 d	BA	65 d	IBA	60 dBA	55	dBA
			Ldn:		269		580	1,249		2,691
		С	NEL:		277		596	1,284		2,766

	FHWA-R	D-77-108 HIGH	WAY N	NOISE	PREDIC	TION MC	DDEL (S)/12/20	021)		
Scenar	rio: E					Project N	Vame: I	rwinda	le Gatewa	y SP	
Road Nan Road Segme	ne: Live Oak A ent: w/o Baldwi	venue nd Park Blvd.				Job Nu	mber: 1	5410			
SITE	SPECIFIC I	NPUT DATA				N	DISE N	IODE		s	
Highway Data				S	ite Con	ditions (I	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	16,969 vehicle	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium True	cks (2 A	xles):	15		
Peak F	lour Volume:	1,559 vehicle	s		He	avy Truck	ks (3+ A	xles):	15		
Ve	ehicle Speed:	45 mph		V	ehicle	Mix					
Near/Far La	ane Distance:	80 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			М	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	oise So	ource Ele	vations	; (in fe	et)		
Centerline Dist.	to Observer:	50.0 feet				Autos:	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	8.0	004	Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet		-							
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent l	Distanc	e (in f	'eet)		
	Road Grade:	0.0%				Autos:	: 30.4	114			
	Left View:	-90.0 degre	es		Mediu	m Trucks:	: 30.1	122			
	Right View:	90.0 degre	es		Heav	/y Trucks:	: 30.1	150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	-0.58		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	79.45	-10.31		3.20		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-12.73		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	r attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/	Leq Eve	ening	Leq N	light		Ldn	CI	NEL
Autos:	69	9.8	68.0		65.0		63.3		70.6	3	70.9
Medium Trucks:	71	1.1	69.6		63.5		64.4		71.8	3	72.0
Heavy Trucks:	73	3.5	72.4		63.4		65.5		73.4	1	73.6
Vehicle Noise:	76	3.5	75.1		68.8		69.3		76.9	9	77.1
Centerline Distan	ce to Noise C	ontour (in feet)			0					
			L	70 dl	BA	65 d	BA	6	0 dBA	55	dBA
			Ldn:		144		310		668		1,440
		C	NEL:		148		319		687		1,480

	FHWA-RD	-77-108 HIGH	IWAY	NUISE	PREDIC		IUDEL (9/12/2	021)		
Scenario	D: EP					Project	t Name: I	rwinda	ale Gatewa	y SP	
Road Name	e: Live Oak Av	enue				Job N	lumber:	15410			
Road Segmen	t: w/o Baldwin	d Park Blvd.									
SITE S	SPECIFIC IN	PUT DATA				1	NOISE	IODE	L INPUT	s	
Highway Data				s	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	17,329 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Tr	rucks (2 A	(xles)	15		
Peak He	our Volume:	1,593 vehicle	s		He	avy Tru	cks (3+ A	(xles):	15		
Vel	nicle Speed:	45 mph		V	ehicle l	Mix					
Near/Far Lar	e Distance:	80 feet			Veh	icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.399
Bar	rier Height:	0.0 feet			Me	edium T	rucks:	77.7%	4.8%	17.5%	9.10%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	Heavy T	rucks:	84.3%	2.7%	13.0%	5.51%
Centerline Dis	t. to Barrier:	50.0 feet		Ν	loise Sc	ource E	levation	s (in fe	eet)		
Centerline Dist. t	o Observer:	50.0 feet		-		Auto	s: 0.0	000	,		
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck	s: 2.1	297			
Observer Height ()	Above Pad):	5.0 feet			Heav	y Truck	(s: 8.)	004	Grade Ad	justment.	0.0
Pa	d Elevation:	0.0 feet			_						
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distanc	e (in i	teet)		
F	Road Grade:	0.0%				Auto	IS: 30.	414			
	Left View:	-90.0 degree	es		Mediui	TI I TUCK	(S: 30.	122			
	Right view.	90.0 degre	25		Ticav	y much	.3. 30.	150			
FHWA Noise Mode	I Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresh	el	Barrier Att	en Ber	m Atten
Autos:	68.46	-0.50		3.14	ŀ	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	79.45	-10.23		3.20)	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-12.41		3.19)	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq Ev	ening	Leq	Night		Ldn	CI	NEL
Autos:	69.	.9	68.1		65.1		63.4		70.7	7	71.
Medium Trucks:	71.	2	69.7		63.6		64.5		71.9	9	72
Heavy Trucks:	73.	8 7	12.7		63.7		65.8	6	73.8	5	73.
venicie ivoise:	76.	.1	15.3		69.0		69.4	•	77.3	I	17.
Centerline Distanc	e to Noise Co	ntour (in feet)								
			L	70 d	BA	65	dBA	6	50 dBA	55	dBA
			Lan:		148		319		688		1,482
		0			450		000		707		1 500

	FHWA-RD	-77-108 HIGHV	AY NO		PREDIC			(9/12/2	021)		
Scenar Road Nan Road Segme	rio: 2028 NP ne: Live Oak Av nt: w/o Baldwin	enue d Park Blvd.				Project I Job Nu	Vame: mber:	Irwinda 15410	ale Gatewa	y SP	
SITE	SPECIFIC IN	PUT DATA				N	DISE	MODE		s	
Highway Data				S	ite Con	ditions (Hard	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	27,507 vehicles						Autos:	15		
Peak Hour	Percentage:	9.19%			Mee	dium Tru	cks (2	Axles):	15		
Peak H	lour Volume:	2,528 vehicles			Hea	avy Truc	ks (3+	Axles):	15		
Ve	ehicle Speed:	45 mph		V	ehicle N	lix					
Near/Far La	ne Distance:	80 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			Me	dium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			H	leavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	nise So	urce Fle	vatio	ns (in fi	eet)		
Centerline Dist.	to Observer:	50.0 feet			0.00 00	Autos		000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	. 2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks		3.004	Grade Ad	justment	: 0.0
P	ad Elevation:	0.0 feet		_		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Ro	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distai	nce (in	feet)		
	Road Grade:	0.0%				Autos	: 30).414			
	Left View:	-90.0 degrees			Mediur	n Trucks	: 30).122			
	Right View:	90.0 degrees			Heav	y Trucks	30	0.150			
FHWA Noise Mod	el Calculations										
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fres	inel	Barrier Att	en Bei	rm Atten
Autos:	68.46	1.52		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	79.45	-8.21		3.20		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-10.63		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (witho	ut Topo and b	arrier a	ttenu	ation)			-		-	
VehicleType	Leq Peak Hour	Leq Day	L	eq Eve	ening	Leq N	light		Ldn	C	NEL
Autos:	/1.	9 /	J.1		67.1		65	.4	72.	/ 	73.0
Medium Trucks:	73.	2 /	1.7		65.6		66	.5	73.	9	74.1
Heavy Trucks:	75.	0 7	4.5		00.0		0/	.0	75.	2	75.
venicie Noise:	78.	0 /	1.2		70.9		/1	.4	79.	J	79.2
Centerline Distan	ce to Noise Co	ntour (in feet)	-	70 -	D 4	65 -		. .	0.404		-10.4
		,	dn.	70 al	100	65 0	40	0	U UDA	50	1 097
		L	un.		199		42	0	922		1,907
		CN	=1 ·		204		44	0	0/19		2 042

F	HWA-RD	-77-108 HIGH	WAY N	IOISE I	PREDIO		IODEL (9/12/2	021)			
Scenario: 20 Road Name: Li Road Segment: w	028 WP ve Oak Av lo Baldwine	enue d Park Blvd.				Project Job N	t Name: lumber:	Irwind 15410	ale Gatewa	ay SP		
SITE SPE	CIFIC INI	PUT DATA				1	NOISE	NODE	L INPUT	s		
Highway Data				S	ite Cor	nditions	(Hard =	10, S	oft = 15)			
Average Daily Traffi	c (Adt):	27,867 vehicle	es					Autos.	15			
Peak Hour Perc	entage:	9.19%			Me	edium Tr	ucks (2	Axles).	15			
Peak Hour V	olume:	2,561 vehicles	6		He	eavy Tru	cks (3+ .	Axles).	15			
Vehicle	Speed:	45 mph		v	ehicle	Mix						
Near/Far Lane Di	stance:	80 feet			Veh	icleType	9	Day	Evening	Nig	ht	Daily
Site Data							Autos:	72.4%	9.2%	18	4%	85.499
Barrier	Heiaht:	0.0 feet			М	ledium T	rucks:	77.7%	4.8%	17	.5%	9.119
Barrier Type (0-Wall, 1	-Berm):	0.0				Heavy T	rucks:	84.3%	2.7%	13	.0%	5.409
Centerline Dist. to	Barrier:	50.0 feet		N	oise S	ource E	levation	s (in f	eet)			
Centerline Dist. to Ot	server:	50.0 feet				Auto	s: 0.	000	1			
Barrier Distance to Ob	server:	0.0 feet			Mediu	m Truck	s; 2.	297				
Observer Height (Abov	e Pad):	5.0 feet			Hea	vv Truck	(s: 8.	004	Grade Ad	ljustrr	nent:	0.0
Pad Ele	evation:	0.0 feet		-						-		
Road Ele	evation:	0.0 feet		L	ane Eq	uivalen	t Distan	ce (in	feet)			
Road	Grade:	0.0%				Auto	s: 30	414				
Le Rial	ft View: ht View:	-90.0 degree	es and		Mediu Hea	m Truck vv Truck	(S. 30) (S. 30)	122 150				
	n nom.	JU.U UCGICC				,		100				
FHWA Noise Model Ca	lculations	Traffic Flow	Dist		E in ite	Deed	5		Damian Af	4	0	
Venicie i ype Ri	EMEL 69.46	1 FT	DISta	2 1 A	Finite	Road	Fresi	101	Barrier At	ten	Bern	1 Atten
Autos. Medium Trucks:	70.45	9.16		3.14		-1.20		4.05	0.	000		0.00
Heavy Trucks:	84.25	-10.43		3.19		-1.20		-5.43	0.	000		0.00
Unmitigated Noise Lev	els (witho	ut Topo and	barrier	r attenu	ation)							
VehicleType Leq	Peak Hour	Leq Day		Leg Ev	ening	Leq	Night		Ldn		CN	EL
Autos:	72.	0	70.1		67.2		65.	4	72.	8		73
Medium Trucks:	73.	3	71.8		65.7		66.	5	74.	0		74.
Heavy Trucks:	75.	8	74.6		65.7		67.	3	75.	7		75.
Vehicle Noise:	78.	8	77.4		71.0		71.	5	79.	.1		79.
Centerline Distance to	Noise Co	ntour (in feet))					1		-		
			L	70 di	BA	65	dBA		50 dBA		55 c	BA
		~	Lan:		202		436		93	9		2,023
		CI	VEL:		208		448		96	c		2,079

Monday, June 26, 2023

	FHWA-R	D-77-108 HIGH	WAY NC	DISE P	REDIC	TION MC	DDEL (9/12/20	021)		
Scenar Road Nan Road Segme	rio: 2040 NP ne: Live Oak A nt: w/o Baldwi	venue nd Park Blvd.				Project N Job Nu	lame: I mber:	rwinda 15410	ile Gatewa	y SP	
SITE	SPECIFIC IN	PUT DATA				N	DISE N	IODE	L INPUT	s	
Highway Data				Si	te Con	ditions (I	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	40,153 vehicle	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	cks (2 A	Axles):	15		
Peak H	lour Volume:	3,690 vehicle	s		He	avy Truck	ks (3+ A	Axles):	15		
Ve	ehicle Speed:	45 mph		Ve	hicle I	Nix					
Near/Far La	ne Distance:	80 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						AL	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	oise So	urce Ele	vation	s (in fe	et)		-
Centerline Dist.	to Observer:	50.0 feet				Autos:	0.0	000	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.3	297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks:	8.0	004	Grade Ad	iustment	0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		La	ne Equ	uivalent l	Distand	ce (in f	feet)		
	Road Grade:	0.0%				Autos:	30.4	414			
	Left View:	-90.0 degre	es		Mediur	m Trucks:	30.	122			
	Right View:	90.0 degre	es		Heav	y Trucks:	30.	150			
FHWA Noise Mod	el Calculation	s									-
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	3.16		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	79.45	-6.57		3.20		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-8.99		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ Le	eq Eve	ening	Leq N	light		Ldn	CI	VEL
Autos:	73	3.6	71.7		68.8		67.0)	74.4	1	74.7
Medium Trucks:	74	.9	73.4		67.3		68.1		75.6	5	75.7
Heavy Trucks:	77	'.3	76.1		67.1		69.2	2	77.2	2	77.3
Vehicle Noise:	80).3	78.9		72.6		73.0)	80.6	3	80.8
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 dE	BA	65 di	BA	6	60 dBA	55	dBA
			Ldn:		256		551		1,187		2,556
		C	NEL:		263		566		1,220		2,628

				10102	THEBIO				,		
Scenario: 20	040 WP					Projec	t Name:	Irwinda	ale Gatewa	iy SP	
Road Name: Li	ve Oak Aver	nue				Job N	lumber:	15410			
Road Segment: w	o Baldwind	Park Blvd.									
SITE SPE	CIFIC INP	UT DATA				1	NOISE	NODE	L INPUT	s	
Highway Data					Site Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffi	ic (Adt): 40),513 vehicle	5					Autos:	15		
Peak Hour Perc	entage: 9	9.19%			Med	dium Tr	ucks (2)	Axles):	15		
Peak Hour \	/olume: 3,	723 vehicles			Hea	avy Tru	cks (3+)	Axles):	15		
Vehicle	Speed:	45 mph			Vehicle N	lix					
Near/Far Lane Di	istance:	80 feet			Vehi	cleType	9	Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.54
Barrier	Height:	0.0 feet			Me	dium T	rucks:	77.7%	4.8%	17.5%	9.119
Barrier Type (0-Wall, 1	-Berm):	0.0			H	leavy T	rucks:	84.3%	2.7%	13.0%	5.35%
Centerline Dist. to	Barrier:	50.0 feet		-	Noise So	urce E	levation	s (in f	eet)		
Centerline Dist. to Ol	oserver:	50.0 feet		F		Auto	s: 0.	000			
Barrier Distance to Ol	oserver:	0.0 feet			Mediun	n Truck	(s: 2.	297			
Observer Height (Abov	e Pad):	5.0 feet			Heav	y Truck	is: 8.	004	Grade Ad	justmen	t: 0.0
Pad El	evation:	0.0 feet		F							
Road El	evation:	0.0 feet		1	Lane Equ	iivalen	t Distan	ce (In	feet)		
Road	Grade: (0.0%			Madisor	Auto	IS.' 30.	414			
Le	nt view: •	-90.0 degree	5		Heav		S. 30.	122			
Rigi	il view.	90.0 degree	5		neav,	y much	.3. 30.	150			
FHWA Noise Model Ca	lculations										
VehicleType R	EMEL T	raffic Flow	Dist	ance	Finite	Road	Fresr	nel	Barrier Att	en Be	rm Atten
Autos:	68.46	3.19		3.1	4	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	79.45	-6.53		3.2	0	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-8.85		3.1	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Lev	els (withou	t Topo and b	arrie	r atten	uation)						
VehicleType Leq	Peak Hour	Leq Day		Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	73.6	7	1.8		68.8		67.	1	74.4	4	74.
Medium Trucks:	74.9	7	3.4		67.3		68.2	2	75.	6	75.
Heavy Trucks:	77.4	7	6.2		67.3		69.4	4	77.3	3	77.
Vehicle Noise:	80.4	7	9.0		72.6		73.	1	80.	7	80.
Centerline Distance to	Noise Cont	our (in feet)									
				70 (dBA	65	dBA	(60 dBA	55	5 dBA
		L	.dn:		259		558		1,201		2,588
		CA.	E1 ·		000		===0		4 000		0.000

Monday, June 26, 2023

FHWA-F	D-77-108 HIGH	VAY NOIS	SE PREDIO	CTION MO	DEL (9/12/	2021)		
Scenario: E Road Name: Arrow Hig Road Segment: w/o Live C	hway Jak Avenue			Project N Job Nur	<i>lame:</i> Irwin mber: 1541	dale Gateway 0	y SP	
SITE SPECIFIC I	NPUT DATA			NC	DISE MOD	EL INPUTS	3	
Highway Data			Site Cor	ditions (H	lard = 10, 3	Soft = 15)		
Average Daily Traffic (Adt):	34,298 vehicles	s			Auto	s: 15		
Peak Hour Percentage:	9.19%		Me	dium Truc	ks (2 Axles	<i>):</i> 15		
Peak Hour Volume:	3,152 vehicles		He	avy Truck	s (3+ Axles	s): 15		
Vehicle Speed:	45 mph		Vehicle	Mix				
Near/Far Lane Distance:	48 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data				Au	itos: 72.4	% 9.2%	18.4%	85.65%
Barrier Height:	0.0 feet		M	edium Tru	cks: 77.7	% 4.8%	17.5%	9.12%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tru	cks: 84.3	% 2.7%	13.0%	5.23%
Centerline Dist. to Barrier:	40.0 feet		Noise Se	ource Elev	vations (in	feet)		
Centerline Dist. to Observer:	40.0 feet			Autos:	0.000			
Barrier Distance to Observer:	0.0 feet		Mediu	m Trucks	2.297			
Observer Height (Above Pad):	5.0 feet		Heat	vy Trucks:	8 004	Grade Adi	ustment:	0.0
Pad Elevation:	0.0 feet			,				
Road Elevation:	0.0 feet		Lane Eq	uivalent E	Distance (ii	n feet)		
Road Grade:	0.0%			Autos:	32.388			
Left View:	-90.0 degree	s	Mediu	m Trucks:	32.114			
Right View:	90.0 degree	S	Hear	vy Trucks:	32.141			
FHWA Noise Model Calculatio	ns							
VehicleType REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Bern	n Atten
Autos: 68.4	5 2.48	2	.73	-1.20	-4.5	9 0.0	00	0.000
Medium Trucks: 79.4	5 -7.25	2	.78	-1.20	-4.8	7 0.0	00	0.000
Heavy Trucks: 84.2	5 -9.67	2	.78	-1.20	-5.5	6 0.0	00	0.000
Unmitigated Noise Levels (with	hout Topo and b	arrier att	enuation)					
VehicleType Leq Peak Ho	our Leq Day	Leq	Evening	Leq N	ight	Ldn	CN	EL
Autos: 7	2.5 7	0.6	67.7		65.9	73.3		73.
Medium Trucks: 7	3.8 7	2.3	66.2		67.0	74.5		74.
Heavy Trucks: 7	6.2 7	5.0	66.0		68.1	76.1		76.
Vehicle Noise: 7	9.2 7	7.8	71.5		71.9	79.5		79.1
Centerline Distance to Noise C	Contour (in feet)							
		7	0 dBA	65 dE	BA	60 dBA	55 c	1BA
	L	.dn:	173		372	802		1,727
	CN	EL:	178		383	824		1,776

FI	HWA-RL	0-77-108 HIGH	WAYN	IOISE	PREDIC	TION M	ODEL	9/12/2	021)		
Scenario: EP						Project	Name:	Irwinda	ale Gatewa	y SP	
Road Name: Arr	ow High	way				Job N	umber:	15410		-	
Road Segment: w/o	Live Oa	ak Avenue									
SITE SPEC	IFIC IN	PUT DATA				N	OISE	MODE		s	
Highway Data				S	Site Con	ditions	(Hard =	: 10, So	oft = 15)		
Average Daily Traffic	(Adt):	34,714 vehicle	es					Autos:	15		
Peak Hour Perce	ntage:	9.19%			Me	dium Tru	ucks (2	Axles):	15		
Peak Hour Vo	olume:	3,190 vehicles	6		Hei	avy Truc	cks (3+	Axles):	15		
Vehicle S	Speed:	45 mph		1	/ehicle N	<i>lix</i>					
Near/Far Lane Dis	tance:	48 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	Autos:	72.4%	9.2%	18.4%	85.71%
Barrier H	leiaht:	0.0 feet			Me	edium Ti	ucks:	77.7%	4.8%	17.5%	9.05%
Barrier Type (0-Wall, 1-	Berm):	0.0			F	leavy Ti	ucks:	84.3%	2.7%	13.0%	5.24%
Centerline Dist. to E	Barrier:	40.0 feet			loise So	urce Fl	evatior	s (in fi	pet)		
Centerline Dist. to Obs	server:	40.0 feet		-	10.00 00	Auto	s' 0	000	,		
Barrier Distance to Obs	server:	0.0 feet			Mediur	n Truck	. 0 . 2	297			
Observer Height (Above	e Pad):	5.0 feet			Heav	v Truck	з. — е Я	004	Grade Ad	iustment	0.0
Pad Ele	vation:	0.0 feet			neav	y macks	J. U	.004			
Road Ele	vation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in	feet)		
Road (Grade:	0.0%				Auto:	s: 32	.388			
Left	t View:	-90.0 degree	es		Mediur	n Truck:	s: 32	.114			
Right	View:	90.0 degree	es		Heav	y Truck:	s: 32	.141			
FHWA Noise Model Calo	culations	s									
VehicleType RE	MEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Atten
Autos:	68.46	2.53		2.73	3	-1.20		-4.59	0.0	000	0.000
Medium Trucks:	79.45	-7.23		2.78	3	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-9.61		2.78	3	-1.20		-5.56	0.0	000	0.000
Unmitigated Noise Leve	ls (with	out Topo and	barrier	atten	uation)						
VehicleType Leq P	Peak Hou	r Leq Day	' I	Leq Ev	rening	Leq	Night		Ldn	С	NEL
Autos:	72	.5	70.7		67.7		66.	0	73.3	3	73.6
Medium Trucks:	73	.8	72.3		66.2		67.	1	74.	5	74.6
Heavy Trucks:	76	.2	75.1		66.1		68.	2	76.2	2	76.3
Vehicle Noise:	79	.2	77.8		71.5		71.	9	79.6	j	79.8
Centerline Distance to N	loise Co	ontour (in feet,									
				70 d	IBA	65	dBA	6	60 dBA	55	dBA
			Ldn:		174		375	5	808		1,740
		CI	VEL:		179		385	5	830		1,789

	FHWA-R	D-77-108 HI	GHWA	y noise	E PREDI	CTION MC	DEL (9/	12/2021)		
Scenar Road Nan Road Segme	io: 2028 NP ne: Arrow High nt: w/o Live O	iway ak Avenue				Project N Job Nu	lame: In mber: 15	vindale Gat 5410	eway SI	5
SITE	SPECIFIC II	IPUT DAT	A			NC	DISE M	ODEL INP	UTS	
Highway Data					Site Col	nditions (H	lard = 1	0, Soft = 15	5)	
Average Daily	Traffic (Adt):	49,679 veh	icles				A	utos: 15		
Peak Hour	Percentage:	9.19%			M	edium Truc	ks (2 Ax	les): 15		
Peak F	lour Volume:	4,566 vehi	les		H	eavy Truck	(3+ Ax	<i>les):</i> 15		
Ve	hicle Speed:	45 mph		-	Vehicle	Mix				
Near/Far La	ne Distance:	48 feet		F	Vel	hicleType	D	av Eveni	ina Nie	nht Dailv
Site Data					10.	AL	itos: 7	2.4% 9.2	2% 18	3.4% 85.65%
Ba	rrier Height	0.0 fee	ł		٨	ledium Tru	cks: 7	7.7% 4.8	8% 17	7.5% 9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0				Heavy Tru	icks: 8	4.3% 2.3	7% 13	3.0% 5.23%
Centerline Di	st. to Barrier:	40.0 feet		ŀ	Noise S	ource Ele	vations	(in feet)		
Centerline Dist.	to Observer:	40.0 feet		F		Autos	0.00	10		
Barrier Distance	to Observer:	0.0 feet			Medii	im Trucks:	2.20	17		
Observer Height	(Above Pad):	5.0 feet			Hea	vv Trucks:	8.00)4 Grade	Adiustr	ment: 0.0
P	ad Elevation:	0.0 feet		-		.,				
Ro	ad Elevation:	0.0 feel		-	Lane Ec	quivalent L	Distance	(in feet)		
	Road Grade:	0.0%				Autos:	32.38	38		
	Left View:	-90.0 deg	rees		Mediu	im Trucks:	32.11	14		
	Right View:	90.0 deg	rees		Hea	vy Trucks:	32.14	11		
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	v D	istance	Finite	e Road	Fresne	Barrier	r Atten	Berm Atten
Autos:	68.46	4.	08	2.7	73	-1.20	-4	1.59	0.000	0.000
Medium Trucks:	79.45	-5.	64	2.7	78	-1.20	-4	1.87	0.000	0.000
Heavy Trucks:	84.25	-8.	06	2.7	78	-1.20	-{	5.56	0.000	0.000
Unmitigated Nois	e Levels (with	out Topo ai	nd barr	ier attei	nuation)					
VehicleType	Leq Peak Ho	ur Leq E	Day	Leq E	vening	Leg N	light	Ldn		CNEL
Autos:	74	4.1	72.2		69.3	3	67.5		74.9	75.2
Medium Trucks:	75	5.4	73.9		67.8	3	68.6		76.1	76.2
Heavy Trucks:	71	7.8	76.6		67.6	3	69.7		77.7	77.8
Vehicle Noise:	80).8	79.4		73.1	1	73.5		81.1	81.3
Centerline Distan	ce to Noise C	ontour (in fe	eet)	I		1				
				70	dBA	65 dl	BA	60 dBA		55 dBA
			Ldn:		221		476	1,	026	2,211
			CNEL:		227		490	1,	055	2,273

Scenario: 2028 WP Road Name: Arrow Highway Road Segment: wio Live Oak Avenue SITE SPECIFIC INPUT DATA Highway Data Average Daily Traffic (Adt): 50,095 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4.604 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Barrier Type (O-Walt, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Barrier Type (O-Walt, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Barrier Type (O-Walt, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Barrier Type (O-Walt, 1-Berm): 0.0 Centerline Dist. to Diserver: 40.0 feet Barrier Type (O-Walt, 1-Berm): 0.0 Centerline Dist. to Diserver: 0.0 feet Dbserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet La Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL VehicleType REMEL Calculations VehicleType REMEL Calculations VehicleType REMEL Calculations	Project Name Job Number NOISE te Conditions (Hard Medium Trucks (1 Heavy Trucks (3 shicle Mix Vehicle Type Autos: Medium Trucks: Heavy Trucks: Heavy Trucks: Heavy Trucks:	Invindale Gat 15410 MODEL INP = 10, Soft = 12 Autos: 15 2Axles): 15 Axkes): 15 Axkes): 15 72.4% 77.7% 4.84.3% 2.297 8.004 Grade	eway SP UTS 5) ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.69% 9.07% 5.24%
Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue Site SPECIFIC INPUT DATA Highway Data Si Average Daily Traffic (Adt): 50,095 vehicles Peak Hour Porcentage: 9.19% Peak Hour Volume: 4,604 vehicles Vehicle Speed: 45 mph Vehicle Speed: 48 feet Site Data 0.0 feet Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Dasrner: 40.0 feet Barrier Distance to Observer: 0.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType: 68 46 412	Job Number NOISE te Conditions (Hard Medium Trucks (3 ehicle Mix Vehicle Type Autos: Medium Trucks: Heavy Trucks: Hea	: 15410 MODEL INP = 10, Soft = 12 Autos: 15 2 Axles): 15 - Axles): 15 Day Eveni 72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004 Grade	UTS 5) ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.699 9.079 5.249
WJC Live Oak Avenue SITE SPECIFIC INPUT DATA Highway Data Si Average Daily Traffic (Ad): 50,095 vehicles Peak Hour Percentage: 9,19% Peak Hour Volume: 4,604 vehicles Vehicle Speed: 45 mph Vehicle Speed: 45 mph Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Daserver: 40.0 feet Barrier Tytat. to Barrier: 40.0 feet Barrier Distance to Observer: 0.0 feet Dead Grade: 0.0% Left View: -90.0 degrees Road Grade: 0.0% Left View: -90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType REMEL Traffic Flow VehicleType -88 46 412	NOISE te Conditions (Hard Medium Trucks (2 Heavy Trucks (3 ehicle Mix Vehicle Type Autos: Medium Trucks: Dise Source Elevatio Autos: Medium Trucks: Heavy Trucks:	MODEL INP = 10, Soft = 112 Autos: 15 Axies): 15 Day Eveni 72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004	UTS 5) ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.699 9.079 5.249
SITE SPECIFIC INPUT DATA Highway Data Si Average Daily Traffic (Adt): 50,095 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4.604 vehicles Vehicle Speed: 45 mph Waar/Far Lane Distance: 48 feet Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Barrier Dist. to Doserver: 40.0 feet Barrier Dist. to Observer: 0.0 feet Deserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Left View: -90.0 degrees Right View: 90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType: 68 46 410	NOISE ite Conditions (Hard Medium Trucks () Heavy Trucks (3- shicle Mix Vehicle Type Autos: Medium Trucks: Heavy Trucks: Medium Trucks: Heavy Trucks:	Day Even 72.4% 9. 77.7% 4. 84.3% 2. no. (in feet) 0.000 0.297 8.004	ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.69% 9.07% 5.24%
Highway Data Si Average Daily Traffic (Adl): 50,095 vehicles Peak Hour Percentage: 9,19% Peak Hour Volume: 4,604 vehicles Vehicle Speed: 45 mph Vehicle Speed: 45 mph Vi Near/Far Lane Distance: 48 feet Site Data 0.0 feet Barrier Height: 0.0 feet Barrier Jype (0-Walt, 1-Berm): 0.0 feet Centerline Dist. to Barrier: 40.0 feet Barrier Distance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Barrier Weight (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Left View: 90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType: REMEL VehicleType: REMEL VehicleType: 82 def 41 2 32	te Conditions (Hard Medium Trucks (Heavy Trucks (3- shicle Mix Vehicle Type Autos: Medium Trucks: Heavy Trucks: Medium Trucks: Heavy Trucks:	Image: Day of the second sec	ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 55.69% 9.07% 5.24%
Average Daily Traffic (Adt): 50,095 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,604 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Barrier Distance to Observer: 40.0 feet Barrier Distance to Observer: 40.0 feet Distance to Observer: 40.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees FIWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance	Medium Trucks (3 Heavy Trucks (3 ehicle Mix Vehicle Type Autos: Medium Trucks: Heavy Trucks: Medium Trucks: Heavy Trucks:	Autos: 15 2 Axles): 15 + Axles): 15 Day Eveni 72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004 Grade	ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.69% 9.07% 5.24%
Peak Hour Percentage: 9,19% Peak Hour Volume: 4,604 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Site Data 3 Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Dasrver: 40.0 feet Barrier Jistance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Deserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType: REMEL Traffic Flow; Distance: 68 46 412	Medium Trucks (3 Heavy Trucks (3 ehicle Mix Vehicle Type Autos: Medium Trucks: oise Source Elevatio Autos: Medium Trucks: Heavy Trucks:	2 Axles): 15 + Axles): 15 Day Even. 72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004 Grade	ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.69% 9.07% 5.24%
Peak Hour Volume: 4,604 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Site Data	Heavy Trucks (3: ahicle Mix VehicleType Autos: Medium Trucks: Heavy Trucks: bise Source Elevatio Autos: Medium Trucks: Heavy Trucks:	Axles): 15 Day Even: 72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004 Grade	ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.69% 9.07% 5.24%
Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Barrier Dist. to Dserver: 40.0 feet Barrier Distance to Observer: 0.0 feet Deserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance	ehicle Mix VehicleType Autos: Medium Tracks: Heavy Tracks: olse Source Elevatio Autos: Medium Tracks: Heavy Tracks:	Day Even 72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004 Grade	ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.69% 9.07% 5.24%
Near/Far Lane Distance: 48 feet Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Doserver: 40.0 feet Barrier Distance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Deserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Lad Grade: 0.0% Left View: -90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType: REMEL VehicleType: REMEL VehicleType: REMEL VehicleType: 84 fet	VehicleType Autos: Medium Trucks: Heavy Trucks: oise Source Elevatio Autos: Medium Trucks: Heavy Trucks:	Day Even 72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004 Grade	Ing Night 2% 18.4% 8% 17.5% 7% 13.0%	Daily 85.69% 9.07% 5.24%
Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Marrier: 40.0 feet Barrier Dist. to Doserver: 40.0 feet Barrier Dist. to Doserver: 0.0 feet Doserver: 0.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType Distance Observer: 68 4 4 10	Autos: Medium Trucks: Heavy Trucks: bise Source Elevatic Autos: Medium Trucks: Heavy Trucks:	72.4% 9. 77.7% 4. 84.3% 2. ns (in feet) 0.000 2.297 8.004 Grade	2% 18.4% 8% 17.5% 7% 13.0%	85.69% 9.07% 5.24%
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Minimum Dist. to Observer: 40.0 feet Barrier Distance to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Disterver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType: REMEL Autor: E8 Barter: 124	Medium Trucks: Heavy Trucks: oise Source Elevatio Autos: Medium Trucks: Heavy Trucks:	77.7% 4. 84.3% 2. (in feet) 0.000 2.297 8.004 Grade	8% 17.5% 7% 13.0%	9.07% 5.24%
Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet M Centerline Dist. to Diserver: 40.0 feet Barrier Dist. to Observer: 0.0 feet Dist. to Observer: 0.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL VehicleType REMEL 0 feet Pad Elevation: 0.0 feet Left View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL 0 feet Pad Flevation: 0.0 feet Comparison	Heavy Trucks: Dise Source Elevatio Autos: Medium Trucks: Heavy Trucks:	84.3% 2. (in feet) 0.000 2.297 8.004 Grade	7% 13.0%	5.24%
Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL Remote Remote A10 VehicleType REMEL Remote A10 VehicleType REMEL Remote A10 VehicleType REMEL Remote A10 VehicleType REMEL VehicleType REMEL	Dise Source Elevation Autos: Medium Trucks: Heavy Trucks:	ns (in feet) 0.000 2.297 8.004 Grade		
Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Dobserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance VehicleType REMEL 778fic Flow Distance VehicleType REMEL 78fic Flow 121	Autos: Medium Trucks: Heavy Trucks:	0.000 2.297 8.004 Grade		
Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance VehicleType REMEL 778ftc Flow 233	Medium Trucks: Heavy Trucks:	2.297 8.004 Grade		
Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType REMEL Left View: -90.0 degrees	Heavy Trucks:	8.004 Grade		
Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Left View: -90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance 273			Adjustmen	t: 0.0
Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType: REMEL Traffic Flow Distance				
Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType VehicleType REMEL Traffic Flow Distance 2.32	ane Equivalent Dista	nce (in feet)		
Left View: -90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Autor: 69.46 410 273	Autos: 3	2.388		
FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance VehicleType 773	Heavy Trucks: 3	2.114		
FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Autor: 59.46 4.12 2.72	Tieavy Trucks. 5	2.141		
VehicleType REMEL Traffic Flow Distance				
Autor: 69.46 4.10 0.70	Finite Road Fre	snel Barrie	r Atten Be	rm Atten
Mulus. 00.40 4.12 2.73	-1.20	-4.59	0.000	0.00
Medium Trucks: 79.45 -5.63 2.78	-1.20	-4.87	0.000	0.00
Heavy Trucks: 84.25 -8.02 2.78	-1.20	-5.56	0.000	0.00
Unmitigated Noise Levels (without Topo and barrier attenu	ation)			
VehicleType Leq Peak Hour Leq Day Leq Eve	ening Leq Night	Ldn	С	NEL
Autos: 74.1 72.3	69.3 6	7.6	74.9	75.
Medium Trucks: 75.4 73.9	67.8 68	3.7	76.1	76.
Heavy Irucks: 77.8 76.6	67.7 69	9.8	11.7	77.9
Venicie Noise: 80.8 79.4	73.1 75	3.5	81.2	81.4
Centerline Distance to Noise Contour (in feet)				
70 dE	3A 65 dBA	60 dBA	55	i dBA
Ldn:		′9 1,	,032	2,223
CNEL:	222 4		,060	2,285

Monday, June 26, 2023

FHWA-R	D-77-108 HIGHV	VAY NOIS	E PREDIO	CTION MO	ODEL (9/12	/2021)		
Scenario: 2040 NP Road Name: Arrow High Road Segment: w/o Live O	iway ak Avenue			Project I Job Ni	Name: Irwin Imber: 1541	idale Gatewa I0	ay SP	
SITE SPECIFIC II	NPUT DATA			N	OISE MOD	DEL INPUT	s	
Highway Data Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume: Vehicle Speed: Near/Far Land Distance: Site Data Barrier Type (0-Wall, 1-Berm): Centerline Dist. to Barrier: Centerline Dist. to Barrier: Barrier Distance to Observer: Barrier Distance to Observer:	68,137 vehicles 9.19% 6,262 vehicles 45 mph 48 feet 0.0 feet 0.0 feet 0.0 feet 0.0 feet 0.0 feet	5	Site Corr Me Hee Vehicle M Noise Se Mediu	aditions (edium Truc eavy Truc inicleType A ledium Tru Heavy Tru purce Ele Autos m Trucks	Hard = 10, Auto Ccks (2 Axles ks (3+ Axles Day utos: 72.4 ucks: 77.7 ucks: 84.5 evations (in : 0.000 : 2.297	Soft = 15) IS: 15 IS: 15 S): 15 IS: 15	Night 18.4% 17.5% 13.0%	Daily 85.65% 9.12% 5.23%
Pad Elevation:	0.0 feet		Hea	vy Trucks	8.004	Grade Ad	ljustmen	t: 0.0
Road Elevation: Road Grade: Left View: Right View:	0.0 feet 0.0% -90.0 degrees 90.0 degrees		Mediu Hear	Autos M Trucks vy Trucks	32.388 32.114 32.141	n teetj		
FHWA Noise Model Calculation	s							
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Be	rm Atten
Autos: 68.40 Medium Trucks: 79.45 Heavy Trucks: 84.25	-4.27 -6.69	2.	.78 .78	-1.20 -1.20 -1.20	-4.8 -5.5	9 0.1 7 0.1 6 0.1	000 000 000	0.000
Unmitigated Noise Levels (with	out Topo and b	arrier atte	enuation)					
VehicleType Leq Peak Ho	ur Leq Day	Leq	Evening	Leg N	Vight	Ldn	С	NEL
Autos: 75 Medium Trucks: 76 Heavy Trucks: 79	5.4 7 5.8 7 9.1 7	3.6 5.2 8.0	70.7 69.1 69.0		68.9 70.0 71.1	76. 77. 79.	2 4 1	76.0 77.0 79.1
Vehicle Noise: 8	2.2 8	0.8	74.4		74.9	82.	5	82.
Centerline Distance to Noise C	ontour (in feet)	7() dBA	65 0	IRA	60 dB4	54	5 dBA
	L CN	dn: EL:	273 281	000	588 605	1,267 1,302	2	2,730

	FHWA-R	D-77-108 HIGH	IWAY NO	ISE PI	REDIC	TION MO	DEL (9/12/	2021)	
Scenar Road Nan Road Segme	io: 2040 WP ne: Arrow High nt: w/o Live O	iway ak Avenue				Project N Job Nui	lame: Irwin mber: 1541	dale Gateway 0	rSP
SITE	SPECIFIC II	NPUT DATA				NC	DISE MOD	EL INPUTS	6
Highway Data				Sit	e Con	ditions (H	lard = 10, S	Soft = 15)	
Average Daily	Traffic (Adt):	68,553 vehicl	es				Auto	s: 15	
Peak Hour	Percentage:	9.19%			Me	dium Truc	ks (2 Axles): 15	
Peak H	lour Volume:	6,300 vehicle	s		Hei	avy Truck	is (3+ Axles): 15	
Ve	hicle Speed:	45 mph		Ve	hicle A	Aix			-
Near/Far La	ne Distance:	48 feet			Vehi	cleTvpe	Dav	Evenina	Night Daily
Site Data						Au	itos: 72.4	% 9.2%	18.4% 85.68%
Ba	rrier Height	0.0 feet			Me	edium Tru	cks: 77.7	% 4.8%	17.5% 9.08%
Barrier Type (0-V	/all_1-Rerm)	0.0			F	leavy Tru	cks: 84.3	% 2.7%	13.0% 5.23%
Centerline Di	st. to Barrier:	40.0 feet		No	ine Ce	urae Ela	unting (in	faat	
Centerline Dist.	to Observer:	40.0 feet		NO	ise so	Autoo		leel)	
Barrier Distance	to Observer:	0.0 feet			A da ali u	Autos.	0.000		
Observer Height	(Above Pad):	5.0 feet			Meaiur	n Trucks:	2.297	Grade Adi	uctment: 0.0
P	ad Elevation:	0.0 feet			Heav	y Trucks:	8.004	Grade Aujt	Jaiment. 0.0
Ro	ad Elevation:	0.0 feet		La	ne Equ	ivalent E	Distance (ir	n feet)	
	Road Grade:	0.0%				Autos:	32.388		
	Left View:	-90.0 degre	es		Mediur	n Trucks:	32.114		
	Right View:	90.0 degre	es		Heav	y Trucks:	32.141		
FHWA Noise Mod	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresnel	Barrier Atte	n Berm Atten
Autos:	68.46	5.48		2.73		-1.20	-4.5	9 0.0	00 0.000
Medium Trucks:	79.45	-4.26		2.78		-1.20	-4.8	7 0.0	00 0.000
Heavy Trucks:	84.25	-6.66		2.78		-1.20	-5.5	5 0.0	00 0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenua	tion)				
VehicleType	Leq Peak Ho	ur Leq Day	/ Le	q Eve	ning	Leq N	ight	Ldn	CNEL
Autos:	75	5.5	73.6		70.7		68.9	76.3	76.6
Medium Trucks:	76	5.8	75.2		69.2		70.0	77.4	77.6
Heavy Trucks:	79	9.2	78.0		69.0		71.1	79.1	79.2
Vehicle Noise:	82	2.2	80.8		74.5		74.9	82.5	82.7
Centerline Distan	ce to Noise C	ontour (in feet)						
				70 dB.	A	65 dE	BA	60 dBA	55 dBA
			Ldn:		274		590	1,272	2,740
		С	NEL:		282		607	1,307	2,816

	FHWA-R	D-77-108 HIGI	HWAY N	IOISE F	REDIC	TION MC	DDEL (9	/12/20)21)		
Scenal Road Nar	rio: E					Project N	Vame: I	winda	le Gatewa	y SP	
Road Segme	ent: e/o Avenid	a Barbosa				300 110	inder. 1	3410			
SITE	SPECIFIC II	NPUT DATA				NC	DISE N	ODE	L INPUTS	3	
Highway Data				Si	te Con	ditions (I	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	15,351 vehic	les				A	utos:	15		
Peak Hou	Percentage:	9.19%			Me	dium Truc	cks (2 A	xles):	15		
Peak I	Hour Volume:	1,411 vehicle	es		He	avy Truck	(3+ A	xles):	15		
Ve	ehicle Speed:	45 mph		Ve	hicle	Mix					
Near/Far La	ane Distance:	48 feet			Veh	icleType	1	Day	Evening	Night	Daily
Site Data						AL	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			М	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy Tru	icks:	34.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	40.0 feet		N	oise So	ource Ele	vations	(in fe	et)		
Centerline Dist.	to Observer:	40.0 feet				Autos:	0.0	00			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	97			
Observer Height	(Above Pad):	5.0 feet			Heav	/y Trucks:	8.0	04	Grade Adj	ustment	0.0
P	ad Elevation:	0.0 feet					Di- 4	- 6- 4	41		
Ro	ad Elevation:	0.0 feet		La	ine Eq	uivalent L	Jistanc	e (In T	eet)		
	Road Grade:	0.0%			A da ali	Autos:	32.3	88			
	Left View:	-90.0 degre	es		Mealu	m Trucks:	32.1	14			
	Right view:	90.0 degre	es		nea	ly mucks.	32.1	41			
FHWA Noise Mod	el Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	el i	Barrier Atte	en Ber	m Atten
Autos:	68.46	-1.02	2	2.73		-1.20		4.59	0.0	00	0.000
Medium Trucks:	79.45	-10.74	ļ	2.78		-1.20		4.87	0.0	00	0.000
Heavy Trucks:	84.25	-13.16	6	2.78		-1.20		5.56	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Da	y l	Leq Eve	ening	Leq N	light		Ldn	CI	VEL
Autos:	69	9.0	67.1		64.2		62.4		69.8	1	70.1
Medium Trucks:	70	0.3	68.8		62.7		63.5		71.0)	71.1
Heavy Trucks:	72	2.7	71.5		62.5		64.6		72.6	1	72.7
Vehicle Noise:	7	5.7	74.3		68.0		68.4		76.0)	76.2
Centerline Distan	ce to Noise C	ontour (in fee	t)	70 "		<u></u>			0.404		-10.4
				70 dE	5A 40.	65 d	BA	6	U dBA	55	aBA
			Lan:		101		218		469		1,011
		C	INEL:		104		224		482		1,039

	FHWA-RD	77-108 HIGH	WAT	NUISE	PREDIC		ODEL (9	12/2	J21)				
Scenario: E	P				Project Name: Irwindale Gateway SP								
Road Name: A	rrow Highw	ay				Job N	umber: 1	5410					
Road Segment: e	/o Avenida	Barbosa											
SITE SPE	CIFIC IN	PUT DATA				N	OISE M	IODE	L INPUT	S			
Highway Data				s	Site Con	ditions	Hard =	10, Sc	oft = 15)				
Average Daily Trafi	fic (Adt):	5,443 vehicle	s				A	Autos:	15				
Peak Hour Perc	entage:	9.19%			Me	dium Tru	icks (2 A	xles):	15				
Peak Hour	Volume:	1,419 vehicles	3		He	avy Truc	ks (3+ A	xles):	15				
Vehicle	Speed:	45 mph		V	/ehicle I	Nix							
Near/Far Lane D	istance:	48 feet			Vehi	cleType	l	Day	Evening	Night	Daily		
Site Data						A	utos:	72.4%	9.2%	18.4%	85.63%		
Barrier	Height:	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.10%		
Barrier Type (0-Wall,	1-Berm):	0.0			ŀ	leavy Tr	ucks: {	84.3%	2.7%	13.0%	5.27%		
Centerline Dist. to	Barrier:	40.0 feet			loise Sc	urce El	evations	in fe	pet)				
Centerline Dist. to O	bserver:	40.0 feet		Ē		Autos	. 0.0	000					
Barrier Distance to O	bserver:	0.0 feet			Mediur	n Trucks	: 2.2	97					
Observer Height (Abo	ve Pad):	5.0 feet			Heav	v Trucks	. 8.0	04	Grade Ad	iustment.	0.0		
Pad E	levation:	0.0 feet		-									
Road E	levation:	0.0 feet		1	ane Equ	livalent	Distanc	e (in i	reet)				
Road	Grade:	0.0%				Autos	: 32.3	888					
Le	eft View:	-90.0 degree	es		Mediur	TT Trucks	. 32.1	14					
Rig	nt view:	90.0 degree	s		neav	y mucks	i. 32.1	41					
FHWA Noise Model Ca	lculations												
VehicleType R	EMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten		
Autos:	68.46	-0.99		2.73	3	-1.20	-	4.59	0.0	000	0.00		
Medium Trucks:	79.45	-10.73		2.78	3	-1.20	-	-4.87	0.0	000	0.00		
Heavy Trucks:	84.25	-13.10		2.78	3	-1.20		-5.56	0.0	000	0.00		
Unmitigated Noise Lev	vels (witho	ut Topo and	barrie	er attenu	uation)								
VehicleType Leq	Peak Hour	Leq Day	r	Leq Ev	ening	Leq	Vight		Ldn	CI	VEL		
Autos:	69.0)	67.2		64.2		62.5		69.8	3	70.		
Medium Trucks:	70.3	3	68.8		62.7		63.6		71.0)	71.		
Heavy Trucks:	72.	(71.6		62.6		64.7		72.7	r	72.		
Vehicle Noise:	75.	r	74.3		68.0		68.4		76.1		76.		
Centerline Distance to	Noise Cor	ntour (in feet,				-							
				70 d	BA	65 (1BA	6	60 dBA	55	dBA		
			Ldn:		102		219		472		1,017		
		-											

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021) Project Name: Invindale Gateway SP Job Number: 15410 Scenario: 2028 NP Road Name: Arrow Highway Road Segment: e/o Avenida Barbosa SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Highway Data Average Daily Traffic (Adt): 24,999 vehicles Peak Hour Percentage: 9.19% Autos: 15 Medium Trucks (2 Axles): 15 Peak Hour Volume: 2,297 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 45 mph Vehicle Mix
 Ucte mix
 Vehicle Type
 Day
 Evening
 Night
 Daily

 Autos:
 72.4%
 9.2%
 18.4%
 85.65%

 Medium Trucks:
 77.7%
 4.8%
 17.5%
 9.12%

 Heavy Trucks:
 84.3%
 2.7%
 13.0%
 5.23%
 Near/Far Lane Distance: 48 feet Site Data Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 40.0 feet 40.0 feet Centerline Dist. to Barrier: Centerline Dist. to Observer: Noise Source Elevations (in feet) Autos: 0.000 Barrier Distance to Observer: Observer Height (Above Pad): 0.0 feet Medium Trucks: 2.297 5.0 feet 8.004 Grade Adjustment: 0.0 Heavy Trucks: Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) 0.0 feet 0.0% Road Elevation: Autos: 32.388 Medium Trucks: 32.114 Road Grade: -90.0 degrees 90.0 degrees Left View: Right View: Heavy Trucks: 32.141
 FHWA Noise Model Calculations

 VehicleType
 REMEL
 Traffic Flow
 Distance
 Finite Road
 Fresnel
 Barrier Atten
 Berrn Atten

 Autos:
 68.46
 1.10
 2.73
 -1.20
 -4.59
 0.000
 0.000
 -1.20 -1.20 0.000 2.78 Medium Trucks: -4.87 0.000 79.45 -8.62 0.000

Heavy Trucks:	avy Trucks: 84.25 -11.04		2.78	-1.20	-5.56 0.0	00 0.000
Unmitigated Nois	e Levels (withou	t Topo and barn	ier attenuation)			
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	69.3	66.3	64.6	71.9	72.2
Medium Trucks:	72.4	70.9	64.8	65.7	73.1	73.3
Heavy Trucks:	74.8	73.6	64.7	66.7	74.7	74.8
Vehicle Noise:	77.8	76.4	70.1	70.5	78.2	78.3
Centerline Distan	ce to Noise Con	tour (in feet)				
			70 dBA	65 dBA	60 dBA	55 dBA
		Ldn:	140	301	649	1,399
		CNEL:	144	310	668	1,438

	FHWA-R	0-77-108 HIGHW	AY NOIS	SE PREDIC	TION MO	DEL (9/12/2	:021)		
Scenar	io: 2028 WP				Project N	ame: Irwind	ale Gatewa	iy SP	
Road Nam	e: Arrow High	way			Job Nun	nber: 15410	1		
Road Segmer	nt: e/o Avenida	Barbosa							
SITE	SPECIFIC IN	IPUT DATA			NO	ISE MODE		s	
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	25,091 vehicles				Autos	: 15		
Peak Hour	Percentage:	9.19%		Me	dium Truci	ks (2 Axles)	: 15		
Peak H	lour Volume:	2,306 vehicles		He	avy Trucks	s (3+ Axles)	: 15		
Ve	hicle Speed:	45 mph		Vehicle	Mix				
Near/Far La	ne Distance:	48 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data					Au	tos: 72.4%	6 9.2%	18.4%	85.64%
Bai	rrier Height	0.0 feet		M	edium Truc	cks: 77.7%	6 4.8%	17.5%	9.11%
Barrier Type (0-W	/all, 1-Berm):	0.0		1	Heavy Truc	cks: 84.3%	6 2.7%	13.0%	5.25%
Centerline Dis	st. to Barrier:	40.0 feet		Noise Sc	ource Flev	ations (in f	eet)		
Centerline Dist.	to Observer:	40.0 feet			Autos:	0.000	000		
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks:	2 297			
Observer Height (Above Pad):	5.0 feet		Heat	v Trucks	8 004	Grade Ad	iustment:	0.0
Pa	ad Elevation:	0.0 feet			y maono.	0.001			
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent D	istance (in	feet)		
1	Road Grade:	0.0%			Autos:	32.388			
	Left View:	-90.0 degrees		Mediu	m Trucks:	32.114			
	Right View:	90.0 degrees		Heav	y Trucks:	32.141			
FHWA Noise Mode	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	68.46	1.12	2	2.73	-1.20	-4.59	0.0	000	0.000
Medium Trucks:	79.45	-8.61	2	2.78	-1.20	-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-11.01	2	2.78	-1.20	-5.56	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and ba	rrier att	enuation)					-
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq Ni	ght	Ldn	CI	JEL
Autos:	71	.1 69	.3	66.3		64.6	71.9	9	72.2
Medium Trucks:	72	.4 70	.9	64.8		65.7	73.1	1	73.3
Heavy Trucks:	74	.8 73	.7	64.7		66.8	74.8	В	74.9
Vehicle Noise:	77	.8 76	.4	70.1		70.5	78.2	2	78.4
Centerline Distance	ce to Noise Co	ontour (in feet)							
			7	0 dBA	65 dB	A	60 dBA	55	dBA
		Lo	in:	140		303	652		1,404
		CNE	EL:	144		311	670)	1,443

Monday, June 26, 2023

Monday, June 26, 2023

	FHWA-R	D-77-108 HI	GHWA	Y NOISE	PREDI		DEL (9/1	2/2021)		
Scenar Road Nan Road Segme	io: 2040 NP ne: Arrow High nt: e/o Avenid	iway a Barbosa				Project N Job Nu	lame: Irw mber: 15	indale Gatev 410	vay SF	3
SITE	SPECIFIC IN	NPUT DAT	A			NC	DISE MO	DEL INPU	TS	
Highway Data					Site Col	nditions (H	Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt):	36,576 veh	icles				Au	tos: 15		
Peak Hour	Percentage:	9.19%			M	edium Truc	cks (2 Axl	es): 15		
Peak F	our Volume:	3,361 vehi	cles		H	eavy Truck	(3+ Axl	es): 15		
Ve	hicle Speed:	45 mph		F	Vahicla	Mix				
Near/Far La	ne Distance:	48 feet		-	Venicle	hicleType	D	v Evening	Nic	tht Daily
Site Data					101	AL	itos: 72	.4% 9.2%	6 18	.4% 85.65%
Ba	rrier Height:	0 0 fee	t		٨	ledium Tru	icks: 77	.7% 4.8%	6 17	.5% 9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0	•			Heavy Tru	icks: 84	.3% 2.7%	6 13	.0% 5.23%
Centerline Di	st. to Barrier:	40.0 fee	t	ŀ	Noise S	ource Ele	vations (in foot)		
Centerline Dist.	to Observer:	40.0 fee	t	-	110/30 0	Autos	0.00	1		
Barrier Distance	to Observer:	0.0 fee	t		Medi	im Trucks:	2 20	7		
Observer Height	(Above Pad):	5.0 fee	t		Hea	vv Trucks:	8.00	1 Grade A	diustr	nent: 0.0
P	ad Elevation:	0.0 fee	t	_		<i>i) maana</i> .	0.00			
Ro	ad Elevation:	0.0 fee	t		Lane Ec	quivalent L	Distance	(in feet)		
	Road Grade:	0.0%				Autos:	32.38	В		
	Left View:	-90.0 deg	rees		Mediu	im Trucks:	32.11	4		
	Right View:	90.0 deg	rees		Hea	vy Trucks:	32.14	1		
FHWA Noise Mod	el Calculation	S								
VehicleType	REMEL	Traffic Flo	w D	istance	Finite	e Road	Fresnel	Barrier A	Atten	Berm Atten
Autos:	68.46	2.	75	2.7	73	-1.20	-4	.59 (0.000	0.000
Medium Trucks:	79.45	-6.	97	2.7	78	-1.20	-4	.87 0	0.000	0.000
Heavy Trucks:	84.25	-9.	39	2.7	78	-1.20	-5	.56 (0.000	0.000
Unmitigated Nois	e Levels (with	out Topo a	nd barı	rier attei	nuation)					
VehicleType	Leq Peak Ho	ur Leq l	Day	Leq E	vening	Leq N	light	Ldn		CNEL
Autos:	72	2.7	70.9)	68.0)	66.2	73	3.5	73.9
Medium Trucks:	74	4.1	72.5		66.4	1	67.3	74	4.7	74.9
Heavy Trucks:	76	3.4	75.3		66.3	3	68.4	76	5.4	76.5
Vehicle Noise:	79	9.5	78.1		71.7	7	72.2	79	9.8	80.0
Centerline Distant	ce to Noise C	ontour (in fe	eet)							
				70	dBA	65 dl	BA	60 dBA		55 dBA
			Ldn.		180		388	83	37	1,803
			CNEL		185		399	86	50	1,853

	FIWA-KL	-77-100 HIGH	WAI	NOISE	FREDIO			12/2	021)		
Scenario	2040 WP					Project	Name: I	winda	ale Gatewa	y SP	
Road Name	e: Arrow High	vay				Job N	umber: 1	5410			
Road Segmen	t: e/o Avenida	Barbosa									
SITE S	PECIFIC IN	PUT DATA				Ν	IOISE N	ODE	L INPUT	S	
Highway Data				5	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily 1	raffic (Adt):	36,668 vehicle	es				A	lutos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Ho	our Volume:	3,370 vehicle	s		He	avy Tru	cks (3+ A	xles):	15		
Veh	icle Speed:	45 mph		١	/ehicle l	Mix					
Near/Far Lan	e Distance:	48 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.64%
Bar	rier Heiaht:	0.0 feet			Me	edium T	rucks:	77.7%	4.8%	17.5%	9.11%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy T	rucks:	34.3%	2.7%	13.0%	5.24%
Centerline Dis	t. to Barrier:	40.0 feet			loise Sr	urce E	ovations	(in f	aat)		
Centerline Dist. t	o Observer:	40.0 feet			0130 00	Auto	e · 0 0	00			
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck	s. 0.0	97			
Observer Height (/	Above Pad):	5.0 feet			Heav	v Truck	s: 8.0	04	Grade Ad	iustment.	0.0
Pa	d Elevation:	0.0 feet		_		,					
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	Distanc	e (in :	feet)		
F	load Grade:	0.0%				Auto	s: 32.3	88			
	Left View:	-90.0 degre	es		Mediui	m Truck	s: 32.1	14			
	Right View:	90.0 degre	es		Heav	у тиск	s: 32.1	41			
FHWA Noise Mode	I Calculations	;									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos:	68.46	2.77		2.73	3	-1.20		4.59	0.0	000	0.000
Medium Trucks:	79.45	-6.96		2.78	3	-1.20		4.87	0.0	000	0.000
Heavy Trucks:	84.25	-9.36		2.78	3	-1.20		5.56	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barri	er atteni	uation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq Ev	ening	Leq	Night		Ldn	CI	VEL
Autos:	72	.8	70.9		68.0		66.2		73.6	6	73.9
Medium Trucks:	74	.1	72.5		66.5		67.3		74.7	7	74.
Heavy Trucks:	76	5	75.3		66.3		68.4		76.4	1	76.
Vehicle Noise:	79	.5	78.1		71.8		72.2		79.8	3	80.
Centerline Distanc	e to Noise Co	ntour (in feet)				-				-
				70 d	BA	65	dBA	6	60 dBA	55	dBA
			Ldn:		181		389		839		1,808
		<u> </u>					400		000		4 000

	FHWA-RD	-77-108 HIGH	WAY N	OISE	PREDIC		ODEL	(9/12/2	021)	_			
Scenar Road Nam Road Segmei	io: E le: Arrow Highv nt: e/o I-1605 N	vay ∖B On-Ramp		Project Name: Invindale Gateway SP Job Number: 15410									
SITE	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	s			
Highway Data				S	ite Con	ditions (Hard =	= 10, Sc	oft = 15)				
Average Daily	Traffic (Adt):	11,358 vehicle	s					Autos:	15				
Peak Hour	Percentage:	9.19%			Mee	dium Tru	cks (2	Axles):	15				
Peak H	lour Volume:	1,044 vehicles	;		Hea	avy Truc	ks (3+	Axles):	15				
Ve	hicle Speed:	45 mph		v	ehicle N	lix							
Near/Far La	ne Distance:	48 feet			Vehi	cleType		Day	Evening	Night	Daily		
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%		
Bai	rrier Height	0.0 feet			Me	dium Tr	ucks:	77.7%	4.8%	17.5%	9.12%		
Barrier Type (0-W	/all, 1-Berm):	0.0			H	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.23%		
Centerline Di	st. to Barrier:	40.0 feet		N	loise So	urce Ele	vation	ıs (in fe	eet)				
Centerline Dist.	to Observer:	40.0 feet				Autos	: 0	.000	1				
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2	.297					
Observer Height (Above Pad):	5.0 feet			Heav	y Trucks	: 8	.004	Grade Ad	iustment	: 0.0		
Pa	ad Elevation:	0.0 feet					Distan	(f 4)				
Roa	ad Elevation:	0.0 feet		L	ane Equ	livalent	Distan	ce (in i	eet)				
	Road Grade:	0.0%			1 4 m m 1 m m	Autos	32	.388					
	Left View: Right View:	-90.0 degree	iS ic		Heav	n Trucks v Trucks	· 32	.114					
	rught view.	50.0 degree	.5		mour	,	. 02	.141					
FHWA Noise Mode	el Calculations	Traffic Flow	Dieta	0000	Finite	Poad	Erec	nel	Parrier Att	an Rai	m Atten		
Autos:	68.46	-2.32	Dista	2 73	1 1111112	-1.20	1163	-4 50			0.000		
Medium Trucks:	79.45	-12.02		2.70		-1.20		-4.87	0.0	000	0.000		
Heavy Trucks:	84.25	-12.00		2.78		-1.20		-5.56	0.0	000	0.000		
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	uation)								
VehicleType	Leg Peak Hou	r Leq Day	L	Leg Ev	ening	Leg I	Vight		Ldn	C	NEL		
Autos:	67	.7	65.8		62.9		61.	1	68.5	5	68.8		
Medium Trucks:	69	.0	67.5		61.4		62.	2	69.7	7	69.8		
Heavy Trucks:	71	.4	70.2		61.2		63.	3	71.3	3	71.4		
Vehicle Noise:	74	.4	73.0		66.7		67.	1	74.7	7	74.9		
Centerline Distand	e to Noise Co	ntour (in feet)											
				70 d	BA	65 c	IBA	6	60 dBA	55	dBA		
			l dn		0.2		170	·	294		827		
			Lun.		03		1/0	2	304		027		

	FHWA-RI	0-77-108 HIGH	VAY NO	DISE I	PREDIC	TION M	ODEL (9/12/2	021)			
Scenar Road Narr Road Segme	io: EP ne: Arrow High nt: e/o I-1605 I	way NB On-Ramp				Project Job N	Name: umber:	Irwinda 15410	ale Gatew	ay SP		
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE		s		
Highway Data				S	ite Con	ditions	(Hard =	: 10, So	oft = 15)		-	-
Average Daily Peak Hour	Traffic (Adt): Percentage:	11,512 vehicle 9.19%	5		Ме	dium Tra	ucks (2	Autos: Axles):	15 15			
Peak H Ve	lour Volume: hicle Speed:	1,058 vehicles 45 mph		v	He ehicle l	avy Truc Mix	cks (3+ .	Axles):	15			
Near/Far La	ne Distance:	48 feet			Veh	cleType		Day	Evening	Nig	ht	Daily
Site Data						A	Autos:	72.4%	9.2%	18.	4%	85.49%
Ba Barrier Type (0-W	rrier Height: /all, 1-Berm):	0.0 feet 0.0			Me F	edium Ti Ieavy Ti	rucks: rucks:	77.7% 84.3%	4.8%	17. 13.	5% 0%	9.11% 5.41%
Centerline Di	st. to Barrier:	40.0 feet		N	loise Sc	urce El	evation	s (in fe	eet)			
Centerline Dist. Barrier Distance Observer Height	to Observer: to Observer: (Above Pad): ad Elevation:	40.0 feet 0.0 feet 5.0 feet			Mediui Heav	Auto: n Truck: y Truck:	s: 0. s: 2. s: 8.	.000 .297 .004	Grade A	djustm	ent:	0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	ce (in	feet)			
	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree	5		Mediui Heav	Auto: n Truck: y Truck:	s: 32 s: 32 s: 32	.388 .114 .141				
FHWA Noise Mod	el Calculation	s								-		-
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresi	nel	Barrier At	ten	Berr	n Atten
Autos: Medium Trucks:	68.46 79.45	-2.27 -12.00		2.73		-1.20 -1.20		-4.59 -4.87	0.	.000 .000		0.000
Harritizated Mais	- 1 4	-14.20		2.70		-1.20		-0.00	0			0.000
VehicleType	Levels (with			anteriu ea Evi	enina	100	Niaht		l dn		CA	IFI
Autos	67 67	7 6	59	CY LV	62 9	LUY	61	2	68	5	0/1	68
Medium Trucks:	69	.0 6	7.5		61.4		62.	3	69	.7		69.
Heavy Trucks: Vehicle Noise	71	.6 7	0.4		61.4		63.	5	71	9		71.
Contorlino Distan	re to Noise Cr	ntour (in feet)								-		
Centernile Distant		intour (III leet)		70 di	BA	65	dBA	6	60 dBA		55 0	dBA
		L	.dn:		84		182	2	39	1		842
		CN	EL:		87		187	7	40	2		866

Monday, June 26, 2023

	FHWA-R	D-77-108 HIGH	WAY NC	DISE F	REDIC	TION MC	DDEL (9/12/20	021)		
Scenar Road Nan Road Segme	rio: 2028 NP ne: Arrow High nt: e/o I-1605	way NB On-Ramp				Project I Job Nu	Vame: I mber:	rwinda 15410	le Gatewa	y SP	
SITE	SPECIFIC IN	NPUT DATA				N	DISE N	IODE		s	
Highway Data				S	ite Con	ditions (l	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	20,881 vehicle	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium True	cks (2 A	Axles):	15		
Peak H	lour Volume:	1,919 vehicle	s		He	avy Truck	ks (3+ A	Axles):	15		
Ve	ehicle Speed:	45 mph		V	ehicle I	Nix					
Near/Far La	ne Distance:	48 feet		-	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	40.0 feet		N	oise Sc	urce Ele	vation	s (in fe	et)		
Centerline Dist.	to Observer:	40.0 feet		-		Autos	0.0	000			-
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	2.3	297			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	. 8.0	004	Grade Adj	iustment	: 0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		Li	ane Equ	uvalent l	Distanc	ce (In 1	eet)		
	Road Grade:	0.0%				Autos:	32.	388			
	Left View:	-90.0 degre	es		Meaiui	m Trucks:	32.	114			
	Right view:	90.0 degre	25		neav	y mucks.	. 32.	141			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos:	68.46	0.32		2.73		-1.20		-4.59	0.0	000	0.000
Medium Trucks:	79.45	-9.41		2.78		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-11.83		2.78		-1.20		-5.56	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Day	/ Le	eq Eve	ening	Leq N	light		Ldn	C	NEL
Autos:	70	0.3	68.5		65.5		63.8	3	71.1	1	71.4
Medium Trucks:	71	1.6	70.1		64.0		64.9)	72.3	3	72.5
Heavy Trucks:	74	1.0	72.8		63.9		66.0		73.9		74.0
Venicle Noise:	1	7.0	75.6		69.3		69.7		//.4	ł	//.6
Centerline Distan	ce to Noise C	ontour (in feet)	70 //							
				70 dE	3A	65 d	BA OCT	6	и авА 	55	ana ara
		~	Ldn:		124		267		576		1,241
		C	VEL:		128		275		592		1,275

							-							
Scenario: 2028 WP					Project Name: Irwindale Gateway SP									
Road Name: Arrow Highway					Job Number: 15410									
Road Segmen	t: e/o I-1605	NB On-Ramp												
SITE SPECIFIC INPUT DATA					NOISE MODEL INPUTS									
Highway Data					Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	21,035 vehicle	es		Autos: 15									
Peak Hour I	Percentage:	9.19%			Medium Trucks (2 Axles): 15									
Peak He	our Volume:	1,933 vehicle	s		Hea	avy Tru	cks (3+)	Axles):	15					
Vel	nicle Speed:	45 mph			Vehicle Mix									
Near/Far Lar	ne Distance:	48 feet		Ē	Vehi	cleType	2	Day	Evening	Night	Daily			
Site Data							Autos:	72.4%	9.2%	18.4%	85.569			
Bar	rier Height:	0.0 feet			Me	dium T	rucks:	77.7%	4.8%	17.5%	9.11%			
Barrier Type (0-Wa	all, 1-Berm):	0.0			Heavy Trucks: 84.3% 2.7% 13.0% 5.32									
Centerline Dis	t. to Barrier:	40.0 feet		-	Noise So	urce F	evation	s (in fe	pet)					
Centerline Dist. t	o Observer:	40.0 feet		-										
Barrier Distance to Observer: 0.0 feet					Medium Trucks: 2 297									
Observer Height (/	Above Pad):	5.0 feet			Heav	/ Truck	s: 8.	004	Grade Ad	iustment	: 0.0			
Pa	d Elevation:	0.0 feet		-										
Road Elevation: 0.0 feet					Lane Equivalent Distance (in feet)									
Road Grade: 0.0%					Autos: 32.388									
Left View: -90.0 degrees					Medium Trucks: 32.114									
	Right View:	90.0 degre	es		Heavy	/ I ruck	S: 32.	141						
FHWA Noise Mode	I Calculation	s												
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite I	Road	Fresr	el	Barrier Att	en Ber	m Atten			
Autos:	68.46	0.35		2.7	3	-1.20		-4.59	0.0	000	0.00			
Medium Trucks:	79.45	-9.38		2.7	8	-1.20		-4.87	0.0	000	0.00			
Heavy Trucks:	84.25	-11.71		2.7	8	-1.20		-5.56	0.0	000	0.000			
Unmitigated Noise	Levels (with	out Topo and	barrie	er atter	nuation)									
VehicleType	Leq Peak Hou	ir Leq Day	/	Leq E	vening	Leq	Night		Ldn	C	NEL			
Autos:	70	0.3	68.5		65.5		63.8	3	71.1	1	71.			
Medium Trucks:	71.7 70.1		70.1		64.0		64.9		72.3	3	72.			
Heavy Trucks:	74	.1	73.0		64.0		66.1		74.0)	74.:			
Vehicle Noise:	77	.1	75.7		69.4		69.8	3	77.4	1	77.			
Centerline Distanc	e to Noise Co	ontour (in feet)											
				70	dBA	65	dBA	6	60 dBA	55	dBA			
			Ldn:		125		270		582		1,254			

	FHWA-RD	-77-108 HIG	HWA	Y NOISE	PREDIC	TION MC	DDEL (9/	12/20	021)					
Scenario	2040 NP				Project Name: Irwindale Gateway SP									
Road Name	: Arrow Highw	/ay			Job Number: 15410									
Road Segment	t: e/o I-1605 N	B On-Ramp												
SITE S	SITE SPECIFIC INPUT DATA					NOISE MODEL INPUTS								
Highway Data					Site Con	ditions (l	Hard = 1	0, So	ft = 15)					
Average Daily T	raffic (Adt):	32,309 vehic	les				A	utos:	15					
Peak Hour F	Percentage:	9.19%			Medium Trucks (2 Axles): 15									
Peak Ho	our Volume:	2,969 vehicle	es		He	avy Truck	(3+ Ax	(les):	15					
Veh	icle Speed:	45 mph		-	Vehicle I	Aix								
Near/Far Lan	e Distance:	48 feet		ŀ	Veh	cleTvpe	D	av	Evenina	Niaht	Dailv			
Site Data						A	utos: 7	2.4%	9.2%	18.4%	85.65%			
Born	ior Hoight	0.0 feet			Me	edium Tru	icks: 7	7.7%	4.8%	17.5%	9.12%			
Barrier Type (0-Wa	ler neignt.	0.0 1001			ŀ	leavy Tru	icks: 8	4.3%	2.7%	13.0%	5.23%			
Centerline Dist	t to Barrier:	40.0 feet		-										
Centerline Dist. to	o Observer:	40.0 feet		-	Noise Sc	urce Ele	vations	(in fe	et)					
Barrier Distance to	o Observer:	0.0 feet				Autos:	0.00	00						
Observer Height (A	bove Pad):	5.0 feet			Mediui	n Trucks.	2.28	97	Grade Ad	iuctmont				
Pad	d Elevation:	0.0 feet			Heav	y Trucks:	8.00	J4	Graue Auj	usuneni	0.0			
Road	d Elevation:	0.0 feet			Lane Eq	ivalent l	Distance	e (in f	'eet)					
R	oad Grade:	0.0%				Autos:	32.38	38						
	Left View:	-90.0 degre	ees		Mediur	n Trucks:	32.1	14						
	Right View:	90.0 degre	ees		Heav	y Trucks:	32.14	41						
FHWA Noise Model	Calculations													
VehicleType	REMEL	Traffic Flow	Di	istance	Finite	Road	Fresne	1	Barrier Att	en Ber	m Atten			
Autos:	68.46	2.22	2	2.7	'3	-1.20	-4	4.59	0.0	000	0.000			
Medium Trucks:	79.45	-7.5	1	2.7	'8	-1.20	-4	4.87	0.0	000	0.000			
Heavy Trucks:	84.25	-9.93	3	2.7	'8	-1.20	-	5.56	0.0	000	0.000			
Unmitigated Noise	Levels (witho	ut Topo and	l barn	ier atter	nuation)									
VehicleType L	leq Peak Hour	· Leq Da	iy .	Leq E	vening	Leq N	light		Ldn	CI	VEL			
Autos:	72.	2	70.4		67.4		65.7		73.0)	73.3			
Medium Trucks:	73.	3.5 72.0			65.9	66.8		74.2		2	74.4			
Heavy Trucks:	75.9 74.7			65.8	67.9			75.8		75.9				
Vehicle Noise:	78.	9	77.5		71.2		71.6		79.3	3	79.4			
Centerline Distance	e to Noise Co	ntour (in fee	t)		1									
				70	dBA	65 d	BA	6	0 dBA	55	dBA			
			Ldn:		166		358		770		1,660			

	FHWA-RD)-77-108 HIGHWA	AY NOISI	E PREDIC	TION MO	ODEL (9/	12/202	:1)						
Scenar Road Nam Road Segme		Project Name: Irwindale Gateway SP Job Number: 15410												
SITE	SITE SPECIFIC INPUT DATA					NOISE MODEL INPUTS								
Highway Data				Site Con	ditions (Hard = 1	0, Soft	= 15)						
Average Daily Peak Hour	Autos: 15 Medium Trucks (2 Axles): 15													
Peak H	lour Volume:	2,983 vehicles		He	avy Truci	ks (3+ Ax	(les):	15						
Ve	hicle Speed:	45 mph		Vahiala Mix										
Near/Far La	ne Distance:	48 feet		Vehicle	icleTvne	5)av F	Venina	Night	Daily				
Site Data				VCIII	A	utos: 7	2.4%	9.2%	18.4%	85.59%				
Ba	rrier Height:	0.0 feet		Me	edium Tru	ucks: 7	7.7%	4.8%	17.5%	9.12%				
Barrier Type (0-W	/all, 1-Berm):	0.0		ŀ	leavy Tru	ucks: 8	4.3%	2.7%	13.0%	5.29%				
Centerline Di	st. to Barrier:	40.0 feet		Noise Source Elevations (in feet)										
Centerline Dist.	to Observer:	40.0 feet			Autos	: 0.00	00	,						
Barrier Distance	to Observer:	0.0 feet		Mediur	n Trucks	2.29	97							
Observer Height (Above Pad): 5.0 feet				Heavy Trucks: 8.004 Grade Adjustment: 0.0										
Pa	ad Elevation:	0.0 feet		mour	,	. 0.01								
Roa		Lane Equivalent Distance (in feet)												
	Road Grade: 0.0%					Autos: 32.388								
	Left View: -90.0 degrees				Medium Trucks: 32.114									
	Right View:	90.0 degrees		Heav	y Trucks	: 32.14	41							
FHWA Noise Mode	el Calculation:	S												
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	I B	arrier Atte	en Ber	m Atten				
Autos:	68.46	2.23	2.	73	-1.20	-1	4.59	0.0	00	0.000				
Medium Trucks:	79.45	-7.49	2.1	78	-1.20		4.87	0.0	00	0.000				
Heavy Trucks:	84.25	-9.86	2.1	78	-1.20		5.56	0.0	00	0.000				
Unmitigated Noise	e Levels (with	out Topo and bar	rrier atte	nuation)										
VehicleType	Leq Peak Hou	r Leq Day	Leq E	Evening	Leq N	light	L	.dn	C	VEL				
Autos:	72	.2 70	4	67.4		65.7		73.0		73.3				
Medium Trucks:	73	.5 72.	0	65.9		66.8		74.2		74.4				
Heavy Trucks:	76	.0 74.	8	65.8		67.9		75.9		76.0				
Vehicle Noise:	79	.0 77.	6	71.2		71.7		79.3		79.5				
Centerline Distant	ce to Noise Co	ontour (in feet)	1											
			70	dBA	65 d	IBA	60	dBA	55	dBA				
	167 360		776	1,671										
		CNEL	L:	172		370		797		1,718				

Monday, June 26, 2023
Scenario: E Project Name: Irwindale Gateway SP Job Number: 15410 Road Vame: Arrow Highway Road Segment: e/o Maine Avenue Job Number: 15410 Sitte SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 16,846 vehicles Peak Hour Volume: 1,548 vehicles Vehicle Speed: 45 mph Autos:: 15 Near/Far Lane Distance: 80 feet Vehicle Mix Site Data Autos:: 72.4% 9.2% Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Barrier Distance to Observer: 50.0 feet Medium Trucks: 27.4% 9.2% Barrier Distance to Observer: 50.0 feet Road Grade: 0.0% Noise Source Elevations (in feet) Autos:: 30.414 Medium Trucks: 30.414 Road Grade: 0.0% Autos:: 30.150 FHWA Noise Model Calculations Distance Finite Road Vehicle Type Rewy Trucks: 30.150 FHWA Noise Model Calculations Distance Finite Road Vehicle Type Rewy Trucks: 30.150
Road Name: Arrow Highway Road Segment: elo Maine Avenue Job Number: 15410 Noise Model Calculations Noise Model Calculations Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adl): 16,846 vehicles Peak Hour Porcentage: 9.19% Peak Hour Volume: 1,548 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet Vehicle Mix Vehicle Mix Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Barrier Distance to Observer: 0.0 feet Road Grade: 0.0% Road Grade: 0.0% Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees Heavy Trucks: 8.004 Grade Calcutations 0.01 feet Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees Heavy Trucks: 8.104 FHWA Noise Model Calcutations Vehicle Type RetMare 4.06 </th
Barrier Height: 0.0 feet Moise Source Elevations (in feet) Centerline Dist. to Deserver: 5.0 feet Moise Source Elevations (in feet) Barrier Height: 0.0 feet Moise Source Elevations (in feet) Centerline Dist. to Deserver: 5.0 feet Moise Source Elevations (in feet) Road Grade: 0.0 feet Moise Source Elevations (in feet) Road Grade: 0.0 feet Moise Source (in feet) Road Grade: 0.0 feet Matos: 3.0.4 feavy Trucks: Barrier Height: 0.0 feet Moise Source Elevations (in feet) 5.2 Centerline Dist. to Deserver: 0.0 feet Moise Source Elevations (in feet) 5.2 Observer Height (koove Pad): 5.0 feet Autos: 3.0.4 feevy Trucks: 8.0.04 Grade Adjustment: Road Grade: 0.0 feet Autos: 3.0.4 feevy Trucks: 8.0.04 Grade Adjustment: Road Grade: 0.0 feet Autos: 3.0.4 feevy Trucks: 8.0.04 Grade Adjustment: Road Grade: 0.0 feet Autos: 3.0.4 feevy Trucks: 8.0.04 Grade Adjustment: Road Grade: 0.0 feet Autos:
SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 16,845 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,548 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet Site Data Autos: Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 50.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees Right View: 0.061
Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 16,846 vehicles Autos: 15 Peak Hour Percentage: 9.19% Medium Trucks (2 Avels): 15 Peak Hour Volume: 1,548 vehicles Autos: 15 Vehicle Speed: 45 mph Heavy Trucks (3 + Axles): 15 Site Dat Vehicle Mix Vehicle Mix Vehicle Mix Barrier Height: 0.0 feet Autos: 72.4% 9.2% 18.4% 85.64 Barrier Type (0-Wall, 1-Berm): 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.1% Barrier Dist. to Doserver: 50.0 feet Medium Trucks: 2.7% 13.0% 5.2 Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Medium Trucks: 30.414 4.405 6.846 -0.061 Autos: 30.122 Heavy Trucks: 30.150 FHWA Noise Model Calculations 9.06 degrees Finite Road
Average Daily Traffic (Adt): 16,846 vehicles Autos: 15 Peak Hour Opercentage: 9.19% Medium Trucks (2 Axles): 15 Peak Hour Opure: 1,548 vehicles Medium Trucks (2 Axles): 15 Vehicle Speed: 45 mph Medium Trucks (2 Axles): 15 Site Data Vehicle Type Day Evening Night Dail Barrier Height: 0.0 feet Medium Trucks: 7.7% 4.8% 15.5% 9.2% Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Medium Trucks: 0.0% Medium Trucks:
Peak Hour Percentage: 9.19% Medium Trucks (2 Axles): 15 Peak Hour Volume: 1,548 vehicles Heavy Trucks (2 Axles): 15 Vehicle Speed: 45 mph Heavy Trucks (3 Axles): 15 Site Data Autos: 72.4% 9.2% 18.4% 56.6 Barrier Height: 0.0 feet Medium Trucks: 77.4% 4.8% 17.5% 9.1 Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Medium Trucks: 2.297 Heavy Trucks: 84.3% 2.7% 13.0% 5.2 Centerline Dist. to Doserver: 0.0 feet Autos: 0.00 Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 30.414 Autos: 30.150 FHWA Noise Model Calculations Perseint Earvier Atten Berrier Atten Berrier Atten Berrier Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel
Peak Hour Volume: 1,548 vehicles Vehicle Speed: Heavy Trucks (3+ Axles): 15 Vehicle Speed: 45 mph Vehicle Mix Vehicle Mix Site Data Autos: 72.4% 9.2% 18.4% 85.64 Barrier Type (0-Wall, 1-Berm): 0.0 Autos: 72.4% 9.2% 18.4% 85.64 Barrier Type (0-Wall, 1-Berm): 0.0 Feet Medium Trucks: 77.7% 4.8% 17.5% 9.1 Barrier Type (0-Wall, 1-Berm): 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.1 Barrier Dist. to Boarver: 50.0 feet Moise Source Elevations (in feet) 6.00
Vehicle Speed: 45 mph Vehicle Mix Vehicle Mix Site Data Vehicle Mix Barrier Height: 0.0 feet Autos: 72.4% 9.2% 18.4% 85.63 Barrier Type (0-Wall, 1-Berm): 0.0 Medium Trucks: 77.7% 4.8% 17.5% 9.1% Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.2% Centerline Dist. to Barrier: 50.0 feet Medium Trucks: 2.297 13.0% 5.2% Observer Height (Above Pad): 0.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Medium Trucks: 30.12 Heavy Trucks: 30.12 Road Elevation: 0.0 feet Medium Trucks: 30.122 Heavy Trucks: 30.122 Heavy Trucks: 90.0 degrees Heavy Trucks: 30.122 Heavy Trucks: 30.122 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berrier Atten
Near/Far Lane Distance: 80 feet VehicleType Day Evening Night Dail Site Data Autos: 72.4% 9.2% 18.4% 85.6% Barrier Height: 0.0 feet Medium Trucks: 77.4% 4.8% 17.5% 9.1% Barrier Type (0-Wall, 1-Berm): 0.0 0.0 Medium Trucks: 77.4% 4.8% 17.5% 9.1% Centerline Dist. to Barrier: 50.0 feet Molse Source Elevations (in feet) 6.0% Medium Trucks: 2.297 Observer: 0.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Medium Trucks: 30.414 4.105 0.122 Heavy Trucks: 8.004 Grade Adjustment: 0.0 4.105 30.150 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten VehicleType REMEL 1.04 3.20 -1.20 -4.65 0.000 0.0
Site Data Autos: 72.4% 9.2% 18.4% 85.61 Barrier Type (0-Wall, 1-Berm): 0.0 6 Medium Trucks: 77.7% 4.8% 17.5% 9.12 Barrier Type (0-Wall, 1-Berm): 0.0 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.22 Centerline Dist. to Barrier: 50.0 feet Noise Source Elevations (in feet) Autos: 0.000 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 Road Grade: 0.0% Left View: -90.0 degrees Heavy Trucks: 30.14 Road Grade: 0.0% Left View: 90.0 degrees Heavy Trucks: 30.122 FHWA Noise Model Calculations VeliceType REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Berrier Atten Autos: 79.45 -10.34 3.20 -1.20 -4.65 0.000 0
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Barrier: 50.0 feet Barrier Distance to Observer: 50.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees Right View: 90.0 degrees FHWA Noise Model Calculations Ustance VehicleType REMEL Traffic Flow Autos: 6.061 3.14 -1.20 -4.65 0.000
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 84.3% 2.7% 13.0% 5.23 Centerline Dist. to Barrier: 50.0 feet Noise Source Elevations (in feet) Autos: 0.00 Barrier Dist. to Observer: 0.0 feet Autos: 0.00 Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Medium Trucks: 3.24 Autos: 0.04 Autos: 0.05 Autos: 0.04 Autos:
Centerline Dist. to Barrier: 50.0 feet Noise Source Elevations (in feet) Centerline Dist. to Observer: 0.0 feet Autos: 0.00 Barrier Distance to Observer: 0.0 feet Autos: 0.00 Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Left View: 90.0 degrees Autos: 30.414 Left View: 90.0 degrees Medium Trucks: 30.150 E FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Ferseni Barrier Atten Berrier Atten Berrier Atten Berrier Atten Berrier Atten Berrier Atten Medium Trucks: 0.000 0.0
Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Barrier Distance to Observer: 0.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Autos: 30.414 Medium Trucks: 30.414 Left View: 90.0 degrees Right View: 90.0 degrees Heavy Trucks: 30.122 Heavy Trucks: 30.150 FHWA Noise Model Calcutations Vehicle Type Vehicle Type REMEL Traffic Flow Autos: 68.46 -0.61 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Autos: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: -90.0 degrees Medium Trucks: 30.122 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrer Atten Autos: 68.46 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Lane Equivalent Distance (in feet)
Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0 % Autos: 30.414 Left View: -90.0 degrees Medium Trucks: 30.122 Right View: -90.0 degrees Heavy Trucks: 30.150 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Autos: 68.46 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0% Autor: 30.414 Left View: -90.0 degrees Medium Trucks: 30.122 Right View: 90.0 degrees Heavy Trucks: 30.150 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Autos: 68.46 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
Road Grade: 0.0% Autos: 30.414 Left View: -90.0 degrees Medium Trucks: 30.122 Heavy Trucks: 30.150 Heavy Trucks: 30.150 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier Atten Vehicle Type REMEL 7.945 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
Left View: -90.0 degrees Medium Trucks: 30.122 Right View: 90.0 degrees Heavy Trucks: 30.150 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
Right View: 90.0 degrees Heavy Trucks: 30.150 FHWA Noise Model Calculations
FHWA Noise Model Calculations Figure 1 REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berner Atten Medium Trucks: 68.46 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atten Autos: 68.46 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.67 0.000 0.0
Autos: 68.46 -0.61 3.14 -1.20 -4.65 0.000 0.0 Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
Medium Trucks: 79.45 -10.34 3.20 -1.20 -4.87 0.000 0.0
Heavy Trucks: 84.25 -12.76 3.19 -1.20 -5.43 0.000 0.0
Unmitigated Noise Levels (without Topo and barrier attenuation)
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL
Autos: 69.8 68.0 65.0 63.3 70.6 7
Medium Trucks: 71.1 69.6 63.5 64.4 71.8 7
Heavy Trucks: 73.5 72.3 63.4 65.5 73.4 7
Vehicle Noise: 76.5 75.1 68.8 69.2 76.9 7
Centerline Distance to Noise Contour (in feet)
70 dBA 65 dBA 60 dBA 55 dBA
Ldn: 143 309 665 1,4
CNEL: 147 317 684 1,4

					TILEBIO		(,		
Scenario	C EP					Project	Name:	Irwinda	ale Gatewa	iy SP	
Road Name	: Arrow High	way				Job N	umber:	15410			
Road Segmen	t: e/o Maine A	venue									
SITE S	PECIFIC IN	PUT DATA				N	IOISE I	NODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt):	17,155 vehicl	es					Autos:	15		
Peak Hour F	Percentage:	9.19%			Me	dium Tri	ucks (2 /	Axles):	15		
Peak Ho	our Volume:	1,577 vehicle	s		He	avy Tru	cks (3+7	Axles):	15		
Veh	icle Speed:	45 mph			Vehicle I	Mix					
Near/Far Lan	e Distance:	80 feet		T.	Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.43
Barr	ier Height:	0.0 feet			M	edium T	rucks:	77.7%	4.8%	17.5%	9.10
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy T	rucks:	84.3%	2.7%	13.0%	5.47
Centerline Dist	to Barrier:	50.0 feet			Noise Sr	ource Fl	evation	s (in fi	eef)		
Centerline Dist. to	o Observer:	50.0 feet		F		Auto	s: 0.	000			
Barrier Distance to	o Observer:	0.0 feet			Mediu	m Truck	s: 2.	297			
Observer Height (A	bove Pad):	5.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	justment	: 0.0
Pa	d Elevation:	0.0 feet		-			Distant	<i>C</i>	f 4)		
Road	d Elevation:	0.0 feet		Ľ.	Lane Eq	uivaient	Distant	ce (in	reet)		
R	oad Grade:	0.0%			Madiu	Auto	s: 30.	414			
	Len View:	-90.0 degre	es		Heav	n Truck	s. 30. e [,] 30.	122			
	Ngni view.	90.0 degre	63		near	y much	3. 00.	100			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	68.46	-0.54		3.1	4	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	79.45	-10.27		3.2	0	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-12.48		3.1	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er atten	uation)						
VehicleType I	eq Peak Hou	r Leq Day	/	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	69	.9	68.0		65.1		63.3	3	70.	7	71
Medium Trucks:	71	.2	69.7		63.6		64.4	1	71.9	9	72
Heavy Trucks:	73	.8	72.6		63.6		65.7	7	73.	7	73
Vehicle Noise:	76	.7	75.3		68.9		69.4	1	77.	D	77
Centerline Distance	e to Noise Co	ontour (in feet)								
				70 0	dBA	65	dBA	(50 dBA	55	dBA
			Ldn:		147		317		682	2	1,469
		С	NEL:		151		325		701		1.510

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC		ODEL (9	12/20	021)		
Scenar Road Nan Road Segme	rio: 2028 NP ne: Arrow Highv nt: e/o Maine A	vay				Project Job N	Name: Ir umber: 1	winda 5410	ale Gateway	SP	
SITE	SPECIFIC IN	PUT DATA				N	IOISE M	ODE		;	
Highway Data				5	Site Con	ditions	(Hard = 1	0, Sc	oft = 15)		
Average Daily	Traffic (Adt):	29,441 vehicle	s				A	utos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tr	ucks (2 A	(les):	15		
Peak H	lour Volume:	2,706 vehicles	6		He	avy Tru	cks (3+ A)	des):	15		
Ve	hicle Speed:	45 mph		1	Vehicle I	Mix					
Near/Far La	ane Distance:	80 feet		F	Veh	icleType	L)ay	Evening	Night	Daily
Site Data						,	Autos: 7	2.4%	9.2%	18.4%	85.65
Ba	rrier Height:	0.0 feet			Me	edium T	rucks: 7	7.7%	4.8%	17.5%	9.129
Barrier Type (0-V	Vall, 1-Berm):	0.0			ŀ	leavy T	rucks: 8	4.3%	2.7%	13.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		,	Voise Sc	urce Fl	evations	(in fe	pet)		
Centerline Dist.	to Observer:	50.0 feet		ť	10/30 00	Auto	e 0.0				
Barrier Distance	to Observer:	0.0 feet			Modiu	n Truck	s. 0.0	50 27			
Observer Height	(Above Pad):	5.0 feet			Heav	v Truck	s: 8.0	14 14	Grade Adi	ustment.	0.0
P	ad Elevation:	0.0 feet			mour	y maon	0.0				
Ro	ad Elevation:	0.0 feet		4	ane Equ	uivalen	Distance	e (in i	feet)		
	Road Grade:	0.0%				Auto	s: 30.4	14			
	Left View:	-90.0 degree	s		Mediui	m Truck	s: 30.1	22			
	Right View:	90.0 degree	s		Heav	у тиск	s: 30.1	50			
FHWA Noise Mod	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresne	1	Barrier Atte	n Ber	m Atten
Autos:	68.46	1.81		3.14	4	-1.20	-	4.65	0.0	00	0.00
Medium Trucks:	79.45	-7.91		3.20	D	-1.20	-	4.87	0.0	00	0.00
Heavy Trucks:	84.25	-10.33		3.19	9	-1.20	-	5.43	0.0	00	0.00
Unmitigated Nois	e Levels (witho	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	·	Leg Ev	/ening	Leq	Night		Ldn	CI	VEL
Autos:	72.	.2	70.4		67.4		65.7		73.0		73.
Medium Trucks:	73.	.5	72.0		65.9		66.8		74.2		74.
Heavy Trucks:	75.	.9	14.7		65.8		67.9		75.8		76.
venicle Noise:	78.	.9	//.5		71.2		71.6		79.3		79.
Centerline Distan	ce to Noise Co	ntour (in feet)									
			L	70 c	1BA	65	dBA	6	i0 dBA	55	dBA
			Ldn:		208		448		965		2,079

	FHWA-RD	0-77-108 HIGH\	VAY N	IOISE	PREDIC	TION MO	DEL (9	/12/20)21)		
Scenan Road Nam Road Segmen	io: 2028 WP ie: Arrow High	way				Project N Job Nur	ame: Ir nber: 1	winda 5410	le Gatewa	iy SP	
Road Segmen				-						_	
SITE :	SPECIFIC IN	PUT DATA			Sito Con	NC ditions (b	ISE M	ODE	<u>L INPUT</u>	5	
Ingilway Data					Sile Com			0, 30	45		
Average Daily	I raffic (Adt):	29,750 venicle	5		Ma	dium Truc	A 40 (2 A)	utos:	15		
Peak Hour	Percentage:	9.19%			Med	alum Truck	KS (2 A)	(les):	15		
Реак п	iour voiume:	2,734 venicies			пе	avy muck	S (37 A.	kies).	15		
Ve Noor/Eor Lo	nicie Speed:	45 mpn			Vehicle N	<i>lix</i>					
Near/Far La	ne Distance:	80 teet			Vehi	cleType	Ľ	Day	Evening	Night	Daily
Site Data						Au	tos: 7	2.4%	9.2%	18.49	6 85.52%
Bai	rrier Height:	0.0 feet			Me	edium Tru	cks: 7	7.7%	4.8%	17.5	6 9.11%
Barrier Type (0-W	/all, 1-Berm):	0.0			F	leavy Tru	cks: 8	34.3%	2.7%	13.09	6 5.37%
Centerline Dis	st. to Barrier:	50.0 feet		- H	Noise So	urce Flev	ations	(in fe	ef)		
Centerline Dist.	to Observer:	50.0 feet		Ë		Autos:	0.0	00			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	2.2	97			
Observer Height (Above Pad):	5.0 feet			Heav	v Trucks:	8.0	04	Grade Ad	iustmer	nt: 0.0
Pa	ad Elevation:	0.0 feet			neav	y macks.	0.0			,	
Roa	ad Elevation:	0.0 feet		1	Lane Equ	ivalent D	istance	e (in f	ieet)		
I	Road Grade:	0.0%				Autos:	30.4	14			
	Left View:	-90.0 degree	5		Mediur	n Trucks:	30.1	22			
	Right View:	90.0 degree	5		Heav	y Trucks:	30.1	50			
FHWA Noise Mode	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	e/ .	Barrier Att	en Be	erm Atten
Autos:	68.46	1.85		3.1	4	-1.20	-	4.65	0.0	000	0.000
Medium Trucks:	79.45	-7.87		3.2	0	-1.20	-	4.87	0.0	000	0.000
Heavy Trucks:	84.25	-10.17		3.1	9	-1.20	-	5.43	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and L	arrier	atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	1	Leq E	vening	Leq Ni	ight		Ldn	(CNEL
Autos:	72	.2 7	0.4		67.5		65.7		73.	1	73.4
Medium Trucks:	73	.6 7	2.1		66.0		66.8		74.	2	74.4
Heavy Trucks:	76	.1 7	4.9		65.9		68.0		76.	0	76.1
Vehicle Noise:	79	.0 7	7.6		71.3		71.7		79.4	4	79.6
Centerline Distance	ce to Noise Co	ntour (in feet)	-	70	-10.4	CF -4			0 -10 4		5 - 1D A
			da	70 0	0BA 014	05 dE	5A 45.4	6	U dBA	5	2 46A
			un:		217		404		1 000		2,109
		CN	EL:		217		407		1,006	,	2,108

Monday, June 26, 2023

	FHWA-RD	-77-108 HIGH	WAY NC	DISE PI	REDIC	TION M	ODEL (S	/12/2	021)		
Scenar Road Nam Road Segme	io: 2040 NP e: Arrow Highv nt: e/o Maine A	vay venue				Project Job N	Name: I umber: 1	winda 5410	ale Gateway	/ SP	
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUTS	5	
Highway Data				Sit	e Con	ditions ((Hard =	10, So	oft = 15)		
Average Daily Peak Hour Peak H	Traffic (Adt): Percentage: lour Volume:	44,554 vehicle 9.19% 4,095 vehicles	s		Meo Hea	dium Tru avy Truc) Icks (2 A Iks (3+ A	Autos: xles): xles):	15 15 15		
Ve	hicle Speed:	45 mph		14-							
Near/Far La	ne Distance:	80 feet		ve	Vehi	l ix cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Bai	rrier Heiaht:	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			H	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.23%
Centerline Di	st. to Barrier:	50.0 feet		No	ise So	urce El	evations	(in f	eet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	s: 0.0	00			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	s: 2.2	97			
Observer Height (Above Pad):	5.0 feet			Heav	y Trucks	s: 8.0	04	Grade Adj	ustmen	t: 0.0
Pa	ad Elevation:	0.0 feet		-							
Roa	ad Elevation:	0.0 feet		Lai	ne Equ	iivalent	Distanc	e (in	teet)		
	Road Grade:	0.0%				Autos	s: 30.4	14			
	Left View:	-90.0 degree	s		Mediur	n Trucks	s: 30.1	22			
	Right View:	90.0 degree	s		Heav	y Trucks	s: 30.1	50			
FHWA Noise Mode	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresn	e/	Barrier Atte	en Be	rm Atten
Autos:	68.46	3.61		3.14		-1.20		4.65	0.0	00	0.000
Medium Trucks:	79.45	-6.11		3.20		-1.20		4.87	0.0	00	0.000
Heavy Trucks:	84.25	-8.53		3.19		-1.20		-5.43	0.0	00	0.000
Unmitigated Noise	e Levels (witho	out Topo and I	barrier a	ttenua	tion)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Ever	ning	Leq	Night		Ldn	C	NEL
Autos:	74.	.0 7	72.2		69.2		67.5		74.8		75.1
Medium Trucks:	75.	.3 7	73.8		67.7		68.6		76.0		76.2
Heavy Trucks:	77.	.7	76.5		67.6		69.7		77.6		77.8
Vehicle Noise:	80.	.7	79.3		73.0		73.4		81.1		81.3
Centerline Distance	ce to Noise Co	ntour (in feet)									
				70 dB/	A	65 0	зBA		50 dBA	55	ō dBA
			_dn:		274		590		1,272		2,740
		CN	IEL:		282		607		1,307		2,816

						(-		,		
Scenario	2040 WP				Project N	ame: Ir	winda	ale Gatewa	y SP	
Road Name	e: Arrow Highwa	iy			Job Nur	nber: 1	5410			
Road Segmen	t: e/o Maine Ave	enue								
SITE S	PECIFIC INP	UT DATA			NO	ISE M	ODE	L INPUT	5	
Highway Data				Site Con	ditions (H	lard = 1	10, Sc	oft = 15)		
Average Daily 1	raffic (Adt): 44	4,863 vehicles				A	utos:	15		
Peak Hour I	Percentage:	9.19%		Me	dium Truc	ks (2 A	xles):	15		
Peak Ho	our Volume: 4,	,123 vehicles		Hea	avy Truck	s (3+ A	xles):	15		
Veh	icle Speed:	45 mph	ŀ	Vehicle N	lix					
Near/Far Lar	e Distance:	80 feet	ŀ	Vehi	cleType	L	Day	Evening	Night	Daily
Site Data					Au	tos: T	2.4%	9.2%	18.4%	85.57
Bar	rier Heiaht:	0.0 feet		Me	dium True	cks: 7	7.7%	4.8%	17.5%	9.12
Barrier Type (0-Wa	all, 1-Berm):	0.0		F	leavy Tru	cks: 8	34.3%	2.7%	13.0%	5.32
Centerline Dis	t. to Barrier:	50.0 feet	ŀ	Noico So	urco Elos	ations	(in fr	ootl		
Centerline Dist. t	o Observer:	50.0 feet	ŀ	140/36 30	Autos:	0.0	00	eel)		
Barrier Distance t	o Observer:	0.0 feet		Modiur	n Trucks:	2.0	00			
Observer Height (/	Above Pad):	5.0 feet		Heav	v Trucks:	8.0	04	Grade Ad	iustment	. 0 0
Pa	d Elevation:	0.0 feet		neav	y macks.	0.0	04	0/000/10	aounom	. 0.0
Roa	d Elevation:	0.0 feet		Lane Equ	ivalent D	istanc	e (in 1	feet)		
F	load Grade:	0.0%			Autos:	30.4	14			
	Left View:	-90.0 degrees		Mediur	n Trucks:	30.1	22			
	Right View:	90.0 degrees		Heav	y Trucks:	30.1	50			
FHWA Noise Mode	I Calculations									
VehicleType	REMEL T	raffic Flow Di	istance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	68.46	3.64	3.1	4	-1.20	-	4.65	0.0	000	0.00
Medium Trucks:	79.45	-6.09	3.2	20	-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	84.25	-8.43	3.1	9	-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise	Levels (withou	t Topo and barr	ier atter	nuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq Ni	ght		Ldn	C	NEL
Autos:	74.0	72.2		69.2		67.5		74.8	3	75
Medium Trucks:	75.4	73.8		67.7		68.6		76.0)	76
Heavy Trucks:	77.8	76.7		67.7		69.8		77.7	7	77
Vehicle Noise:	80.8	79.4		73.1		73.5		81.1		81.
Centerline Distance	e to Noise Cont	tour (in feet)	70	dBA	65 de	24	6	O dBA	55	dBA
		l dn:	. ,0	277	05 UE	506	C	1 29/	35	2 76
		CNEL ·		211		090		1,284		2,70
		GNLL.		204		013		1,320		2,04

APPENDIX 7.2:

OPTION 2 - OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS



This page intentionally left blank



	FHWA-RI	D-77-108 HIGI	IWAY N	NOISE F	PREDIC	TION MO	DEL (9	/12/2	021)		
Scenar Road Nam Road Segme	io: E ne: Avenida Ba nt: n/o Arrow H	arbosa Highway				Project N Job Nui	lame: li mber: 1	winda 5410	ale Gateway	/ SP	
SITE	SPECIFIC IN	PUT DATA				NC	DISE M	ODE		6	
Highway Data				S	ite Con	ditions (H	lard =	10, So	oft = 15)		
Average Daily Peak Hour	Traffic (Adt): Percentage:	10,210 vehic 9.19%	es		Me	dium Truc	A ks (2 A	Autos: xles):	15 15		
Peak H	lour Volume:	938 vehicle	es		He	avy Truck	s (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		V	ehicle I	<i>lix</i>					
Near/Far La	ne Distance:	48 feet		-	Vehi	cleType	1	Day	Evening	Night	Daily
Site Data						Au	itos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	cks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: I	84.3%	2.7%	13.0%	5.23%
Centerline Di	st. to Barrier:	40.0 feet		N	oise So	urce Elev	ations	(in fi	pet)		
Centerline Dist.	to Observer:	40.0 feet				Autos'	0.0	00	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height	Above Pad):	5.0 feet			Heav	v Trucks:	8.0	04	Grade Adj	ustmen	t: 0.0
Pa	ad Elevation:	0.0 feet									
Roi	ad Elevation:	0.0 feet		Li	ane Equ	iivalent L	Distanc	e (in	feet)		
	Road Grade:	0.0%				Autos:	32.3	888			
	Left View:	-90.0 degre	es		Meaiur	n Trucks:	32.1	14			
	Right view:	90.0 degre	es		neav	y TTUCKS.	32.1	41			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	e/	Barrier Atte	en Be	rm Atten
Autos:	66.51	-2.28	5	2.73		-1.20		4.59	0.0	00	0.000
Medium Trucks:	77.72	-12.00)	2.78		-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	82.99	-14.42	-	2.78		-1.20		-5.56	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	r attenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Da	y .	Leq Eve	ening	Leq N	ight		Ldn	C	NEL
Autos:	65	5.8	63.9		61.0		59.2		66.6		66.9
Medium Trucks:	67	7.3	65.8		59.7		60.6		68.0		68.1
Heavy Trucks:	70).1	69.0		60.0		62.1		70.1		70.2
Vehicle Noise:	72	2.9	71.5		65.0		65.6		73.2		73.4
Centerline Distant	ce to Noise Ce	ontour (in fee	t)								
				70 dE	BA	65 dE	BA	6	60 dBA	55	dBA
			Ldn:		66		141		304		656
		C	NEL:		67		145		313		673

	FHWA-RD	9-77-108 HIGH	WAY N	OISE P	REDIC	TION MO	DEL (9/	12/20)21)		
Scenario	p: EP					Project N	ame: Irv	vinda	le Gatewa	y SP	
Road Name	e: Avenida Ba	rbosa				Job Nur	nber: 15	410			
Road Segmen	t: n/o Arrow H	lighway									
SITE S	SPECIFIC IN	PUT DATA				NC	ISE MO	DE		s	
Highway Data				Si	ite Con	ditions (H	lard = 10), So	ft = 15)		
Average Daily	Traffic (Adt):	10,353 vehicle	s				AL	itos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Truc	ks (2 Ax	les):	15		
Peak He	our Volume:	951 vehicles	;		He	avy Truck	s (3+ Ax	les):	15		
Vel	nicle Speed:	40 mph		Ve	ehicle I	Nix					
Near/Far Lar	ne Distance:	48 feet			Vehi	cleType	D	ay	Evening	Night	Daily
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.53%
Bar	rier Heiaht:	0.0 feet			Me	edium Tru	cks: 7	7.7%	4.8%	17.5%	9.09%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 84	4.3%	2.7%	13.0%	5.38%
Centerline Dis	t. to Barrier:	40.0 feet		AL.	nico Sa	urco Elos	ations	in fo	of)		
Centerline Dist. t	o Observer:	40.0 feet		740	0136 30	Autos:	0.00	0	eij		
Barrier Distance t	o Observer:	0.0 feet			Mediu	n Trucks	2.20	7			
Observer Height (/	Above Pad):	5.0 feet			Heav	v Trucks:	8.00	́л	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet			neav	y mucho.	0.00	-			0.0
Roa	d Elevation:	0.0 feet		Lá	ane Equ	uivalent D	istance	(in f	eet)		
F	Road Grade:	0.0%				Autos:	32.38	8			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	32.11	4			
	Right View:	90.0 degree	s		Heav	y Trucks:	32.14	1			
FHWA Noise Mode	I Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel		Barrier Att	en Ber	m Atten
Autos:	66.51	-2.22		2.73		-1.20	-4	.59	0.0	000	0.00
Medium Trucks:	77.72	-11.95		2.78		-1.20	-4	.87	0.0	000	0.00
Heavy Trucks:	82.99	-14.23		2.78		-1.20	-5	.56	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day	L	.eq Eve	ening	Leq N	ght		Ldn	CI	VEL
Autos:	65	.8	64.0		61.0		59.3		66.6	3	66.9
Medium Trucks:	67	.3	65.8		59.7		60.6		68.0)	68.
Heavy Trucks:	70	.3	69.2		60.2		62.3		70.3	3	70.
Vehicle Noise:	73	.0	71.6		65.1		65.7		73.3	3	73.
Contorlino Distanc	e to Noise Co	ntour (in feet)	-	70.15		0.5 /					
Centernine Distanc				/// dF	44	65 dF	SA	6	U OBA	55	aBA
Centernite Distanc				70 01	~ ~	00 02			0.10		0.00
oenternite Distanc			Ldn:	10 01	67	00 02	144		310		668

Monday, June 26, 2023

	FHWA-RD	0-77-108 HIGHV	AY NOI	SE PREDI		ODEL (9	/12/20)21)		
Scenario	2028 NP				Project	Name: Ir	winda	le Gatewa	y SP	
Road Name	: Avenida Ba	rbosa			Job Ni	imber: 1	5410			
Road Segmen	t: n/o Arrow H	lighway								
SITE S	PECIFIC IN	PUT DATA			N	OISE M	ODE	L INPUT	5	
Highway Data				Site Co.	nditions (Hard = 1	0, So	ft = 15)		
Average Daily T	raffic (Adt):	17,107 vehicles				A	utos:	15		
Peak Hour F	Percentage:	9.19%		M	edium Tru	cks (2 A	xles):	15		
Peak Ho	our Volume:	1,572 vehicles		H	eavy Truc	ks (3+ A	xles):	15		
Veh	icle Speed:	40 mph		Vehicle	Mix					
Near/Far Lan	e Distance:	48 feet		Vel	nicleType	L	Day	Evening	Night	Daily
Site Data					A	utos: 7	2.4%	9.2%	18.4%	85.65%
Barr	rier Heiaht [.]	0.0 feet		٨	ledium Tr	ucks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all. 1-Berm);	0.0			Heavy Tr	ucks: 8	84.3%	2.7%	13.0%	5.23%
Centerline Dist	t. to Barrier:	40.0 feet		Noico S	ourco Ek	watione	(in fo	of		
Centerline Dist. to	o Observer:	40.0 feet		NOISE 3	Autos		00	eij		
Barrier Distance to	o Observer:	0.0 feet		Madi	Autos	. 0.0	00			
Observer Height (A	Above Pad):	5.0 feet		Heat	w Trucks	. 2.2	57 04	Grade Ad	iustment	. 0 0
Pa	d Elevation:	0.0 feet		Tiea	vy mucks	. 0.0	04	Grade Adj	usunen	. 0.0
Roa	d Elevation:	0.0 feet		Lane Ec	uivalent	Distance	e (in f	eet)		
R	oad Grade:	0.0%			Autos	: 32.3	88			
	Left View:	-90.0 degrees		Mediu	ım Trucks	: 32.1	14			
	Right View:	90.0 degrees		Hea	vy Trucks	: 32.1	41			
FHWA Noise Model	Calculation:	5		1						
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	e Road	Fresne	e/ 1	Barrier Atte	en Ber	m Atten
Autos:	66.51	-0.03		2.73	-1.20	-	4.59	0.0	000	0.00
Medium Trucks:	77.72	-9.76		2.78	-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-12.18		2.78	-1.20	-	5.56	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and b	arrier at	tenuation)						
VehicleType I	Leq Peak Hou	r Leq Day	Leo	q Evening	Leq I	Vight		Ldn	CI	NEL
Autos:	68	.0 6	6.2	63.2	2	61.5		68.8	3	69.
Medium Trucks:	69	.5 6	8.0	61.9)	62.8		70.2	2	70.4
Heavy Trucks:	72	.4 7	1.2	62.3	3	64.4		72.3	3	72.4
Vehicle Noise:	75	.1 7	3.8	67.3	3	67.8		75.5	5	75.0
Centerline Distance	e to Noise Co	ontour (in feet)								
				70 dBA	65 0	1BA	6	0 dBA	55	dBA
		L	dn:	92		199		429		925

	FHWA-RI	D-77-108 HIGH	WAYI	NOISE	PREDIC		IODEL	(9/12/2	021)		
Scenario. Road Name. Road Segment.	2028 WP Avenida Ba n/o Arrow H	rbosa lighway				Project Job N	Name: lumber:	Irwind 15410	ale Gatewa	iy SP	
SITE S	PECIFIC IN	IPUT DATA				N	IOISE	MODE	L INPUT	s	
Highway Data				5	Site Con	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily Ti	raffic (Adt):	17,250 vehicle	es					Autos.	15		
Peak Hour P	ercentage:	9.19%			Med	dium Tr	ucks (2	Axles).	15		
Peak Ho	ur Volume:	1,585 vehicle	5		Hea	avy Tru	cks (3+	Axles).	15		
Vehi	cle Speed:	40 mph			/ohiclo I	liv					
Near/Far Lane	e Distance:	48 feet		F	Vehi	cleType	,	Day	Evening	Nigh	t Daily
Site Data				-			Autos:	72.4%	9.2%	18.4	% 85.58%
Barr	ier Heiaht:	0.0 feet			Me	dium T	rucks:	77.7%	4.8%	17.5	5% 9.11%
Barrier Type (0-Wa	I, 1-Berm):	0.0			H	leavy T	rucks:	84.3%	5 2.7%	13.0	0% 5.32%
Centerline Dist.	to Barrier:	40.0 feet		-	Voise So	urce F	levatio	ns (in f	pet)		
Centerline Dist. to	Observer:	40.0 feet		÷	10.00 00	Auto	s' 0	000			
Barrier Distance to	Observer:	0.0 feet			Medium	n Truck	s. 0 e 2	207			
Observer Height (A	bove Pad):	5.0 feet			Heav	v Truck	s. 2	004	Grade Ad	iustme	ent: 0.0
Pad	Elevation:	0.0 feet			mour.	,	0. 0			,	
Road	Elevation:	0.0 feet		4	Lane Equ	iivalen	t Distar	nce (in	feet)		
R	oad Grade:	0.0%				Auto	s: 32	.388			
	Left View:	-90.0 degree	es		Mediun	n Truck	s: 32	2.114			
F	Right View:	90.0 degree	es		Heav	y Truck	s: 32	2.141			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en E	Berm Atten
Autos:	66.51	0.00		2.73	3	-1.20		-4.59	0.0	000	0.000
Medium Trucks:	77.72	-9.73		2.7	8	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-12.07		2.7	8	-1.20		-5.56	0.0	000	0.000
Unmitigated Noise	evels (with	out Topo and	barrie	r atten	uation)						
VehicleType L	eq Peak Hou	ir Leq Day	r	Leg Ev	vening	Leq	Night		Ldn		CNEL
Autos:	68	.0	66.2		63.2		61	.5	68.	В	69.2
Medium Trucks:	69	.6	68.0		62.0		62	.8	70.3	2	70.4
Heavy Trucks:	72	5	71.3		62.4		64	.5	72.4	4	72.5
Vehicle Noise:	75	.2	73.8		67.3		67	.9	75.	5	75.7
Centerline Distance	to Noise Co	ontour (in feet,)								
		-		70 c	dBA	65	dBA	1	60 dBA		55 dBA
			Ldn:		93		20	1	434		935
		C	VEL:		96		20	7	446	i	960

	FHWA-R	D-77-108 HIG	HWAY	NOISE	PREDIC	TION MO	DEL (9/	12/2021	1)		
Scenari Road Nam Road Segmer	o: 2040 NP e: Avenida Ba nt: n/o Arrow I	arbosa Highway				Project N Job Nur	ame: Irv nber: 15	vindale i410	Gateway	/ SP	
SITE	SPECIFIC IN	NPUT DATA				NO	ISE MO	DDEL I	INPUTS	5	
Highway Data				S	Site Con	ditions (H	lard = 10	0, Soft	= 15)		
Average Daily Peak Hour	Traffic (Adt): Percentage:	25,384 vehic 9.19%	les		Ме	dium Truc	Aı ks (2 Ax	utos: les):	15 15		
Peak H	our Volume:	2,333 vehicle	es		He	avy Truck	s (3+ Ax	les):	15		
Ve	hicle Speed:	40 mph		L	/ehicle	Mix					
Near/Far La	ne Distance:	48 feet		F	Veh	icleType	D	ay E	vening	Night	Daily
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.65%
Bai	rier Heiaht:	0.0 feet			M	edium Tru	cks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			1	Heavy Tru	cks: 84	4.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	40.0 feet			loise Sr	ource Elev	ations	(in feet)		
Centerline Dist.	to Observer:	40.0 feet		- F		Autos	0.00	0	/		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks	2 20	17			
Observer Height (Above Pad):	5.0 feet			Heal	W Trucks	8.00	M G	rade Adi	ustment	t: 0.0
Pa	ad Elevation:	0.0 feet			near	ly mucho.	0.00		,		. 0.0
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent D	istance	(in fee	t)		
F	Road Grade:	0.0%				Autos:	32.38	38			
	Left View:	-90.0 degre	ees		Mediu	m Trucks:	32.11	14			
	Right View:	90.0 degre	ees		Heav	vy Trucks:	32.14	11			
FHWA Noise Mode	el Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	l Ba	rrier Atte	en Bei	rm Atten
Autos:	66.51	1.6	3	2.73	3	-1.20	-4	1.59	0.0	00	0.000
Medium Trucks:	77.72	-8.0	5	2.78	3	-1.20	-4	1.87	0.0	00	0.000
Heavy Trucks:	82.99	-10.4	7	2.78	3	-1.20	-5	5.56	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	d barrie	er attenu	uation)						-
VehicleType	Leq Peak Ho	ur Leq Da	iy 🛛	Leq Ev	rening	Leq Ni	ight	Lo	dn	С	NEL
Autos:	69	9.7	67.9		64.9		63.2		70.5		70.8
Medium Trucks:	71	1.3	69.7		63.6		64.5		71.9		72.1
Heavy Trucks:	74	4.1	72.9		64.0		66.1		74.0		74.1
Vehicle Noise:	76	5.9	75.5		69.0		69.5		77.2		77.3
Centerline Distance	e to Noise C	ontour (in fee	et)								
				70 d	IBA	65 dE	BA	60 0	dBA	55	dBA
			Ldn:		120		259		559		1,203
		0	ONEL:		124		266		574		1,236

	FHWA-RD	0-77-108 HIGHWA	AY NOIS	SE PREDIC	TION MO	DEL (9/12	/2021)		
Scenario	2040 WP				Project N	ame: Irwir	dale Gatewa	y SP	
Road Name	e: Avenida Ba	rbosa			Job Nur	nber: 1541	0		
Road Segment	t: n/o Arrow H	lighway							
SITE S	PECIFIC IN	PUT DATA			NO	ISE MOD	EL INPUT	5	
Highway Data				Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily T	raffic (Adt):	25,527 vehicles				Auto	s: 15		
Peak Hour F	Percentage:	9.19%		Me	dium Truc	ks (2 Axle:	s): 15		
Peak Ho	our Volume:	2,346 vehicles		He	avy Truck	s (3+ Axle:	s): 15		
Veh	icle Speed:	40 mph		Vehicle I	lix				
Near/Far Lan	e Distance:	48 feet		Vehi	cleType	Day	Evening	Night	Daily
Site Data					Au	tos: 72.4	% 9.2%	18.4%	85.60%
Barr	rier Heiaht:	0.0 feet		Me	edium Truc	cks: 77.7	% 4.8%	17.5%	9.11%
Barrier Type (0-Wa	all, 1-Berm):	0.0		ŀ	leavy Truc	cks: 84.3	3% 2.7%	13.0%	5.29%
Centerline Dist	t. to Barrier:	40.0 feet		Noise Se	urce Elou	ations (in	foot)		
Centerline Dist. to	o Observer:	40.0 feet		NOISE SU	Autos:	0.000	leelj		
Barrier Distance to	o Observer:	0.0 feet		Mediu	n Trucks	2 207			
Observer Height (A	bove Pad):	5.0 feet		Heav	v Trucks	8 004	Grade Ad	iustment:	0.0
Pad	d Elevation:	0.0 feet		mour	,	0.001			
Road	d Elevation:	0.0 feet		Lane Equ	ivalent D	istance (i	n feet)		
R	load Grade:	0.0%			Autos:	32.388			
	Left View:	-90.0 degrees		Mediur	n Trucks:	32.114			
	Right View:	90.0 degrees		Heav	y Trucks:	32.141			
FHWA Noise Model	Calculation	s							
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Beri	m Atten
Autos:	66.51	1.70	2	2.73	-1.20	-4.5	9 0.0	000	0.000
Medium Trucks:	77.72	-8.03	2	2.78	-1.20	-4.8	7 0.0	000	0.000
Heavy Trucks:	82.99	-10.39	2	2.78	-1.20	-5.5	6 0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and bai	rier att	enuation)					
VehicleType L	Leq Peak Hou	r Leq Day	Leq	Evening	Leq Ni	ght	Ldn	CI	VEL
Autos:	69	.7 67.	9	65.0		63.2	70.5	5	70.9
Medium Trucks:	71	.3 69.	7	63.7		64.5	71.9	9	72.1
Heavy Trucks:	74	.2 73.	0	64.1		66.1	74.1		74.2
Vehicle Noise:	76	.9 75.	5	69.0		69.6	77.2	2	77.4
Centerline Distance	e to Noise Co	ontour (in feet)							
			7	0 dBA	65 dE	BA	60 dBA	55	dBA
		Ldi	1:	121		261	563		1,212

Monday, June 26, 2023

	FHWA-RD	0-77-108 HIGH\	NAY NOIS	SE PREI		MODEL	(9/12/20	021)		
Scenari Road Nam Road Segmen	p: E e: Rivergrade t: s/o Live Oa	Road k Avenue			Projec Job	ct Name: Number:	Irwinda 15410	ale Gatewa	iy SP	
SITE S	SPECIFIC IN	IPUT DATA				NOISE	MODE	L INPUT	S	
Highway Data				Site C	onditions	s (Hard =	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	9,965 vehicle	s				Autos:	15		
Peak Hour	Percentage:	9.19%			Aedium T	rucks (2	Axles):	15		
Peak H	our Volume:	916 vehicles			Heavy Tri	ucks (3+	Axles):	15		
Vel	nicle Speed:	40 mph		Vohic	o Mix					
Near/Far Lar	ne Distance:	12 feet		Venici	e wirk ehicleTvp	e	Dav	Evening	Night	Dailv
Site Data				-		Autos:	72.4%	9.2%	18.4%	85.65
Bar	rior Hoiaht:	0.0 feet			Medium	Trucks:	77.7%	4.8%	17.5%	9.129
Barrier Type (0-W	all, 1-Berm):	0.0			Heavy	Trucks:	84.3%	2.7%	13.0%	5.23
Centerline Dis	t. to Barrier:	30.0 feet		Noise	Source E	levatior	ns (in fe	et)		
Centerline Dist. t	o Observer:	30.0 feet			Aut	os: 0	.000			
Barrier Distance t	o Observer:	0.0 feet		Med	ium Truc	ks: 2	.297			
Observer Height (/	Above Pad):	5.0 feet		He	avv Truc	ks: 8	.004	Grade Ad	iustment	: 0.0
Pa	d Elevation:	0.0 feet			,					
Roa	d Elevation:	0.0 feet		Lane	quivaler	nt Distan	ice (in f	feet)		
F	Road Grade:	0.0%			Aut	os: 29	.816			
	Left View:	-90.0 degree	s	Med	ium Truc	ks: 29	.518			
	Right View:	90.0 degree	s	He	avy Truc	ks: 29	.547			
FHWA Noise Mode	l Calculation:	s		1						
VehicleType	REMEL	Traffic Flow	Distance	e Fin	te Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	-2.38	3	.26	-1.20)	-4.49	0.0	000	0.00
Medium Trucks:	77.72	-12.11	3	.33	-1.20)	-4.86	0.0	000	0.00
Heavy Trucks:	82.99	-14.53	3	.32	-1.20)	-5.77	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and b	oarrier att	enuatio	l)					
VehicleType	Leq Peak Hou	Ir Leq Day	Leq	Evening	Leo	n Night		Ldn	C	NEL
Autos:	66	.2 6	64.4	61	.4	59.	7	67.0	D	67
Medium Trucks:	67	.7 6	6.2	60	.1	61.	0	68.4	4	68
Heavy Trucks:	70	.6 6	39.4	60	.5	62.	6	70.5	5	70.
Vehicle Noise:	73	.3 7	2.0	65	.5	66.	0	73.7	7	73.
Centerline Distanc	e to Noise Co	ontour (in feet)								
			7	u aBA	65	авА	6	о авА	55	ава
			.an:	÷	3	11:	5	244		526
		CN	EL:	ţ	4	116	D	251		540

	FHWA-RI	D-77-108 HIGHV			CTION MC	DEL (9/1	2/2021)			
Scenar Road Nan Road Segme	io: EP ne: Rivergrade nt: s/o Live Oa	Road ak Avenue			Project N Job Nu	lame: Irw mber: 154	indale Ga 410	ateway S	.P	
SITE	SPECIFIC IN	NPUT DATA			NC	DISE MO	DEL INI	PUTS		
Highway Data				Site Con	ditions (H	lard = 10	, Soft = 1	5)		
Average Daily	Traffic (Adt):	10,041 vehicles	6			Au	tos: 15	5		
Peak Hour	Percentage:	9.19%		Me	dium Truc	ks (2 Axl	es): 15	5		
Peak H	lour Volume:	923 vehicles		He	avy Truck	s (3+ Axl	es): 15	5		
Ve	hicle Speed:	40 mph		Vehicle	Mix					
Near/Far La	ne Distance:	12 feet		Veh	icleTvpe	Da	v Ever	nina N	iaht	Dailv
Site Data					AL	itos: 72	.4% 9	.2% 1	8.4%	85.55%
Ba	rrier Height	0.0 feet		М	edium Tru	cks: 77	.7% 4	.8% 1	7.5%	9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			Heavy Tru	cks: 84	.3% 2	.7% 1	3.0%	5.33%
Centerline Di	st. to Barrier:	30.0 feet		Noise S		vations (in foot)			
Centerline Dist.	to Observer:	30.0 feet		10136 30	Autos:	0.00				
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks:	2 20	7			
Observer Height	(Above Pad):	5.0 feet		Heat	n Trucks:	8.00/	1 Grad	le Adius	tment [.]	0.0
P	ad Elevation:	0.0 feet		neur	ry macks.	0.00	- 0,uu	io / lajao.	mont.	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent L	Distance	(in feet)			
	Road Grade:	0.0%			Autos:	29.81	6			
	Left View:	-90.0 degrees	\$	Mediu	m Trucks:	29.51	В			
	Right View:	90.0 degrees	6	Hear	/y Trucks:	29.54	7			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrie	er Atten	Berr	m Atten
Autos:	66.51	-2.35		3.26	-1.20	-4	.49	0.000	1	0.000
Medium Trucks:	77.72	-12.08		3.33	-1.20	-4.	86	0.000	1	0.000
Heavy Trucks:	82.99	-14.41		3.32	-1.20	-5.	.77	0.000		0.000
Unmitigated Nois	e Levels (with	out Topo and b	arrier at	tenuation)					-	
VehicleType	Leq Peak Ho	ur Leq Day	Leo	r Evening	Leq N	ight	Ldn		CN	JEL
Autos:	66	5.2 6	4.4	61.4		59.7		67.0		67.3
Medium Trucks:	67	7.8 6	6.2	60.2		61.0		68.4		68.6
Heavy Trucks:	70	0.7 6	9.5	60.6		62.7		70.6		70.8
Vehicle Noise:	73	3.4 7	2.0	65.5		66.1		73.7		73.9
Centerline Distan	ce to Noise C	ontour (in feet)								
				70 dBA	65 dE	BA	60 dB/	4	55 0	dBA
		L	dn:	53		115		247		532
		CN	EL:	55		118		254		547

	FHWA-R	D-77-108 HIGH	WAY N	IOISE P	REDIC	TION MO	DEL (9/	12/202	21)		
Scenario Road Name Road Segmen	o: 2028 NP e: Rivergrade t: s/o Live Oa	Road ak Avenue				Project N Job Nur	ame: In nber: 18	windal 5410	e Gatewa	y SP	
SITE S	PECIFIC II	NPUT DATA				NO	ISE M	ODEL	INPUTS	3	
Highway Data				Si	te Con	ditions (H	lard = 1	0, Sof	t = 15)		
Average Daily 1	Traffic (Adt):	15,626 vehicl	es				A	utos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Truc	ks (2 A)	(les):	15		
Peak Ho	our Volume:	1,436 vehicle	s		He	avy Truck	s (3+ A)	des):	15		
Vet	icle Speed:	40 mph		Ve	hicle	Mix					
Near/Far Lar	e Distance:	12 feet			Veh	icleTvpe	D	Dav	Evenina	Niaht	Dailv
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.65%
Bar	rier Heiaht:	0.0 feet			М	edium Tru	cks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0			1	Heavy True	cks: 8	4.3%	2.7%	13.0%	5.23%
Centerline Dis	t. to Barrier:	30.0 feet		No	oise So	ource Elev	ations	(in fee	et)		
Centerline Dist. t	o Observer:	30.0 feet				Autos:	0.0	00	.,		
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Trucks:	2.29	97			
Observer Height (/	Above Pad):	5.0 feet			Heav	/y Trucks:	8.00	04 (Grade Adj	ustment	: 0.0
Pa	d Elevation:	0.0 feet				* 		. <i>(</i> f	- 41		
Roa	d Elevation:	0.0 feet		La	ne Eq	uivaient D	istance	e (in re	et)		
-	oad Grade:	0.0%				Autos:	29.8	10			
	Left View:	-90.0 degre	es		Healu	m Trucks:	29.5	18			
	Right view.	90.0 degre	es		i icai	ly mucks.	29.5	47			
FHWA Noise Mode	I Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	el E	arrier Atte	en Ber	m Atten
Autos:	66.51	-0.43		3.26		-1.20	-1	4.49	0.0	00	0.000
Medium Trucks:	77.72	-10.15		3.33		-1.20		4.86	0.0	00	0.000
Heavy Trucks:	82.99	-12.57		3.32		-1.20	-	5.77	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	attenua	ation)						
VehicleType	Leq Peak Ho	ur Leq Da	y .	Leq Eve	ning	Leq Ni	ght	1	Ldn	C	NEL
Autos:	6	3.1	66.3		63.4		61.6		69.0)	69.3
Medium Trucks:	6	9.7	68.2		62.1		63.0		70.4		70.5
Heavy Trucks:	7:	2.5	71.4		62.4		64.5		72.5	,	72.6
Vehicle Noise:	7:	5.3	73.9		67.4		68.0		75.6	i	75.8
Centerline Distance	e to Noise C	ontour (in fee	9								
			L	70 dB	A	65 dE	BA	60	dBA	55	dBA
		-	Ldn:		71		153		330		710
		C	NEL:		73		157		339		730

FHWA-	(D-77-108 HIG	NVAT	NOISE	REDIC		JEC (9/	12/20	21)		
Scenario: 2028 WP					Project Na	me: Irv	vinda	le Gatewa	y SP	
Road Name: Rivergrad	e Road				Job Nur	ber: 15	410			
Road Segment: s/o Live C	ak Avenue									
SITE SPECIFIC	NPUT DATA				NO	SE MO	DDEI	INPUT	S	
Highway Data			S	ite Con	ditions (Ha	ard = 10	0, So	ft = 15)		
Average Daily Traffic (Adt):	15,702 vehic	les				AL	itos:	15		
Peak Hour Percentage:	9.19%			Me	dium Truck	's (2 Ax	les):	15		
Peak Hour Volume:	1,443 vehicle	es		Hei	avy Trucks	(3+ Ax	les):	15		
Vehicle Speed:	40 mph		ν	ehicle N	lix					
Near/Far Lane Distance:	12 feet			Vehi	cleType	D	ay	Evening	Night	Daily
Site Data					Aut	os: 71	2.4%	9.2%	18.4%	85.59%
Barrier Height:	0.0 feet			Me	edium Truc	ks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wall, 1-Berm):	0.0			ŀ	leavy Truc	ks: 84	4.3%	2.7%	13.0%	5.29%
Centerline Dist. to Barrier:	30.0 feet		N	loise So	urce Elev	ations	(in fe	et)		
Centerline Dist. to Observer:	30.0 feet			0.00 00	Autos:	0.00	0	~~		
Barrier Distance to Observer:	0.0 feet			Mediur	n Trucks	2 29	7			
Observer Height (Above Pad):	5.0 feet			Heav	v Trucks:	8.00	4	Grade Ad	justment	: 0.0
Pad Elevation:	0.0 feet		-							
Road Elevation:	0.0 feet		L	ane Equ	iivalent Di	stance	(in fe	eet)		
Road Grade:	0.0%				Autos:	29.81	6			
Left View:	-90.0 degre	ees		Mediur	n Trucks:	29.51	8			
Right View:	90.0 degre	es		Heav	y Trucks:	29.54	17			
FHWA Noise Model Calculatio	ns									
VehicleType REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	1	Barrier Att	en Ber	m Atten
Autos: 66.5	1 -0.41	1	3.26		-1.20	-4	1.49	0.0	000	0.00
Medium Trucks: 77.7	2 -10.13	3	3.33		-1.20	-4	1.86	0.0	000	0.00
Heavy Trucks: 82.9	9 -12.50	D	3.32		-1.20	-5	5.77	0.0	000	0.00
Unmitigated Noise Levels (wit	hout Topo and	l barrie	r attenu	uation)						
VehicleType Leq Peak H	our Leq Da	iy 🛛	Leq Ev	ening	Leq Nig	tht		Ldn	C	NEL
Autos: 6	38.2	66.3		63.4		61.6		69.)	69.
Medium Trucks:	69.7	68.2		62.1		63.0		70.4	1	70.
Heavy Trucks:	2.6	71.5		62.5		64.6		72.	3	72.
Vehicle Noise:	5.3	74.0		67.5		68.0		75.	1	75.
Centerline Distance to Noise	Contour (in fee	t)								
		L	70 d	BA	65 dB.	4	6	D dBA	55	dBA
		Ldn:		72		154		332		715
		- nIEI :		7.3		169		2/11		735

Monday, June 26, 2023

									,		
Scenario	2040 NP					Project I	Vame: I	rwinda	ale Gatewa	y SP	
Road Name	Rivergrade	Road				Job Ni	mber: 1	15410			
Road Segmen	t: s/o Live Oa	k Avenue									
SITE S	PECIFIC IN	PUT DATA				N	DISE N	IODE	L INPUT	3	
Highway Data				S	Site Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	22,418 vehicle	s					Autos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Tru	cks (2 A	(xles):	15		
Peak Ho	our Volume:	2,060 vehicles			He	avy Truc	ks (3+ A	xles):	15		
Veh	nicle Speed:	40 mph		V	/ehicle	Mix					
Near/Far Lar	e Distance:	12 feet		-	Veh	icleType		Dav	Evenina	Niaht	Daily
Site Data						A (1.1.1.1	utos:	72.4%	9.2%	18.4%	85.65%
Bor	riar Haight	0.0 feet			Me	edium Tri	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0 W/	I Borm	0.0 leet			ŀ	leavv Tri	icks:	84.3%	2.7%	13.0%	5.23%
Centerline Dis	t to Barrier	30.0 feet									
Centerline Dist t	n Observer:	30.0 feet		۸	loise Sc	ource Ele	vations	s (in fe	eet)		
Barrier Distance t	o Observer:	0.0 feet				Autos	: 0.0	000			
Observer Height (Above Pad):	5.0 feet			Mediui	n Trucks	: 2.2	297			
Pa	d Elevation:	0.0 feet			Heav	ry Trucks	: 8.0	004	Grade Adj	ustment	: 0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	uivalent	Distanc	e (in	feet)		
F	Road Grade:	0.0%				Autos	: 29.8	316			
	Left View:	-90.0 degree	s		Mediui	n Trucks	: 29.5	518			
	Right View:	90.0 degree	s		Heav	ry Trucks	29.5	547			
FHWA Noise Mode	I Calculation:	5									
VehicleType	REMEL	Traffic Flow	Distan	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	1.14		3.26	6	-1.20		-4.49	0.0	00	0.00
Medium Trucks:	77.72	-8.59		3.33	3	-1.20		-4.86	0.0	00	0.00
Heavy Trucks:	82.99	-11.01		3.32	2	-1.20		-5.77	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and I	barrier a	tten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Ev	ening	Leq N	light		Ldn	CI	NEL
Autos:	69	.7 6	57.9		64.9		63.2		70.5		70.
Medium Trucks:	71	.3 6	59.7		63.6		64.5		71.9		72.
Heavy Trucks:	74	.1 7	/2.9		64.0		66.1		74.0)	74.
Vehicle Noise:	76	.9	/5.5		69.0		69.5		77.2		77.
Centerline Distanc	e to Noise Co	ontour (in feet)									
				70 a	BA	65 0	BA		00 aBA	55	aBA
			an		an		105		419		903
					00		000		404		000

	FHWA-RI	D-77-108 HIGH	WAY NC	DISE	PREDIC	TION M	ODEL (9/12/2	021)		
Scenar Road Nam Road Segme	io: 2040 WP ne: Rivergrade nt: s/o Live Oa	Road Ik Avenue				Project Job N	Name: umber:	Irwind 15410	ale Gatewa	ay SP	
SITE	SPECIFIC IN	IPUT DATA	-		-	N	OISE	NODE	L INPUT	s	-
Highway Data				S	ite Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	22,494 vehicle	s					Autos.	15		
Peak Hour	Percentage:	9.19%			Med	dium Tru	icks (2	Axles).	15		
Peak H	lour Volume:	2,067 vehicles	6		Hea	avy Truc	:ks (3+)	Axles).	15		
Ve	hicle Speed:	40 mph		V	obiclo I	liv					
Near/Far La	ne Distance:	12 feet			Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						4	lutos:	72.4%	6 9.2%	18.4	% 85.61%
Ba	rrier Heiaht [.]	0.0 feet			Me	dium Tr	ucks:	77.7%	6 4.8%	17.5	% 9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			h	leavy Tr	ucks:	84.3%	6 2.7%	13.0	% 5.27%
Centerline Di	st. to Barrier:	30.0 feet		N	loise So	urce El	evation	s (in f	eet)		
Centerline Dist.	to Observer:	30.0 feet			0130 00	Autor	. 0	000			
Barrier Distance	to Observer:	0.0 feet			Medium	n Trucki	s. 0.	207			
Observer Height ((Above Pad):	5.0 feet			Heav	v Truck	л. <u>2</u> . . Я	004	Grade Ad	liustme	nt: 0.0
Pa	ad Elevation:	0.0 feet			nour,	,	. 0.			,	
Roa	ad Elevation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos	s: 29	816			
	Left View:	-90.0 degree	es		Mediun	n Trucks	s: 29	518			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 29	.547			
FHWA Noise Mode	el Calculation	s		- 1							
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	nel	Barrier At	ten B	erm Atten
Autos:	66.51	1.15		3.26		-1.20		-4.49	0.	000	0.000
Medium Trucks:	77.72	-8.57		3.33		-1.20		-4.86	0.	000	0.000
Heavy Trucks:	82.99	-10.95		3.32		-1.20		-5.77	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	ır Leq Day	Le	eq Eve	ening	Leq	Night		Ldn		CNEL
Autos:	69).7	67.9		64.9		63.	2	70.	5	70.8
Medium Trucks:	71	.3	69.8		63.7		64.	5	71.	9	72.1
Heavy Trucks:	74	.2	73.0		64.0		66.	1	74.	.1	74.2
Vehicle Noise:	76	5.9	75.5		69.0		69.	6	77.	2	77.4
Centerline Distance	ce to Noise Co	ontour (in feet,									
				70 di	BA	65 (dBA	1	60 dBA	5	55 dBA
			Ldn:		91		196	;	42	1	908
		CI	VEL:		93		201		43	3	933

	FHWA-RI	D-77-108 HIGH	WAY N	OISE P	REDIC	TION MO	DEL (9	/12/20	21)		
Scenar Road Nam Road Segmei	io: E le: Balwin Par nt: s/o Live Oa	k Blvd. ik Avenue				Project N Job Nur	ame: Ir nber: 1	winda 5410	le Gatewa	y SP	
SITE	SPECIFIC IN	IPUT DATA				NO	ISE M	ODE	INPUTS	5	
Highway Data				Si	te Con	ditions (H	lard = 1	10, So	ft = 15)		
Average Daily	Traffic (Adt):	10,885 vehicl	es				A	utos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	ks (2 A	xles):	15		
Peak H	our Volume:	1,000 vehicle	s		He	avy Truck	s (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		Ve	hicle	Mix					
Near/Far La	ne Distance:	48 feet			Veh	icleType	1	Day	Evening	Night	Daily
Site Data						Au	tos: 1	72.4%	9.2%	18.4%	85.65%
Bai	rrier Heiaht:	0.0 feet			М	edium Tru	cks: 1	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			1	Heavy Tru	cks: 8	34.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	40.0 feet		No	oise So	ource Elev	ations	(in fe	et)		
Centerline Dist.	to Observer:	40.0 feet				Autos:	0.0	00			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	97			
Observer Height (Above Pad):	5.0 feet			Heav	/v Trucks:	8.0	04	Grade Adj	iustment	: 0.0
Pa	ad Elevation:	0.0 feet									
Roa	ad Elevation:	0.0 feet		La	ine Eq	uivalent L	ustanc	e (in f	eet)		
	Road Grade:	0.0%				Autos:	32.3	88			
	Left View:	-90.0 degre	es		Meaiu	m Trucks:	32.1	14			
	Right View:	90.0 degre	es		Heav	ly Trucks:	32.1	41			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	el l	Barrier Atte	en Ber	m Atten
Autos:	66.51	-2.00		2.73		-1.20	-	4.59	0.0	000	0.000
Medium Trucks:	77.72	-11.72		2.78		-1.20	-	4.87	0.0	000	0.000
Heavy Trucks:	82.99	-14.14		2.78		-1.20	-	5.56	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Day	/ L	eq Eve	ening	Leg Ni	ight		Ldn	C	NEL
Autos:	66	3.0	64.2		61.3		59.5		66.8	3	67.2
Medium Trucks:	67	7.6	66.1		60.0		60.8		68.2	2	68.4
Heavy Trucks:	70).4	69.3		60.3		62.4		70.4	-	70.5
Vehicle Noise:	73	3.2	71.8		65.3		65.8		73.5	5	73.7
Centerline Distance	ce to Noise Co	ontour (in feet)							1	
				70 dE	3A	65 dE	3A	6	0 dBA	55	dBA
			Ldn:		68		147		318		684
		С	NEL:		70		151		326		703

	FHWA-RD	-77-108 HIGH	NAY	NOISE	PREDIC	TION MOI	DEL (9	12/20)21)		
Scenario.	EP					Project Na	ame: Ir	winda	le Gatewa	iy SP	
Road Name.	Balwin Park	Blvd.				Job Nun	ber: 1	5410			
Road Segment	s/o Live Oal	Avenue									
SITE S	PECIFIC IN	PUT DATA				NO	ISE M	ODE		s	
Highway Data				S	ite Con	ditions (H	ard = 1	0, So	ft = 15)		
Average Daily Ti	raffic (Adt):	11,036 vehicle	s				A	utos:	15		
Peak Hour P	ercentage:	9.19%			Me	dium Truck	(2 A)	(les):	15		
Peak Ho	ur Volume:	1,014 vehicles			Hei	avy Trucks	(3+ A)	(les):	15		
Vehi	cle Speed:	40 mph		v	ehicle N	lix					
Near/Far Lane	e Distance:	48 feet			Vehi	cleType	L	Day	Evening	Night	Daily
Site Data						Aut	os: 7	2.4%	9.2%	18.4%	85.47%
Barri	ier Heiaht:	0.0 feet			Me	edium Truc	ks: 7	7.7%	4.8%	17.5%	9.11%
Barrier Type (0-Wa	I, 1-Berm):	0.0			F	leavy Truc	ks: 8	4.3%	2.7%	13.0%	5.42%
Centerline Dist.	to Barrier:	40.0 feet		A	laise Sa	urce Elev	ations	(in fo	of)		
Centerline Dist. to	Observer:	40.0 feet			0138 30	Autos:	0.0	00	01/		
Barrier Distance to	Observer:	0.0 feet			Mediur	n Trucks	2.2	00 07			
Observer Height (A	bove Pad):	5.0 feet			Heav	v Trucks:	8.0	0 <i>1</i>	Grade Ad	iustment	0.0
Pad	Elevation:	0.0 feet			neav	y mucho.	0.0	-		,	0.0
Road	Elevation:	0.0 feet		L	ane Equ	ivalent D	stance	e (in f	eet)		
R	oad Grade:	0.0%				Autos:	32.3	88			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	32.1	14			
ŀ	Right View:	90.0 degree	s		Heav	y Trucks:	32.1	41			
FHWA Noise Model	Calculations	1									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresne	d .	Barrier Att	en Ber	m Atten
Autos:	66.51	-1.95		2.73		-1.20	-	4.59	0.0	000	0.00
Medium Trucks:	77.72	-11.67		2.78		-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-13.93		2.78		-1.20	-	5.56	0.0	000	0.00
Unmitigated Noise I	Levels (witho	out Topo and I	barrie	r attenu	uation)						
VehicleType L	eq Peak Hou	r Leq Day		Leq Ev	ening	Leq Nig	ght		Ldn	CI	VEL
Autos:	66.	1 6	54.3		61.3		59.6		66.9	9	67.
Medium Trucks:	67.	6 (56.1		60.0		60.9		68.3	3	68.
Heavy Trucks:	70.	6 6	39.5		60.5		62.6		70.6	6	70.
Vehicle Noise:	73.	3	71.9		65.4		66.0		73.6	ö	73.
Centerline Distance	to Noise Co	ntour (in feet)		70 '	D 4				0 - 10 4		-10.4
			L	70 d	BA 70	65 dB	450	6	U dBA	55	aBA
			Lan:		70		150		324		698
			1 mm 1 1				The second second				/17

Monday, June 26, 2023

	FHWA-RI	D-77-108 HIGH	NAY NO	ISE F	PREDIC		ODEL	(9/12/20	021)		
Scenar Road Nam Road Segmei	io: 2028 NP e: Balwin Parl nt: s/o Live Oa	k Blvd. Ik Avenue				Project Job N	Name: umber:	Irwinda 15410	le Gatewa	y SP	
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE		S	
Highway Data				S	ite Con	ditions	(Hard =	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	16,327 vehicle	s					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	1,500 vehicles			He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		V	ehicle I	lix					
Near/Far La	ne Distance:	48 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.65%
Rai	rier Height	0.0 feet			Me	edium T	rucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy T	rucks:	84.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	40.0 feet		N	oise So	urce E	evatior	ns (in fe	et)		
Centerline Dist.	to Observer:	40.0 feet				Auto	s: 0	.000	.,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Truck	s: 2	.297			
Observer Height (Above Pad):	5.0 feet			Heav	v Truck	s: 8	.004	Grade Ad	iustment	: 0.0
Pa	ad Elevation:	0.0 feet			_						
Roa	ad Elevation:	0.0 feet		L	ane Equ	iivalen	Distan	ice (in 1	'eet)		
1	Road Grade:	0.0%				Auto	s: 32	.388			
	Left View: Right View:	-90.0 degree	s		Mediur Heav	n Truck v Truck	s: 32 s: 32	.114			
ELIMA Naiaa Madu	Coloulation		-								
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	-0.24		2.73		-1.20		-4.59	0.0	000	0.00
Medium Trucks:	77.72	-9.96		2.78		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-12.38		2.78		-1.20		-5.56	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and l	barrier at	ttenu	ation)						
VehicleType	Leq Peak Hou	Ir Leq Day	Le	q Eve	ening	Leq	Night		Ldn	C	NEL
Autos:	67	.8 (6.0		63.0		61.	3	68.6	3	68.
Medium Trucks:	69	.3 6	57.8		61.7		62.	6	70.0)	70.
Heavy Trucks:	72	.2 1	71.0		62.1		64.	2	72.1	1	72.
Vehicle Noise:	74	.9 1	73.6		67.1		67.	6	75.3	3	75.
Centerline Distand	e to Noise Co	ontour (in feet)	-	70 /			10.4				10.4
			1	70 al	BA	65	авя	6	о авА	55	авА
			al a c		00		4.00		410		007
		1	dn:		90		193	3	416		897

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL	(9/12/2	021)		
Scenar Road Nan Road Segme	io: 2028 WP ne: Balwin Park nt: s/o Live Oal	Blvd. Avenue				Project Job N	Name: umber:	Irwinda 15410	ale Gatewa	ay SP	
SITE	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data					Site Con	ditions ((Hard =	: 10, Sc	oft = 15)		
Average Daily Peak Hour	Traffic (Adt): Percentage:	16,478 vehicle 9.19%	es		Me	dium Tru avv. Truc	icks (2	Autos: Axles):	15 15		
/ Cuk /	hicle Speed:	40 mph	5			<i>ary ma</i> a	10.	, 10000).	10		
Near/Far La	inicie Speeu. ine Distance:	40 mpn 48 feet		1	Vehicle I	Nix					
iveain ai Ea	ne Distance.	40 1001			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	lutos:	72.4%	9.2%	18.4	% 85.53%
Ba	rrier Height:	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5	% 9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.0	% 5.36%
Centerline Di	st. to Barrier:	40.0 feet		1	Noise So	urce El	evatior	is (in fe	et)		
Centerline Dist.	to Observer:	40.0 feet				Autos	s: 0	.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	s: 2	.297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	s: 8	.004	Grade Ad	ljustme	nt: 0.0
P	ad Elevation:	0.0 feet		-							
Ro	ad Elevation:	0.0 feet		1	Lane Equ	livalent	Distar	ce (in	reet)		
	Road Grade:	0.0%				Autos	s: 32	.388			
	Left View:	-90.0 degree	es		Mediur	n Trucks	s: 32	.114			
	Right View:	90.0 degree	es		Heav	y Trucks	5: 32	.141			
FHWA Noise Mod	el Calculations	1		·							
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrier At	ten B	erm Atten
Autos:	66.51	-0.20		2.7	3	-1.20		-4.59	0.	000	0.000
Medium Trucks:	77.72	-9.93		2.7	8	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	82.99	-12.24		2.7	8	-1.20		-5.56	0.	000	0.000
Unmitigated Nois	e Levels (witho	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	r -	Leq E	vening	Leq I	Night		Ldn		CNEL
Autos:	67.	8	66.0		63.0		61.	3	68.	6	69.0
Medium Trucks:	69.	4	67.8		61.8		62.	6	70.	0	70.2
Heavy Trucks:	72.	3	71.2		62.2		64.	3	72.	3	72.4
Vehicle Noise:	75.	0	73.6		67.1		67.	7	75.	3	75.5
Centerline Distan	ce to Noise Co	ntour (in feet)								
				70 0	dBA	65 0	dBA	6	0 dBA	5	5 dBA
			Ldn:		91		19	3	422	2	909
		C	VEL:		93		20	1	433	3	934

	FHWA-RI	D-77-108 HIGI	IWAY N	OISE P	REDIC	TION MO	DEL (9/12	2/2021)		
Scenar Road Nam Road Segme	io: 2040 NP ne: Balwin Par nt: s/o Live Oa	k Blvd. ik Avenue				Project N Job Nur	ame: Irwii nber: 154	ndale Gatew 10	ay SP	
SITE	SPECIFIC IN	IPUT DATA				NO	ISE MO	DEL INPUT	S	
Highway Data				Si	te Cond	ditions (H	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	22,859 vehic	es				Auto	os: 15		
Peak Hour	Percentage:	9.19%			Med	dium Truc	ks (2 Axle	s): 15		
Peak H	lour Volume:	2,101 vehicle	s		Hea	avy Truck	s (3+ Axle	s): 15		
Ve	hicle Speed:	40 mph		Ve	hicle I	liv				
Near/Far La	ne Distance:	48 feet			Vehi	cleTvpe	Day	/ Evenina	Niah	Daily
Site Data						Au	tos: 72.	4% 9.2%	18.4	% 85.65%
Ba	rrier Heiaht:	0.0 feet			Me	dium Tru	cks: 77.	7% 4.8%	17.5	% 9.12%
Barrier Type (0-W	(all, 1-Berm):	0.0			h	leavy Tru	cks: 84.	3% 2.7%	13.0	% 5.23%
Centerline Di	st. to Barrier:	40.0 feet		N	nisa Sa	urce Elev	ations (in	(foot)		
Centerline Dist.	to Observer:	40.0 feet				Autos:	0 000			
Barrier Distance	to Observer:	0.0 feet			Mediun	n Trucks	2 297			
Observer Height	Above Pad):	5.0 feet			Heav	v Trucks:	8.004	Grade A	djustme	nt: 0.0
Pi	ad Elevation:	0.0 feet		_						
Roi	ad Elevation:	0.0 feet		Lá	ane Equ	ivalent D	istance (in feet)		
	Road Grade:	0.0%				Autos:	32.388			
	Left View:	-90.0 degre	es		Meaiun	n Trucks:	32.114			
	Right View:	90.0 degre	es		Heav	y Trucks:	32.141			
FHWA Noise Mode	el Calculation	S								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	Barrier A	tten E	lerm Atten
Autos:	66.51	1.23		2.73		-1.20	-4.5	59 0	.000	0.000
Medium Trucks:	77.72	-8.50)	2.78		-1.20	-4.8	37 0	.000	0.000
Heavy Trucks:	82.99	-10.92	2	2.78		-1.20	-5.8	56 0	.000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	ation)					
VehicleType	Leq Peak Hou	ur Leq Da	y I	Leq Eve	ening	Leq Ni	ight	Ldn		CNEL
Autos:	69	9.3	67.4		64.5		62.7	70	.1	70.4
Medium Trucks:	70).8	69.3		63.2		64.1	71	.5	71.6
Heavy Trucks:	73	3.6	72.5		63.5		65.6	73	.6	73.7
Vehicle Noise:	76	6.4	75.0		68.5		69.1	76	.7	76.9
Centerline Distant	ce to Noise Co	ontour (in fee	t)						1	
				70 dE	BA	65 dE	3A	60 dBA		55 dBA
			Ldn:		112		242	52	1	1,122
		C	NEL:		115		248	53	5	1,153

	FHWA-RD-7	77-108 HIGHWAY	NOISE	PREDIC	TION MOL	EL (9/12	2021)		
Scenario:	2040 WP				Project Na	me: Irwin	dale Gatewa	iy SP	
Road Name:	Balwin Park B	Blvd.			Job Num	ber: 1541	0		
Road Segment:	s/o Live Oak	Avenue							
SITE SP	PECIFIC INP	UT DATA			NOI	SE MOD	EL INPUT	S	
Highway Data			:	Site Con	ditions (Ha	rd = 10,	Soft = 15)		
Average Daily Tr	affic (Adt): 2	3,010 vehicles				Auto	s: 15		
Peak Hour Pe	ercentage:	9.19%		Me	dium Truck	s (2 Axles	s): 15		
Peak Hou	ır Volume: 2	,115 vehicles		Hei	avy Trucks	(3+ Axles	s): 15		
Vehic	cle Speed:	40 mph	1	Vehicle N	lix				
Near/Far Lane	Distance:	48 feet	Ē	Vehi	cleType	Day	Evening	Night	Daily
Site Data					Auto	os: 72.4	% 9.2%	18.4%	85.56
Barri	er Height:	0.0 feet		Me	edium Truc	ks: 77.7	% 4.8%	17.5%	9.12
Barrier Type (0-Wal	l, 1-Berm):	0.0		F	leavy Truc	ks: 84.3	% 2.7%	13.0%	5.32
Centerline Dist.	to Barrier:	40.0 feet		Voise So	urce Eleva	tions (in	feet)		
Centerline Dist. to	Observer:	40.0 feet	ŕ	10.00 00	Autos:	0.000	1000		
Barrier Distance to	Observer:	0.0 feet		Mediur	n Trucks:	2 297			
Observer Height (At	bove Pad):	5.0 feet		Heav	v Trucks:	8 004	Grade Ad	iustment	: 0.0
Pad	Elevation:	0.0 feet		mour	y maono.	0.001			
Road	Elevation:	0.0 feet	1	Lane Equ	ivalent Di	stance (i	n feet)		
Ro	ad Grade:	0.0%			Autos:	32.388			
	Left View:	-90.0 degrees		Mediur	n Trucks:	32.114			
F	Right View:	90.0 degrees		Heav	y Trucks:	32.141			
FHWA Noise Model	Calculations								
VehicleType	REMEL 1	Traffic Flow Di	istance	Finite	Road I	Fresnel	Barrier Att	en Ber	m Atter
Autos:	66.51	1.25	2.7	3	-1.20	-4.5	9 0.	000	0.00
Medium Trucks:	77.72	-8.47	2.7	8	-1.20	-4.8	7 0.	000	0.00
Heavy Trucks:	82.99	-10.82	2.7	8	-1.20	-5.5	6 0.	000	0.00
Unmitigated Noise L	evels (withou	it Topo and barri	ier atten	uation)					
VehicleType Le	eq Peak Hour	Leq Day	Leq E	vening	Leq Nig	ht	Ldn	C	NEL
Autos:	69.3	67.5		64.5		62.8	70.	1	70
Medium Trucks:	70.8	69.3		63.2		64.1	71.	5	71
Heavy Trucks:	73.8	72.6		63.6		65.7	73.	7	73
Vehicle Noise:	76.5	75.1		68.6		69.1	76.	В	77
Centerline Distance	to Noise Con	tour (in feet)	70	104	05.15		CO -/D 4		
		1 -1	70 0	110 110	05 dB/	1	ou aBA	55	0BA
		Ldn:		113		244	526	•	1,13
		(INE)		116		201	541		1 164

Monday, June 26, 2023

	FHWA-RI	D-77-108 HIGH	NAY NO	SE	PREDIC		IODEL	(9/12/2	021)		
Scenar Road Nan Road Segme	rio: E ne: Live Oak A ent: s/o Arrow H	venue Highway				Projec Job N	t Name: lumber:	Irwinda 15410	ale Gatewa	iy SP	
SITE	SPECIFIC IN	IPUT DATA				1	OISE	MODE	L INPUT	s	
Highway Data				S	ite Con	ditions	(Hard =	= 10, So	oft = 15)		
Average Daily	Traffic (Adt):	27,632 vehicle	s					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tr	rucks (2	Axles):	15		
Peak H	lour Volume:	2,539 vehicles			He	avy Tru	cks (3+	Axles):	15		
Ve	ehicle Speed:	40 mph		v	ahicle	Mix					
Near/Far La	ane Distance:	80 feet		-	Veh	icleTvpe	9	Dav	Evenina	Niaht	Dailv
Site Data							Autos:	72.4%	6 9.2%	18.4%	85.65%
Ba	rrier Height	0.0 feet			М	edium T	rucks:	77.7%	6 4.8%	17.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			1	Heavy T	rucks:	84.3%	6 2.7%	13.0%	5.23%
Centerline Di	ist. to Barrier:	50.0 feet		٨	loise So	ource E	levatio	ns (in fe	eet)		
Centerline Dist.	to Observer:	50.0 feet		-		Auto	s 0	000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	(s: 2	.297			
Observer Height	(Above Pad):	5.0 feet			Heav	v Truck	(s: 8	.004	Grade Ad	ljustment	t: 0.0
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	ice (in	feet)		
	Road Grade:	0.0%				Auto	os: 30	0.414			
	Left View:	-90.0 degree	s		Mediu	m Truck	s: 30	0.122			
	Right View:	90.0 degree	s		Heav	y Truck	(S.' 30	1.150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distanc	e	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Atten
Autos:	66.51	2.05		3.14		-1.20		-4.65	0.	000	0.00
Medium Trucks:	77.72	-7.68		3.20)	-1.20		-4.87	0.	000	0.00
Heavy Trucks:	82.99	-10.10		3.19)	-1.20		-5.43	0.	000	0.00
Unmitigated Nois	e Levels (with	out Topo and I	barrier at	tenı	uation)			-		-	
VehicleType	Leq Peak Hou	ur Leq Day	Leo	q Ev	ening	Leq	Night		Ldn	C	NEL
Autos:	70).5 t	58.7		65.7		64	.0	/1.	3	/1.
Medium Trucks:	12	2.0	(U.5		64.4		65	.3	72.	/	72.
Heavy Trucks:	74	1.9	13.1		60.8		70	.9	74.	8	74.
venicie noise.		.0	0.3		09.0		70	.5	70.	0	70.
Centerline Distan	ce to Noise Co	ontour (in feet)	-	70 d	BA	65	dBA		50 dBA	55	dBA
			dn:		170		36	5	787	,	1.696
		CN	IEL:		174		37	5	809)	1,743
											,

	FHWA-RD	-77-108 HIGHW	AY NOIS	E PREDIC	TION MOL	DEL (9	/12/20	021)			
Scenar	io: EP				Project Na	ame: Ir	winda	le Gatewa	ay SP		
Road Nam	e: Live Oak Av	/enue			Job Nur	nber: 1	5410				
Road Segme	nt: s/o Arrow H	ighway									
SITE	SPECIFIC IN	PUT DATA			NO	ISE M	ODE	L INPUT	s		
Highway Data				Site Con	ditions (Ha	ard = 1	10, So	ft = 15)			
Average Daily	Traffic (Adt):	27,903 vehicles				A	utos:	15			
Peak Hour	Percentage:	9.19%		Me	dium Truck	(S (2 A	xles):	15			
Peak H	lour Volume:	2,564 vehicles		He	avy Trucks	s (3+ A.	xles):	15			
Ve	hicle Speed:	40 mph		Vehicle I	Nix						
Near/Far La	ne Distance:	80 feet		Vehi	cleType	Ĺ	Day	Evening	Nigh	ht L	Daily
Site Data					Aut	os: 7	, 2.4%	9.2%	18.4	4% 8	5.70%
Ba	rrier Height	0.0 feet		Me	edium Truc	ks: 7	7.7%	4.8%	17.	5%	9.06%
Barrier Type (0-W	/all, 1-Berm):	0.0		F	leavy Truc	ks: 8	34.3%	2.7%	13.	0%	5.24%
Centerline Di	st. to Barrier:	50.0 feet		Noise Sc	urce Elev	ations	(in fe	et)			
Centerline Dist.	to Observer:	50.0 feet		10130 00	Autos:	0.0	00				
Barrier Distance	to Observer:	0.0 feet		Mediu	n Trucks	2.2	00 07				
Observer Height	(Above Pad):	5.0 feet		Heav	v Trucks	8.0	04	Grade Ad	liustm	ent: 0	0
P	ad Elevation:	0.0 feet		mour	<i>y maono.</i>	0.0	•••		,		
Ro	ad Elevation:	0.0 feet		Lane Equ	uivalent Di	istanc	e (in f	eet)			
	Road Grade:	0.0%			Autos:	30.4	14				
	Left View:	-90.0 degrees		Mediur	n Trucks:	30.1	22				
	Right View:	90.0 degrees		Heav	y Trucks:	30.1	50				
FHWA Noise Mod	el Calculations	5		1							
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	2/	Barrier At	ten l	Berm	Atten
Autos:	66.51	2.09	3.	.14	-1.20	-	4.65	0.	000		0.000
Medium Trucks:	77.72	-7.66	3.	.20	-1.20	-	4.87	0.	000		0.000
Heavy Trucks:	82.99	-10.04	3.	.19	-1.20	-	5.43	0.	000		0.000
Unmitigated Noise	e Levels (with	out Topo and ba	rrier atte	enuation)							
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq Nig	ght		Ldn		CNE	Ĺ
Autos:	70	.5 68.	.7	65.8		64.0		71.	.3		71.7
Medium Trucks:	72	.0 70.	.5	64.4		65.3		72.	7		72.9
Heavy Trucks:	74	.9 73.	.8	64.8		66.9		74.	9		75.0
Vehicle Noise:	77	.7 76.	.3	69.8		70.3		78.	0		78.2
Centerline Distant	ce to Noise Co	ntour (in feet)									
-			70) dBA	65 dB.	A	6	0 dBA		55 dB	A
		Ldi	n:	171		368		79	2		1,707
		CNE	L:	175		378		814	4		1,753

	FHWA-R	D-77-108	HIGHWA	Y NOIS	E PREDI	ICTION MO	DEL (9/	12/2021)		
Scenario Road Name Road Segmen	o: 2028 NP e: Live Oak A t: s/o Arrow H	wenue Highway				Project N Job Nur	ame: Irv nber: 15	vindale 5410	Gatewa	y SP	
SITE S	PECIFIC IN	NPUT D	ATA			NO	ISE MO	ODEL I	NPUT	5	
Highway Data					Site Co	nditions (H	lard = 1	0, Soft =	= 15)		
Average Daily 1	Traffic (Adt):	38,323	vehicles				A	utos:	15		
Peak Hour I	Percentage:	9.19%			M	ledium Truc	ks (2 Ax	(les):	15		
Peak Ho	our Volume:	3,522 v	ehicles		h	leavy Truck	s (3+ Ax	(les):	15		
Vet	icle Speed:	40 n	nph		Vehicle	Mix					
Near/Far Lar	e Distance:	80 fe	eet		Ve	hicleTvpe	D	av Ev	/enina	Niaht	Dailv
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.65%
Bar	rier Heiaht:	0.0	feet			Medium True	cks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy True	cks: 8	4.3%	2.7%	13.0%	5.23%
Centerline Dis	t. to Barrier:	50.0	feet		Noise S	Source Elev	ations	(in feet)			
Centerline Dist. t	o Observer:	50.0	feet			Autos	0.00	0			-
Barrier Distance t	o Observer:	0.0	feet		Medi	um Trucks:	2.29	97			
Observer Height (/	Above Pad):	5.0	feet		Hea	avy Trucks:	8.00)4 Gr	ade Adj	iustment	: 0.0
Pa	d Elevation:	0.0	teet		Long E	auivelent D	liatanaa	(in fee	4)		
Roa	d Elevation:	0.0	teet		Lane E	Autoo:	20.44	(III Iee	9		
	coad Grade:	0.0%			Madi	Autos.	30.4	14			
	Len View: Right View:	-90.0	degrees		Heat	ann Trucks. avv Trucks:	30.12	22 50			
	rugin non.	50.0	acgrees			.,	00.10				
FHWA Noise Mode	I Calculation	IS									
VehicleType	REMEL	Traffic	Flow L	Distance	Finit	e Road	Fresne	I Ba	rrier Atte	en Ber	m Atten
Autos:	66.51		3.47	3.	.14	-1.20	-4	4.65	0.0	000	0.000
Meaium Trucks:	11.12		-6.26	3.	20	-1.20	-4	4.87	0.0	000	0.000
Heavy Trucks:	82.99		-8.68	3.	19	-1.20	-2	5.43	0.0	000	0.000
Unmitigated Noise	Levels (with	out Top	o and bar	rier atte	nuation))					
VehicleType	Leq Peak Ho	ur Le	eq Day	Leq	Evening	Leq Ni	ght	La	in	C	NEL
Autos:	71	1.9	70.	1	67.	1	65.4		72.7	,	73.0
Medium Trucks:	73	3.5	71.9	9	65.	8	66.7		74.1		74.3
Heavy Trucks:	76	5.3	75.	1	66.	2	68.3		76.2	2	76.4
Venicle Noise:	75	9.1	11.	(/1.	2	/1./		79.4	•	79.6
Centerline Distance	e to Noise C	ontour (i	n feet)			0.5.15					
			I da	70	I dBA	65 dE	5A	60 0	16A 070	55	08A
			Lar.	1:	211	1	405		1 006		2,110
			CIVEL	-	217		407		1,006		2,107

	FHWA-RD	-//-108 HIGHW		SE PI	REDICT		JEL (9	/12/20)21)		
Scenario	2028 WP				F	roject Na	ame: Ir	winda	le Gatewa	y SP	
Road Name	: Live Oak Av	enue				Job Nun	nber: 1	5410			
Road Segmen	t: s/o Arrow H	ighway									
SITE S	PECIFIC IN	PUT DATA				NO	ISE M	ODE	L INPUT	s	
Highway Data				Sit	e Condi	tions (H	ard = 1	10, So	ft = 15)		
Average Daily 1	raffic (Adt):	38,594 vehicles					A	utos:	15		
Peak Hour F	Percentage:	9.19%			Medi	um Truck	(S (2 A	xles):	15		
Peak Ho	our Volume:	3,547 vehicles			Heav	y Trucks	; (3+ A	xles):	15		
Veh	icle Speed:	40 mph		Vel	hicle Mi	x					
Near/Far Lan	e Distance:	80 feet			Vehicl	еТуре	L	Day	Evening	Night	Daily
Site Data						Aut	os: 1	72.4%	9.2%	18.4%	85.69
Bar	rier Height:	0.0 feet		1	Med	ium Truc	ks: 1	77.7%	4.8%	17.5%	9.08
Barrier Type (0-Wa	all, 1-Berm):	0.0			He	avy Truc	ks: 8	34.3%	2.7%	13.0%	5.23
Centerline Dis	t. to Barrier:	50.0 feet		No	ise Sou	rce Elev	ations	(in fe	ef)		
Centerline Dist. t	o Observer:	50.0 feet		110		Autos	0.0	00			
Barrier Distance t	o Observer:	0.0 feet			Medium	Trucks:	2.2	97			
Observer Height (A	Above Pad):	5.0 feet			Heavy	Trucks:	8.0	04	Grade Ad	justment	: 0.0
Pa	d Elevation:	0.0 feet									
Roa	d Elevation:	0.0 feet		Lai	ne Equi	alent D	istanc	e (in f	'eet)		
F	coad Grade:	0.0%				Autos:	30.4	14			
	Left View:	-90.0 degrees			Meaium	Trucks:	30.1	22			
	Right View:	90.0 degrees			Heavy	Trucks:	30.1	50			
FHWA Noise Mode	l Calculations	i i									
VehicleType	REMEL	Traffic Flow	Distand	e	Finite R	oad	Fresne	e/	Barrier Att	en Ber	m Atter
Autos:	66.51	3.50		3.14		-1.20	-	4.65	0.0	000	0.00
Medium Trucks:	77.72	-6.25		3.20		-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	82.99	-8.64		3.19		-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and ba	rrier at	tenua	tion)						
VehicleType	Leq Peak Hou	r Leq Day	Lei	q Ever	ning	Leq Nig	ght		Ldn	CI	NEL
Autos:	71.	9 70	.1		67.2		65.4		72.8	3	73
Meaium Trucks:	73.	5 71	.9		65.9		66.7		74.1	1	74
meavy Trucks:	76.	3 75	.2		55.2		68.3		76.3	5	76
venicie Noise:	79.	1 77	.1		/1.2		/1.8		79.4	÷	79
Centerline Distance	e to Noise Co	ntour (in feet)	-	70 40	4	65 20			O dBA		dBA
				ru aBi	912	oo dB	A	6	U aBA	55	aBA 0.44
		La	n: 		212		457		984		2,11
		,			110						

Monday, June 26, 2023

	FHWA-RD	-77-108 HIGHW	VAY NOI	SE P	REDIC		IODEL	(9/12/2	021)		
Scenario	2040 NP					Projec	t Name:	Irwind	ale Gatewa	ay SP	
Road Name	Live Oak Av	enue				JOD I	umper:	15410			
Road Segment	. S/O AITOW HI	ignway		ī							
SITE S	PECIFIC IN	PUT DATA					OISE	MODE	L INPUT	S	
Highway Data				Si	te Con	ditions	(Hard :	= 10, Se	oft = 15)		
Average Daily T	raffic (Adt):	51,151 vehicles	5					Autos:	15		
Peak Hour P	Percentage:	9.19%			Me	dium Tr	ucks (2	Axles).	15		
Peak Ho	ur Volume:	4,701 vehicles			He	avy Tru	cks (3+	Axles):	15		
Veh	icle Speed:	40 mph		Ve	hicle	Mix					
Near/Far Lan	e Distance:	80 feet			Veh	icleTvpe	9	Dav	Evenina	Niaht	Dailv
Site Data				1			Autos:	72.4%	6 9.2%	18.4%	85.65%
Barr	ior Hoight:	0.0 feet			М	edium T	rucks:	77.7%	6 4.8%	17.5%	9.12%
Barrier Type (0-Wa	II, 1-Berm):	0.0			1	Heavy T	rucks:	84.3%	6 2.7%	13.0%	5.23%
Centerline Dist	to Barrier:	50.0 feet		No	oise So	ource E	levatio	ns (in f	eet)		
Centerline Dist. to	Observer:	50.0 feet				Auto	s: C	.000	1		
Barrier Distance to	o Observer:	0.0 feet			Mediu	m Truck	s: 2	.297			
Observer Height (A	bove Pad):	5.0 feet			Heav	/v Truck	is: 8	.004	Grade Ad	ljustment	: 0.0
Pac	d Elevation:	0.0 feet		-	_					-	
Road	d Elevation:	0.0 feet		La	ne Eq	uivalen	t Distar	nce (in	feet)		
R	oad Grade:	0.0%				Auto	os: 30).414			
	Left View:	-90.0 degrees	5		Mediu	m Truck	is: 30).122			
	Right View:	90.0 degrees	6		Heav	/y Truck	:s: 30	0.150			
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Distance	e	Finite	Road	Fres	nel	Barrier Att	ten Ber	m Atten
Autos:	66.51	4.72	3	8.14		-1.20		-4.65	0.	000	0.00
Medium Trucks:	77.72	-5.00	3	3.20		-1.20		-4.87	0.	000	0.00
Heavy Trucks:	82.99	-7.42	3	8.19		-1.20		-5.43	0.	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and b	arrier att	enua	ation)						
VehicleType L	.eq Peak Houi	r Leq Day	Leq	Eve	ning	Leq	Night		Ldn	C	NEL
Autos:	73.	2 7	1.3		68.4		66	.6	74.	0	74.
Medium Trucks:	74.	7 7	3.2		67.1		68	.0	75.	4	75.
Heavy Trucks:	77.	6 7	6.4		67.4		69	.5	77.	5	77.
Vehicle Noise:	80.	3 7	8.9		72.4		73	.0	80.	6	80.
Centerline Distance	e to Noise Co	ntour (in feet)	7	0 dF	A	65	dBA		50 dBA	55	dBA
		1	dn:	0 00	256	00	55	1	1 187	7 00	2 558
		CN	6 Fl ·		263		56	6	1 210		2,000
		Civi			200		50	-	1,213		2,021

	FHWA-RI	D-77-108 HIGH	WAY N	OISE	PREDIC	TION N	IODEL (9/12/2	021)		
Scenar Road Nam Road Segme	io: 2040 WP ne: Live Oak A nt: s/o Arrow H	venue lighway				Project Job N	Name: lumber:	Irwind 15410	ale Gatewa	iy SP	
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE	L INPUT	s	
Highway Data				S	Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Peak Hour Peak H	y Data proge Daily Traffic (Adt): 51,422 vehicles Peak Hour Ventme: 4,726 vehicles Vehicle Speed: 40 mph Vear/Far Lane Distance: 80 feet ta Barrier Height: 0.0 feet r Type (0-Wall, 1-Berm): 0.0 anterline Dist. to Barrier: 50.0 feet terline Dist. to Observer: 50.0 feet terline Dist. to Observer: 50.0 feet r Distance to Observer: 0.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet				Me He	dium Tr avy Tru	ucks (2 / cks (3+ /	Autos Axles) Axles)	15 15 15		
Near/Ear La	ne Distance:	40 mpn		ν	ehicle l	Mix					
Nedi/Fdi La	ne Distance.	60 leet			Veh	icleType		Day	Evening	Night	Daily
Site Data						,	Autos:	72.49	6 9.2%	18.49	6 85.68%
Ba Barrier Type (0-W	rrier Height: /all, 1-Berm):	0.0 feet 0.0			M	edium T Heavy T	rucks: rucks:	77.79 84.39	6 4.8% 6 2.7%	17.5% 13.0%	6 9.09% 6 5.23%
Centerline Di	st. to Barrier:	50.0 feet		٨	loise So	ource E	levation	s (in f	eet)		
Centerline Dist. Barrier Distance Observer Height (Pi Ro	to Observer: to Observer: (Above Pad): ad Elevation: ad Elevation:	50.0 feet 0.0 feet 5.0 feet 0.0 feet		L	Mediu Heav	Auto m Truck vy Truck uivalen	s: 0. s: 2.: s: 8. t Distand	000 297 004 ce (in	Grade Ad	justmer	t: 0.0
, 10	Road Grade:	0.0%				Auto	s: 30	414	,		
	Left View: Right View:	-90.0 degree 90.0 degree	es es		Mediu Heav	m Truck vy Truck	s: 30. s: 30.	122 150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr	iel	Barrier Att	en Be	rm Atten
Autos:	66.51	4.75		3.14	ŀ	-1.20		-4.65	0.0	000	0.000
Medium Trucks: Heavy Trucks:	77.72 82.99	-5.00 -7.39		3.20 3.19))	-1.20 -1.20		-4.87 -5.43	0.0	000 000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	uation)						
VehicleType	Leq Peak Hou	ur Leq Day	L	Leq Ev	rening	Leq	Night		Ldn	0	NEL
Autos:	73	3.2	71.4		68.4		66.7	7	74.	0	74.3
Medium Trucks:	74	1.7	73.2		67.1		68.0)	75.4	4	75.6
Heavy Trucks:	77	7.6	76.4		67.5		69.6	6	77.	5	77.6
Vehicle Noise:	80).3	78.9		72.5		73.0)	80.	7	80.8
Centerline Distant	ce to Noise Co	ontour (in feet									
u		1		70 d	BA	65	dBA		60 dBA	5	5 dBA
			Ldn:		257		553		1,191		2,566
		CI	VEL:		264		568		1,223	1	2,636

	FHWA-RI	D-77-108 HIGH	IWAY NO	DISE F	REDIC	TION MO	DEL (9)	12/20	21)		
Scenar Road Nam Road Segmei	io: E le: Live Oak A nt: w/o I-605 S	venue B On-Ramp				Project N Job Nur	ame: Ir nber: 1	windal 5410	le Gatewa	/ SP	
SITE	SPECIFIC IN	IPUT DATA				NO	ISE M	ODEL	INPUTS	6	
Highway Data				Si	te Con	ditions (H	lard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	27,632 vehicl	es				Α	utos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	ks (2 A)	(les):	15		
Peak H	our Volume:	2,539 vehicle	s		He	avy Truck	s (3+ A)	(les):	15		
Ve	hicle Speed:	40 mph		Ve	hicle I	Nix					
Near/Far La	ne Distance:	80 feet		-	Vehi	cleType	Ľ	Day	Evening	Night	Daily
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.65%
Bai	rrier Heiaht:	0.0 feet			Me	edium True	cks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 8	4.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	50.0 feet		N	nise So	urce Flev	ations	(in fe	ef)		
Centerline Dist.	to Observer:	50.0 feet		-		Autos:	0.0	00			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height (Above Pad):	5.0 feet			Heav	v Trucks:	8.0	D4	Grade Adj	ustment.	0.0
Pa	ad Elevation:	0.0 feet									
Roa	ad Elevation:	0.0 feet		Lá	ine Equ	livalent D	istance	e (in fe	eet)		
	Road Grade:	0.0%			1 4 m - 11	Autos:	30.4	14			
	Left View:	-90.0 degre	es		Mealur	n Trucks:	30.1	22			
	Right view:	90.0 degre	es		neav	y TTUCKS.	30.1	50			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	el E	Barrier Atte	en Ber	m Atten
Autos:	66.51	2.05		3.14		-1.20	-	4.65	0.0	00	0.000
Medium Trucks:	77.72	-7.68		3.20		-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	82.99	-10.10		3.19		-1.20	-	5.43	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	ur Leq Da	y Le	eq Eve	ning	Leq Ni	ight		Ldn	CI	VEL
Autos:	70).5	68.7		65.7		64.0		71.3		71.6
Medium Trucks:	72	2.0	70.5		64.4		65.3		72.7		72.9
Heavy Trucks:	74	1.9	73.7		64.8		66.9		74.8		74.9
Vehicle Noise:	77	.6	76.3		69.8		70.3		78.0		78.1
Centerline Distance	e to Noise Co	ontour (in fee	9	_				_			-
				70 dE	3A	65 dE	BA	6	0 dBA	55	dBA
			Ldn:		170		365		787		1,696
		С	NEL:		174		375		809		1,743

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9	/12/20	021)		
Scenario): EP					Project	Name: I	winda	ale Gatewa	y SP	
Road Name	: Live Oak Av	enue				Job N	umber: 1	5410			
Road Segmen	t: w/o I-605 SE	3 On-Ramp									
SITE S	PECIFIC IN	PUT DATA				N	OISE N	ODE		s	
Highway Data				S	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	28,052 vehicl	es				A	Autos:	15		
Peak Hour F	Percentage:	9.19%			Me	dium Tru	icks (2 A	xles):	15		
Peak Ho	our Volume:	2,578 vehicle	s		He	avy Truc	:ks (3+ A	xles):	15		
Veh	icle Speed:	40 mph		1	/ohiclo I	Niv					
Near/Far Lan	e Distance:	80 feet		Ē	Vehi	cleTvpe		Dav	Evenina	Niaht	Dailv
Site Data							lutos:	72.4%	9.2%	18.4%	85.54%
Dar	rior Hoight:	0.0 fect			Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.08%
Barrier Type (0-W/s	all 1-Rerm)	0.0 1001			F	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.38%
Centerline Dis	t to Barrier:	50.0 feet		H							
Centerline Dist. to	o Observer:	50.0 feet		^	Voise So	urce El	evations	(in fe	eet)		
Barrier Distance to	o Observer:	0.0 feet				Autos	s: 0.0	00			
Observer Height (A	bove Pad):	5.0 feet			Mediur	n Trucks	s: 2.2	97			
Pa	d Elevation:	0.0 feet			Heav	y Trucks	s: 8.0	104	Grade Ad	justment.	0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	uivalent	Distanc	e (in i	feet)		
R	oad Grade:	0.0%				Autos	s: 30.4	14			
	Left View:	-90.0 degre	es		Mediur	n Trucks	s: 30.1	22			
	Right View:	90.0 degre	es		Heav	y Trucks	s: 30.1	50			
FHWA Noise Mode	I Calculations	:									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	66.51	2.11		3.14	4	-1.20		4.65	0.0	000	0.000
Medium Trucks:	77.72	-7.63		3.20	D	-1.20		4.87	0.0	000	0.000
Heavy Trucks:	82.99	-9.91		3.19	9	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise	Levels (witho	out Topo and	barrie	r atteni	uation)						
VehicleType	Leq Peak Hou	r Leq Day	<i>(</i>	Leq Ev	/ening	Leq	Night		Ldn	CI	VEL
Autos:	70.	6	68.7		65.8		64.0		71.4	1	71.7
Medium Trucks:	72.	1	70.6		64.5		65.3		72.8	3	72.9
Heavy Trucks:	75.	1	73.9		65.0		67.0		75.0)	75.1
Vehicle Noise:	77.	8	76.4		69.9		70.4		78.1	1	78.3
Centerline Distance	e to Noise Co	ntour (in feet)								
			L	70 d	iBA	65 (dBA	6	60 dBA	55	dBA
			Ldn:		173		372		802		1,728
		-							-		

Monday, June 26, 2023

	2021)	MODEL (9/12/2		E PREDIO	WAY NOIS	7-108 HIGHV	FHWA-RD	
	lale Gateway SP)	t Name: Irwind Number: 1541	Project Job N			nue On-Ramp	io: 2028 NP ne: Live Oak Av nt: w/o I-605 SE	Scenar Road Nam Road Segmei
	EL INPUTS	NOISE MOD	N			UT DATA	SPECIFIC INI	SITE
	oft = 15)	s (Hard = 10, S	nditions	Site Cor				Highway Data
	d 15 1/: 15 1/: 15	Autos rucks (2 Axles, ucks (3+ Axles,	edium Tru eavy Truc	Me He	s	3,323 vehicles 9.19% 522 vehicles	Traffic (Adt): Percentage: lour Volume:	Average Daily Peak Hour Peak H
	-		Mix	Vehicle		40 mph	hicle Speed:	Ve
t Dailv	Evening Nial	e Dav	nicleTvpe	Veh		80 feet	ne Distance:	Near/Far La
% 85.65%	% 9.2% 18.	Autos: 72.4						Site Data
5% 9.12%	% 4.8% 17.	Trucks: 77.7	ledium Tr	м		0.0 feet	rrier Height:	Bai
1% 5.23%	% 2.7% 13.	Trucks: 84.3	Heavy Tr			0.0	/all, 1-Berm):	Barrier Type (0-W
-	feet)	levations (in	ource El	Noise S		50.0 feet	st. to Barrier:	Centerline Dis
		os: 0.000	Autos			50.0 feet	to Observer:	Centerline Dist.
		ks: 2.297	m Trucks	Mediu		0.0 feet	to Observer:	Barrier Distance
ent: 0.0	Grade Adjustm	ks: 8.004	vy Trucks	Hea		5.0 feet	Above Pad):	Observer Height (
			· · · ·			0.0 feet	ad Elevation:	Pa
	feet)	it Distance (in	uivalent	Lane Eq		0.0 feet	ad Elevation:	Roa
		os: 30.414	Autos			0.0%	Road Grade:	1
		ks: 30.122 ks: 30.150	m Trucks vy Trucks	Mediu Hea	s s	-90.0 degrees 90.0 degrees	Left View: Right View:	
						-	al Calculations	EHWA Noise Mode
Berm Atten	Barrier Atten	Fresnel	Road	Finite	Distance	raffic Flow	REMEL	VehicleType
0.00	0.000	-4.65	-1.20	14	3.	3.47	66.51	Autos:
0.00	0.000	-4.87	-1.20	20	3.	-6.26	77.72	Medium Trucks:
0.00	0.000	-5.43	-1.20	19	3.	-8.68	82.99	Heavy Trucks:
				nuation)	oarrier atte	t Topo and b	e Levels (witho	Unmitigated Noise
CNEL	Ldn	n Night	Leq	Evening	Leq	Leq Day	Leq Peak Hour	VehicleType
73.	72.7	65.4		67.1	0.1	7	71.	Autos:
74.	74.1	66.7	3	65.8	1.9	7	73.	Medium Trucks:
76.	76.2	68.3	2	66.2	'5.1	7	76.	Heavy Trucks:
79.	79.4	71.7	2	71.2	7.7	7	79.	Vehicle Noise:
55 - 1D A	60 - ID 4			104		our (in feet)	ce to Noise Col	Centerline Distanc
2 1 10 2 1 10	070		65 0	00A	/L	,		
2,110	1 006	400		211	un. El·			
2,107	1,000	407		217	LL.	CN		
5	979 1,006	455 467	65 (211 217	.dn: IEL:	L CN		

	FHWA-RI	D-77-108 HIGH	WAYN	NOISE	PREDIC	TION M	IODEL (9/12/20	021)		
Scenar Road Nam Road Segme	io: 2028 WP ne: Live Oak A nt: w/o I-605 S	venue B On-Ramp				Project Job N	Name: lumber:	rwinda 15410	ale Gatewa	iy SP	
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE		s	
Highway Data				S	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	38,743 vehicl	es					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tr	ucks (2 /	(xles)	15		
Peak H	lour Volume:	3,560 vehicle	6		He	avy Tru	cks (3+ /	Axles):	15		
Ve	hicle Speed:	40 mph		1	(ohiclo l	Mix					
Near/Far La	ne Distance:	80 feet			Veh	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data					10/1		Autos:	72.4%	9.2%	18.4%	85.57%
Ba	rrior Hoight	0.0 feet			M	edium Ti	rucks:	77.7%	4.8%	17.5%	9.10%
Barrier Type (0-W	/all_1-Berm):	0.0			ŀ	leavy T	rucks:	84.3%	2.7%	13.0%	5.34%
Centerline Di	st. to Barrier:	50.0 feet			laina Ca	uree El	lovation	n (in fe	atl		
Centerline Dist.	to Observer:	50.0 feet		^	ioise sc	Auto	evalion		el)		
Barrier Distance	to Observer:	0.0 feet			Madiu	n Truck	s. 0.	207			
Observer Height	(Above Pad):	5.0 feet			Heav	n Truck	5. Z.	201	Grade Ad	iustment	. 0 0
P	ad Elevation:	0.0 feet			neav	y much	3. 0.	504	Orade Au	Justinent	. 0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	t Distand	ce (in t	feet)		
	Road Grade:	0.0%				Auto	s: 30.	414			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 30.	122			
	Right View:	90.0 degre	es		Heav	y Truck	s: 30.	150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresr	el	Barrier Att	en Ber	m Atten
Autos:	66.51	3.51		3.14	1	-1.20		-4.65	0.0	000	0.000
Medium Trucks:	77.72	-6.22		3.20)	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-8.54		3.19	9	-1.20		-5.43	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	r atteni	uation)						
VehicleType	Leq Peak Ho	ur Leq Day	r	Leq Ev	rening	Leq	Night		Ldn	C	NEL
Autos:	72	2.0	70.1		67.2		65.4	Ļ	72.8	В	73.1
Medium Trucks:	73	3.5	72.0		65.9		66.8	5	74.2	2	74.3
Heavy Trucks:	76	3.4	75.3		66.3		68.4	ļ.	76.4	4	76.5
Vehicle Noise:	79	9.1	77.8		71.3		71.8	5	79.5	5	79.6
Centerline Distant	ce to Noise C	ontour (in feet)								
				70 d	IBA	65	dBA	6	60 dBA	55	dBA
			Ldn:		214		461		992		2,138
		C	NEL:		220		473		1,019)	2,196

	FHWA-R	D-77-108 H	IGHWA	Y NOISI	E PREDI	CTION MO	DEL (9/ [.]	12/2021)			
Scenario Road Name Road Segmen	o: 2040 NP e: Live Oak A t: w/o I-605 \$	wenue B On-Ram	ıp			Project N Job Nur	ame: Irv nber: 15	vindale Gate 410	way SF	C	
SITE S	PECIFIC II	NPUT DAT	ГА			NO	ISE MO	DEL INPU	JTS		
Highway Data					Site Cor	nditions (H	lard = 10), Soft = 15)			
Average Daily	raffic (Adt):	51,151 ve	hicles				AL	itos: 15			
Peak Hour I	Percentage:	9.19%			M	edium Truc	ks (2 Ax	<i>les):</i> 15			
Peak Ho	our Volume:	4,701 veh	nicles		He	eavy Trucks	s (3+ Ax	<i>les):</i> 15			
Vet	nicle Speed:	40 mp	h		Vehicle	Mix					
Near/Far Lar	e Distance:	80 fee	t		Vel	hicleType	D	ay Evenin	g Nig	ght l	Daily
Site Data						Au	tos: 7	2.4% 9.2	% 18	3.4% 8	5.65%
Bar	rier Heiaht:	0.0 fe	et		N	ledium Truc	cks: 7	7.7% 4.8	% 17	7.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy Truc	cks: 84	4.3% 2.7	% 13	3.0%	5.23%
Centerline Dis	t. to Barrier:	50.0 fe	et		Noise S	ource Elev	vations	(in feet)			
Centerline Dist. t	o Observer:	50.0 fe	et			Autos:	0.00	0			
Barrier Distance t	o Observer:	0.0 fe	et		Mediu	im Trucks:	2.29	7			
Observer Height (/	Above Pad):	5.0 fe	et		Hea	vy Trucks:	8.00	4 Grade	Adjustr	ment: 0	.0
Pa	d Elevation:	0.0 fe	et		1 5-	-		(in fr + 4)			
Roa	d Elevation:	0.0 fe	et		Lane Eq	uivalent D	istance	(in feet)			
6	load Grade:	0.0%			Marth	Autos:	30.41	4			
	Left View:	-90.0 de	grees		Medic	ITT Trucks:	30.12	2			
	Right view:	90.0 de	grees		пеа	vy mucks.	30.15	90			
FHWA Noise Mode	I Calculation	IS									-
VehicleType	REMEL	Traffic Flo	ow D	istance	Finite	e Road	Fresnel	Barrier	Atten	Berm.	Atten
Autos:	66.51	4	1.72	3.	14	-1.20	-4	.65	0.000		0.000
Medium Trucks:	77.72	-{	5.00	3.:	20	-1.20	-4	.87	0.000		0.000
Heavy Trucks:	82.99) -7	7.42	3.	19	-1.20	-5	5.43	0.000		0.000
Unmitigated Noise	Levels (with	out Topo a	and barr	ier atte	nuation)						
VehicleType	Leq Peak Ho	ur Leq	Day	Leq E	Evening	Leg Ni	ght	Ldn		CNE	L
Autos:	73	3.2	71.3		68.4	1	66.6	7	4.0		74.3
Medium Trucks:	74	4.7	73.2		67.1	1	68.0	7	5.4		75.6
Heavy Trucks:	7	7.6	76.4		67.4	1	69.5	7	7.5		77.6
Vehicle Noise:	8	0.3	78.9		72.4	1	73.0	8	80.6		80.8
Centerline Distance	e to Noise C	ontour (in	feet)								
				70	dBA	65 dB	BA	60 dBA		55 dE	3A
			Ldn.		256		551	1,1	87		2,558
			CNEL		263		566	1,2	219		2,627

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION MOI	DEL (9/1	2/2021)		
Scenario	2040 WP					Project Na	a <i>me:</i> Irw	indale Gatewa	ay SP	
Road Name	e: Live Oak Av	enue				Job Nun	nber: 15	410		
Road Segmen	t: w/o I-605 SE	3 On-Ramp								
SITE S	PECIFIC IN	PUT DATA				NO	ISE MO	DEL INPUT	s	
Highway Data				S	ite Con	ditions (H	ard = 10	, Soft = 15)		
Average Daily T	Traffic (Adt):	51,571 vehicle	es				Au	tos: 15		
Peak Hour F	Percentage:	9.19%			Me	dium Truci	ks (2 Axl	es): 15		
Peak Ho	our Volume:	4,739 vehicles	5		Hei	avy Trucks	s (3+ Axl	es): 15		
Veh	icle Speed:	40 mph		v	ehicle N	lix				
Near/Far Lan	e Distance:	80 feet			Vehi	cleType	Dá	ay Evening	Night	Daily
Site Data						Au	tos: 72	2.4% 9.2%	18.4%	85.59
Barı	rier Heiaht:	0.0 feet			Me	dium Truc	:ks: 77	.7% 4.8%	17.5%	9.10%
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy Truc	cks: 84	.3% 2.7%	13.0%	5.31
Centerline Dis	t. to Barrier:	50.0 feet			laise Sa	urce Elev	ations (in foot)		
Centerline Dist. to	o Observer:	50.0 feet			0136 00	Autos:	0.00	n		
Barrier Distance to	o Observer:	0.0 feet			Mediur	n Trucks	2 29	7		
Observer Height (A	Above Pad):	5.0 feet			Heav	v Trucks:	8.00	4 Grade Ac	ljustment	: 0.0
Pa	d Elevation:	0.0 feet		_		,				
Roa	d Elevation:	0.0 feet		L	ane Equ	ivalent D	istance	(in feet)		
R	coad Grade:	0.0%				Autos:	30.41	4		
	Left View:	-90.0 degree	es		Mediur	n Trucks:	30.12	2		
	Right view:	90.0 degree	es		neav	y TTUCKS.	30.15	0		
FHWA Noise Mode	I Calculations									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier At	ten Ber	m Atten
Autos:	66.51	4.76		3.14		-1.20	-4	.65 0.	000	0.00
Medium Trucks:	77.72	-4.98		3.20)	-1.20	-4	.87 0.	000	0.00
Heavy Trucks:	82.99	-7.32		3.19)	-1.20	-5	.43 0.	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barrie	er attenu	uation)					
VehicleType	Leq Peak Hou	 Leq Day 	r	Leq Ev	ening	Leq Ni	ght	Ldn	C	VEL
Autos:	73.	2	71.4		68.4		66.7	74.	0	74.
Medium Trucks:	74.	7	73.2		67.1		68.0	75.	4	75.
Heavy Trucks:	77.	7	76.5		67.5		69.6	77.	6	77.
Vehicle Noise:	80.	4	79.0		72.5		73.0	80.	7	80.
Centerline Distance	e to Noise Co	ntour (in feet)								
			L	70 d	BA	65 dB	A	60 dBA	55	dBA
			Ldn:		258		557	1,199	J	2,58
		~ ~			10CE		572	1 2 3 3	,	2 652

Monday, June 26, 2023

	FHWA-RI	D-77-108 HIGI	IWAY N	OISE I	PREDIC		IODEL	(9/12/2	021)		
Scenar Road Nan Road Segme	rio: E ne: Live Oak A nt: e/o Grahan	venue n Road				Project Job N	Name: lumber:	Irwind 15410	ale Gatewa	iy SP	
SITE	SPECIFIC IN	IPUT DATA				N	IOISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	: 10, S	oft = 15)		
Average Daily Peak Hour Peak H	Traffic (Adt): Percentage: Iour Volume:	16,505 vehic 9.19% 1,517 vehicle	les es		Me He	dium Tr avy Tru	ucks (2 cks (3+	Autos Axles) Axles)	: 15 : 15 : 15		
Ve	hicle Speed:	40 mph		14	chiele	Mise					
Near/Far La	ne Distance:	80 feet		v	Veh	icleType		Dav	Evenina	Niaht	Daily
Site Data					1011		Autos:	72.49	6 9.2%	18.4%	85.65%
Pa	rrior Hoight:	0.0 foot			М	edium T	rucks:	77.79	6 4.8%	17.5%	9.129
Barrier Type (0-W	/all, 1-Berm):	0.0 1001			1	Heavy T	rucks:	84.3%	6 2.7%	13.0%	5.23%
Centerline Di	ist. to Barrier:	50.0 feet			oico Si	urco E	lovation	e (in f	oot)		
Centerline Dist.	to Observer:	50.0 feet		N	0136 30	Auto	evauon	000	eelj		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck	5. U	207			
Observer Height	(Above Pad):	5.0 feet			Heav	n Truck	з. 2 е [,] 8	004	Grade Ad	liustment	· 0.0
P	ad Elevation:	0.0 feet			mean	y mack	3. 0	.004	0/000/10	Jaounom	. 0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 30	.414			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 30	.122			
	Right View:	90.0 degre	es		Heav	ry Truck	s: 30	.150			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Atten
Autos:	66.51	-0.19)	3.14		-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72	-9.92	2	3.20		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-12.33	5	3.19		-1.20		-5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	ır Leq Da	y L	Leq Ev	ening	Leq	Night		Ldn	С	NEL
Autos:	68	.3	66.4		63.5		61.	7	69.	1	69.
Medium Trucks:	69	.8	68.3		62.2		63.	1	70.	5	70.
Heavy Trucks:	72	2.7	71.5		62.5		64.	6	72.0	6	72.
Vehicle Noise:	75	i.4	74.0		67.5		68.	1	75.	7	75.
Centerline Distan	ce to Noise Co	ontour (in fee	t)								
				70 d	BA	65	dBA		60 dBA	55	dBA
			Ldn:		120		259	9	558	3	1,203
		C	NEL:		124		266	3	574	Ļ	1,236

	FHWA-RD	0-77-108 HIGHWA	Y NOISE	PREDIC	TION MO	DEL (9)	/12/202	21)		
Scenar	rio: EP				Project N	ame: Ir	windale	e Gatewa	y SP	
Road Nan	ne: Live Oak Av	venue			Job Nur	nber: 1	5410			
Road Segme	nt: e/o Graham	n Road								
SITE	SPECIFIC IN	PUT DATA			NO	ISE M	ODEL	INPUTS	5	
Highway Data				Site Con	ditions (H	lard = 1	10, Sof	it = 15)		
Average Daily	Traffic (Adt):	17,344 vehicles				A	utos:	15		
Peak Hour	Percentage:	9.19%		Me	dium Truc	ks (2 A)	xles):	15		
Peak H	lour Volume:	1,594 vehicles		He	avy Truck	s (3+ A)	xles):	15		
Ve	hicle Speed:	40 mph	-	Vehicle	Mix					
Near/Far La	ne Distance:	80 feet	-	Veh	icleTvpe	L	Dav I	Evenina	Night	Dailv
Site Data					Au	tos: 7	2.4%	9.2%	18.4%	84.97%
Ba	rrier Height:	0.0 feet		M	edium Tru	cks: 7	7.7%	4.8%	17.5%	9.09%
Barrier Type (0-V	Vall. 1-Berm):	0.0		1	Heavy Tru	cks: 8	34.3%	2.7%	13.0%	5.93%
Centerline D	ist. to Barrier:	50.0 feet	-	Noine Cr	uree Eler	otiono	lin for			
Centerline Dist.	to Observer:	50.0 feet		NOISe St	Autoo:	auons	00	:0		
Barrier Distance	to Observer:	0.0 feet		Madiu	Autos.	0.0	00			
Observer Height	(Above Pad):	5.0 feet		Healu	III TTUCKS.	2.2	97 04 (Grade Adi	iuctmon	+ 0.0
P	ad Elevation:	0.0 feet		near	ly mucks.	0.0	04 0	Shade Haj	usunem	. 0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent D	istance	e (in fe	et)		
	Road Grade:	0.0%			Autos:	30.4	14			
	Left View:	-90.0 degrees		Mediu	m Trucks:	30.1	22			
	Right View:	90.0 degrees		Heav	y Trucks:	30.1	50			
FHWA Noise Mod	el Calculation	S								
VehicleType	REMEL	Traffic Flow D	listance	Finite	Road	Fresne	el B	Barrier Atte	en Bei	rm Atten
Autos:	66.51	-0.01	3.1	4	-1.20	-	4.65	0.0	000	0.000
Medium Trucks:	77.72	-9.71	3.2	20	-1.20	-	4.87	0.0	000	0.000
Heavy Trucks:	82.99	-11.57	3.1	9	-1.20	-	5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and bar	rier atten	uation)						-
VehicleType	Leq Peak Hou	r Leq Day	Leq E	vening	Leq Ni	ght	l	Ldn	С	NEL
Autos:	68	.4 66.6	6	63.7		61.9		69.2	2	69.6
Medium Trucks:	70	.0 68.5	5	62.4		63.3		70.7	,	70.8
Heavy Trucks:	73	.4 72.3	3	63.3		65.4		73.3	ł	73.5
Vehicle Noise:	75	.9 74.5	5	67.9		68.5		76.2	2	76.4
Centerline Distan	ce to Noise Co	ontour (in feet)								
			70	dBA	65 dE	BA	60) dBA	55	dBA
		Ldn	<i>.</i>	130		279		601		1,295
		CNEL	:	133		287		617		1,330

	FHWA-R	D-77-108	HIGHWA	Y NOIS	E PREDI	СТІОН МО	DEL (9/	12/202	:1)		
Scenar Road Nam Road Segmei	io: 2028 NP le: Live Oak A nt: e/o Grahar	venue n Road				Project N Job Nur	ame: In nber: 15	windale 5410	Gatewa	y SP	
SITE	SPECIFIC IN	NPUT DA	TA			NO	ISE M	ODEL	INPUTS	3	
Highway Data					Site Co.	nditions (H	lard = 1	0, Soft	= 15)		
Average Daily	Traffic (Adt):	28,756 v	ehicles				A	utos:	15		
Peak Hour	Percentage:	9.19%			M	edium Truc	ks (2 Ax	(les):	15		
Peak H	our Volume:	2,643 ve	hicles		H	eavy Truck	s (3+ Ax	(les):	15		
Ve	hicle Speed:	40 m	ph		Vehicle	Mix					
Near/Far La	ne Distance:	80 fe	et		Vel	hicleType	D	ay E	vening	Night	Daily
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.65%
Bai	rrier Heiaht:	0.0 f	eet		٨	ledium True	cks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0				Heavy True	cks: 8	4.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	50.0 f	eet		Noise S	ource Elev	ations	(in fee	t)		
Centerline Dist.	to Observer:	50.0 fe	eet			Autos:	0.00	00	7		-
Barrier Distance	to Observer:	0.0 f	eet		Medii	im Trucks:	2.29	97			
Observer Height (Above Pad):	5.0 f	eet		Hea	vy Trucks:	8.00)4 @	Grade Adj	ustment	: 0.0
Pa	ad Elevation:	0.0 f	eet		1	·		(in \$-	- 41		
Roa	ad Elevation:	0.0 fe	eet		Lane Ec	uivalent D	nstance	e (In re	et)		
	Road Grade:	0.0%			Martin	Autos:	30.4	14			
	Left View:	-90.0 d	egrees		Medil	ITT Trucks:	30.12	22			
	Right view:	90.0 d	egrees		пеа	vy mucks.	30.13	50			
FHWA Noise Mode	el Calculation	s									-
VehicleType	REMEL	Traffic F	low D	Distance	Finite	e Road	Fresne	I B	arrier Atte	en Ber	m Atten
Autos:	66.51		2.22	3.	14	-1.20	-4	4.65	0.0	00	0.000
Medium Trucks:	77.72		-7.50	3.	20	-1.20	-4	4.87	0.0	00	0.000
Heavy Trucks:	82.99		-9.92	3.	19	-1.20	-{	5.43	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo	and bar	rier atte	nuation)						
VehicleType	Leq Peak Ho	ur Lei	q Day	Leq	Evening	Leq Ni	ight	L	.dn	CI	NEL
Autos:	70).7	68.8	3	65.9	9	64.1		71.5	;	71.8
Medium Trucks:	72	2.2	70.7	7	64.6	3	65.5		72.9)	73.1
Heavy Trucks:	75	5.1	73.9	9	64.9	9	67.0		75.0)	75.1
Vehicle Noise:	71	7.8	76.4	1	69.9	9	70.5		78.1		78.3
Centerline Distance	e to Noise C	ontour (in	i feet)								
				70) dBA	65 dE	3A	60	dBA	55	dBA
			Ldn	C.	174		375		809		1,742
			CNEL	2	179		386		831		1,789

							(12/2	<u>, , , , , , , , , , , , , , , , , , , </u>		
Scenar	<i>io:</i> 2028 WP					Project	Name: Ir	winda	ale Gatewa	/ SP	
Road Nan	ne: Live Oak Av	/enue				Job N	umber: 1	5410			
Road Segme	nt: e/o Graham	Road									
SITE	SPECIFIC IN	PUT DATA				N	OISE M	ODE	L INPUTS	3	
Highway Data				S	Site Con	ditions	(Hard = 1	0, Sc	oft = 15)		
Average Daily	Traffic (Adt):	29,595 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	icks (2 A	(les):	15		
Peak H	lour Volume:	2,720 vehicle	в		Hea	avy Truc	:ks (3+ A)	(les):	15		
Ve	ehicle Speed:	40 mph		ī	/ehicle N	Nix					
Near/Far La	ne Distance:	80 feet		F	Vehi	cleType	L	Day	Evening	Night	Daily
Site Data							Autos: 7	2.4%	9.2%	18.4%	85.25%
Ba	rrier Height	0.0 feet			Me	edium Ti	ucks: 7	7.7%	4.8%	17.5%	9.11%
Barrier Type (0-V	Vall. 1-Berm):	0.0			F	leavy Ti	ucks: 8	4.3%	2.7%	13.0%	5.64%
Centerline Di	ist. to Barrier:	50.0 feet			(-i 0-			(in \$	41		
Centerline Dist.	to Observer:	50.0 feet		~	ioise So	ource El	evations		eet)		
Barrier Distance	to Observer:	0.0 feet			A da alian	Auto	s: 0.0	00			
Observer Height	(Above Pad):	5.0 feet			Meaiur	n Truck	5. 2.2	97	Crada Adi	untmont	0.0
P	ad Elevation:	0.0 feet			Heav	y Truck	5. 8.0	04	Graue Auj	usuneni.	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	uivalent	Distance	e (in i	feet)		
	Road Grade:	0.0%				Auto	s: 30.4	14			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 30.1	22			
	Right View:	90.0 degree	es		Heav	y Truck	s: 30.1	50			
FHWA Noise Mod	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	e/	Barrier Atte	en Beri	m Atten
Autos:	66.51	2.33		3.14	1	-1.20	-	4.65	0.0	00	0.000
Medium Trucks:	77 72	-7.39		3.20)	1 20	-	4.87	0.0	00	0.000
	11.12				-	=1.20					0.000
Heavy Trucks:	82.99	-9.47		3.19	9	-1.20	-	5.43	0.0	00	0.000
Heavy Trucks: Unmitigated Nois	82.99 e Levels (with	-9.47 out Topo and	barrier a	3.19 atteni	ation)	-1.20	-	5.43	0.0	00	0.000
Heavy Trucks: Unmitigated Nois VehicleType	82.99 e Levels (without Leg Peak Hout	-9.47 out Topo and r Leq Day	barrier a	3.19 attent .eq Ev) uation) vening	-1.20 -1.20 Leq	- Night	5.43	0.0 Ldn	00 <i>CN</i>	0.000
Heavy Trucks: Unmitigated Nois VehicleType Autos:	82.99 e Levels (witho Leg Peak Hou 70	-9.47 out Topo and r Leq Day .8	barrier a L 68.9	3.19 attenu .eq Ev	auation) vening 66.0	-1.20 -1.20 Leq	- Night 64.2	5.43	0.0 <i>Ldn</i> 71.6	00 C/	1.000
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	82.99 e Levels (with Leq Peak Hou 70 72	-9.47 out Topo and r Leq Day .8 .3	barrier (L 68.9 70.8	3.19 attent .eq Ev	wation) vening 66.0 64.7	-1.20 -1.20 Leq	- Night 64.2 65.6	5.43	0.0 Ldn 71.6 73.0	00 <i>CI</i>	1.000
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 70 72 75	-9.47 Dut Topo and r Leq Day .8 .3 .5	barrier 6 / L 68.9 70.8 74.4	3.19 attenu .eq Ev	<i>uation)</i> <i>rening</i> 66.0 64.7 65.4	-1.20 -1.20 Leq	Night 64.2 65.6 67.5	5.43	0.0 Ldn 71.6 73.0 75.4	00 C/	VEL 71.9 73.2 75.6
Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 70 72 75 78	-9.47 -9.47 Dut Topo and r Leq Day 8 .3 .5 .1	barrier 2 68.9 70.8 74.4 76.7	3.19 atteni .eq Ev	uation) vening 66.0 64.7 65.4 70.2	-1.20 -1.20 Leq	Night 64.2 65.6 67.5 70.7	5.43	0.0 <i>Ldn</i> 71.6 73.0 75.4 78.4	00 C/	VEL 71.9 73.2 75.0 78.0
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distant	e Levels (with Leq Peak Hou 70 72 75 78 ce to Noise Co	-9.47 -9.47 r Leq Day .8 .3 .5 .1 .1 .1 	barrier 6 68.9 70.8 74.4 76.7	3.19 attenu .eq Ev	vation) vening 66.0 64.7 65.4 70.2	-1.20 -1.20	Night 64.2 65.6 67.5 70.7	5.43	0.0 <i>Ldn</i> 71.6 73.0 75.4 78.4		71.9 73.2 75.0 78.0
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distant	e Levels (withou Leq Peak Hou 70 72 75 78 ce to Noise Co	-9.47 Dut Topo and r Leg Day 8 3 5 1 ntour (in feet	barrier 6 68.9 70.8 74.4 76.7	3.19 attenu .eq Ev 70 d	uation) rening 66.0 64.7 65.4 70.2	-1.20 -1.20 Leq 65	Night 64.2 65.6 67.5 70.7	6.43	0.0 <u>Ldn</u> 71.6 73.0 75.4 78.4 50 dBA	00 <i>CN</i> 55	71.9 71.9 73.2 75.6 78.6 dBA
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Centerline Distance	82.99 e Levels (without Leg Peak Hout 70 72 75 78 ce to Noise Co	-9.47 Dut Topo and r Leq Day 8 .3 .5 .1 Intour (in feet	barrier a 68.9 70.8 74.4 76.7 0 Ldn:	3.19 attenu .eq Ev 70 d	uation) rening 66.0 64.7 65.4 70.2 IBA 182	-1.20 -1.20 Leq 65	- Night 64.2 65.6 67.5 70.7 dBA 392	6.43	0.0 <i>Ldn</i> 71.6 73.0 75.4 78.4 50 <i>dBA</i> 845	00 Ch	0.000 <u>IEL</u> 71.9 73.2 75.6 78.6 <u>dBA</u> 1,819

Monday, June 26, 2023

	FHWA-RI	0-77-108 HIGH	IWAY NO	DISE I	PREDIC		IODEL	(9/12/2	021)		
Scenar Road Nan Road Segme	rio: 2040 NP ne: Live Oak A nt: e/o Grahan	venue n Road				Project Job N	Name: lumber:	Irwinda 15410	ale Gatewa	ay SP	
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	= 10, So	oft = 15)		
Average Daily Peak Hour Peak H	Traffic (Adt): Percentage: Iour Volume:	43,456 vehicle 9.19% 3,994 vehicle	es s		Me He	dium Tr avy Tru	ucks (2 cks (3+	Autos: Axles): Axles):	15 15 15		
Ve	hicle Speed:	40 mph		v	ehicle	Mix					
Near/Far La	ne Distance:	80 feet		F	Veh	icleTvpe	,	Dav	Evenina	Niaht	Dailv
Site Data							Autos:	72.4%	9.2%	18.4%	85.65%
Ba	rrier Height:	0.0 feet			М	edium T	rucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-N	Vall, 1-Berm):	0.0			1	Heavy T	rucks:	84.3%	2.7%	13.0%	5.23%
Centerline Di	ist. to Barrier:	50.0 feet		N	loise So	ource E	levatior	ns (in fe	eet)		
Centerline Dist.	to Observer:	50.0 feet				Auto	s: 0	.000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	/v Truck	s: 8	.004	Grade Ad	liustment	2: 0.0
P	ad Elevation:	0.0 feet				,					
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	ice (in	feet)		
	Road Grade:	0.0%				Auto	s: 30	.414			
	Left View: Right View:	-90.0 degree	es es		Mediu Heav	m Truck /v Truck	's: 30 's: 30	.122			
ELIMA Noise Med	al Coloulation										
VehicleType	PEMEI	Traffic Flow	Distar	100	Finite	Road	Free	nel	Rarrier Att	en Re	rm Atten
Autos	66.51	4 02	Distai	3 14	1 111100	-1 20	1103	-4 65	0.0	000	0.00
Medium Trucks:	77 72	-5.71		3.20		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-8.13		3.19		-1.20		-5.43	0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ation)						
VehicleType	Leq Peak Hou	Ir Leq Day	/ Le	eq Ev	ening	Leq	Night		Ldn	С	NEL
Autos:	72	.5	70.6		67.7		65	9	73.3	3	73.
Medium Trucks:	74	.0	72.5		66.4		67	3	74.	7	74.
Heavy Trucks:	76	.9	75.7		66.7		68	8	76.	8	76.
Vehicle Noise:	79	.6	78.2		71.7		72	3	79.9	9	80.
Centerline Distan	ce to Noise Co	ontour (in feet)	70 4	04		-10.4		0 -/D 4		
			1 -1	70 a	BA	65	aBA 40		00 aBA	55	aBA
		0	Lan:		229		49	+	1,065		2,294
		C	VEL:		236		50	5	1,094	•	2,357

	FHWA-RI	D-77-108 HIGH	WAY N	OISE	PREDIC	TION M	ODEL (9/12/2	021)			
Scenar Road Nan Road Segme	io: 2040 WP ne: Live Oak A nt: e/o Grahar	venue n Road				Project Job N	Name: I umber:	rwind 15410	ale Gatewa	ay SP		
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPUT	s		
Highway Data				S	Site Con	ditions	(Hard =	10, S	oft = 15)			
Average Daily Peak Hour Peak H Ve	Traffic (Adt): Percentage: Iour Volume: hicle Speed:	44,295 vehicle 9.19% 4,071 vehicles 40 mph	s	V	Mei Hei /ehicle M	dium Tru avy Truc flix	, icks (2 A :ks (3+ A	Autos: Axles): Axles):	15 15 15			
Near/Far La	ne Distance:	80 feet			Vehi	cleType		Day	Evening	Nigl	nt	Daily
Site Data						A	lutos:	72.4%	6 9.2%	18.	4% 8	85.39%
Ba Barrier Type (0-W	rrier Height: /all, 1-Berm):	0.0 feet 0.0			Me F	edium Tr leavy Tr	ucks: ucks:	77.7% 84.3%	6 4.8% 6 2.7%	17. 13.	5% 0%	9.11% 5.50%
Centerline Di	st. to Barrier:	50.0 feet		۸	loise So	urce El	evations	s (in f	eet)			
Dist. Barrier Distance Observer Height	to Observer: to Observer: (Above Pad): ad Elevation:	0.0 feet 5.0 feet 0.0 feet			Mediur Heav	Autos n Trucks y Trucks	s: 0.0 s: 2.1 s: 8.0	000 297 004	Grade Ad	ljustm	ent: (0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalent	Distand	e (in	feet)			
	Road Grade:	0.0%				Autos	s: 30.4	414				-
	Left View: Right View:	-90.0 degree 90.0 degree	es es		Mediur Heav	n Trucks y Trucks	s: 30. s: 30.	122 150				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	len	Berm	Atten
Autos:	66.51	4.08		3.14	Ļ	-1.20		-4.65	0.	000		0.000
Medium Trucks:	77.72	-5.63		3.20)	-1.20		-4.87	0.	000		0.000
Heavy Trucks:	82.99	-7.82		3.19)	-1.20		-5.43	0.	000		0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenı	uation)							
VehicleType	Leq Peak Ho	ur Leq Day	L	.eq Ev	rening	Leq	Night		Ldn		CNE	EL
Autos:	72	2.5	70.7		67.7		66.0)	73.	3		73.7
Medium Trucks:	74	1.1	72.6		66.5		67.3	5	74.	8		74.9
Heavy Trucks:	77	7.2	76.0		67.0		69.1		77.	1		77.2
Vehicle Noise:	79	9.8	78.4		71.9		72.5	;	80.	1		80.3
Centerline Distan	ce to Noise C	ontour (in feet										
L				70 d	BA	65 (dBA		60 dBA		55 d	BA
			Ldn:		236		509	•	1,096	6		2,362
		CI	VEL:		243		523		1,126	6		2,425

	FHWA-RI	D-77-108 HIGH	IWAY N	OISE	PREDIC	TION MO	DEL (9/12	/2021)		
Scenar Road Nam Road Segme	io: E ne: Live Oak A nt: w/o Rivergi	venue rade Road				Project N Job Nur	ame: Irwir nber: 154	idale Gatewa 10	ay SP	
SITE	SPECIFIC IN	IPUT DATA				NO	ISE MOI	DEL INPUT	'S	
Highway Data				S	ite Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	18,226 vehicl	es				Auto	os: 15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	ks (2 Axle	s): 15		
Peak H	lour Volume:	1,675 vehicle	s		He	avy Truck	s (3+ Axle	s): 15		
Ve	hicle Speed:	40 mph		V	ehicle I	Nix				
Near/Far La	ne Distance:	80 feet		Ē	Vehi	cleType	Day	Evening	Night	Daily
Site Data						Au	tos: 72.	4% 9.2%	18.4%	6 85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium True	cks: 77.	7% 4.8%	17.5%	6 9.12%
Barrier Type (0-W	(all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 84.3	3% 2.7%	13.0%	6 5.23%
Centerline Di	st. to Barrier:	50.0 feet		N	oise So	urce Elev	ations (in	feet)		
Centerline Dist.	to Observer:	50.0 feet				Autos:	0.000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.297			
Observer Height	Above Pad):	5.0 feet			Heav	y Trucks:	8.004	Grade Ad	djustmen	t: 0.0
Pi	ad Elevation:	0.0 feet				·	N-4 (- f 41		
Roi	ad Elevation:	0.0 feet		L	ane Equ	IIvalent D	istance (I	n teet)		
	Road Grade:	0.0%			Madiu	AUIOS:	30.414			
	Len View:	-90.0 degre	es		Heav	n Trucks.	30.122			
	Night view.	90.0 degre	es		neav	y mucho.	30.130			
FHWA Noise Mode	el Calculation	s							-	
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	Barrier At	ten Be	rm Atten
Autos:	66.51	0.24		3.14		-1.20	-4.6	5 0.	.000	0.000
Medium Trucks:	77.72	-9.48		3.20		-1.20	-4.8	7 0.	.000	0.000
Heavy Trucks:	82.99	-11.90		3.19		-1.20	-5.4	3 0.	.000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	attenu	ation)					
VehicleType	Leq Peak Hou	ur Leq Da	y L	Leq Eve	ening	Leq Ni	ight	Ldn	0	NEL
Autos:	68	3.7	66.9		63.9		62.2	69	.5	69.8
Medium Trucks:	70).2	68.7		62.6		63.5	70	.9	71.1
Heavy Trucks:	73	3.1	71.9		63.0		65.0	73	.0	73.1
Vehicle Noise:	75	5.8	74.4		68.0		68.5	76	.2	76.3
Centerline Distant	ce to Noise Co	ontour (in fee	9							
				70 dl	BA	65 dE	3A	60 dBA	5	5 dBA
			Ldn:		129		277	59	7	1,285
		С	NEL:		132		284	61	3	1,320

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9	/12/2	021)		
Scenario:	EP					Project	Name: I	winda	ale Gatewa	y SP	
Road Name:	Live Oak Av	enue				Job N	umber: 1	5410			
Road Segment:	w/o Rivergra	ade Road									
SITE SI	PECIFIC IN	PUT DATA				N	OISE M	IODE	L INPUT	s	
Highway Data				5	Site Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily Tr	affic (Adt):	18,669 vehicle	es				A	Autos:	15		
Peak Hour P	ercentage:	9.19%			Me	dium Tru	icks (2 A	xles):	15		
Peak Ho	ur Volume:	1,716 vehicle	s		He	avy Truc	ks (3+ A	xles):	15		
Vehi	cle Speed:	40 mph		1	Vehicle I	Mix					
Near/Far Lane	Distance:	80 feet		F	Vehi	icleType	1	Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.38%
Barri	er Heiaht [.]	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.09%
Barrier Type (0-Wal	I. 1-Berm):	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.53%
Centerline Dist.	to Barrier:	50.0 feet		H	Vaias C-	uree El	watio	lin f.	a fl		
Centerline Dist. to	Observer:	50.0 feet		'	voise So	ource El	evations	(IN TO	eet)		
Barrier Distance to	Observer:	0.0 feet				Autos	. 0.0	00			
Observer Height (Al	bove Pad):	5.0 feet			Mediur	m Trucks	2.2	97	Grade Ad	iuctmont	
Pad	Elevation:	0.0 feet			Heav	y Trucks	: 8.0	104	Graue Auj	usuneni	0.0
Road	Elevation:	0.0 feet		1	Lane Equ	uivalent	Distanc	e (in i	feet)		
Ro	ad Grade:	0.0%				Autos	: 30.4	14			
	Left View:	-90.0 degree	es		Mediur	m Trucks	: 30.1	22			
F	Right View:	90.0 degree	es		Heav	y Trucks	: 30.1	50			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	66.51	0.33		3.14	4	-1.20		4.65	0.0	000	0.00
Medium Trucks:	77.72	-9.40		3.20	0	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	82.99	-11.55		3.19	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise L	evels (witho	out Topo and	barrie	er atten	uation)						
VehicleType L	eq Peak Hou	r Leq Day	<i>(</i>	Leg Ev	vening	Leq I	Vight		Ldn	CI	VEL
Autos:	68.	8	67.0		64.0		62.3		69.6	3	69.
Medium Trucks:	70.	3	68.8		62.7		63.6		71.0)	71.
Heavy Trucks:	73.	4	72.3		63.3		65.4		73.4	1	73.
Vehicle Noise:	76.	1	74.7		68.1		68.7		76.4	1	76.
Centerline Distance	to Noise Co	ntour (in feet)								
			L	70 c	1BA	65 0	IBA	6	60 dBA	55	dBA
			Ldn:		133		286		617		1,329
		-									

Monday, June 26, 2023

FHV	VA-RD-	77-108 HIGHV	VAY N	OISE	PREDIC	TION N	IODEL (9/12/20	021)		
Scenario: 2028 Road Name: Live (Road Segment: w/o F	NP Oak Ave Rivergra	enue de Road				Projec Job N	t Name: lumber:	Irwinda 15410	ile Gatewa	y SP	
SITE SPECIF	IC INF	PUT DATA				1	NOISE I	NODE	L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (A Peak Hour Percent Peak Hour Volu	Adt): 2 age: ime: 2	27,955 vehicle: 9.19% 2,569 vehicles	5		Me He	dium Tr avy Tru	ucks (2) cks (3+)	Autos: Axles): Axles):	15 15 15		
Vehicle Sp	eed:	40 mph		-							
Near/Far Lane Dista	nce:	80 feet		-	Venicie I Veh	NIX icleType	•	Dav	Evenina	Niaht	Daily
Site Data						0.01.900	Autos:	72.4%	9.2%	18.4%	85.65%
Barrior Hoi	aht.	0.0 foot			Me	edium T	rucks:	77.7%	4.8%	17.5%	9.129
Barrier Type (0-Wall, 1-Be	erm):	0.0			ŀ	leavy T	rucks:	84.3%	2.7%	13.0%	5.23%
Centerline Dist. to Bai	rrier:	50.0 feet		-	Noise Sc	urce F	levation	s (in fe	ef)		
Centerline Dist. to Obser	rver:	50.0 feet		-		Auto	us' ()	000			
Barrier Distance to Obser	rver:	0.0 feet			Mediu	n Truck	re: 2	207			
Observer Height (Above F	Pad):	5.0 feet			Heav	v Truck	is: 2.	004	Grade Ad	iustment	0.0
Pad Eleva	tion:	0.0 feet			mour	<i>y</i>					
Road Eleva	tion:	0.0 feet		1	Lane Equ	uivalen	t Distan	ce (in f	feet)		
Road Gr	ade:	0.0%				Auto	s: 30.	414			
Left V	liew:	-90.0 degrees	S		Mediur	m Truck	(s: 30.	122			
Right V	liew:	90.0 degrees	5		Heav	ry Truck	s: 30.	150			
FHWA Noise Model Calcu	lations										
VehicleType REM	EL	Traffic Flow	Dista	nce	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	2.10		3.1	4	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	77.72	-7.63		3.2	0	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-10.05		3.1	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Levels	(witho	ut Topo and b	arrier a	atten	uation)						
VehicleType Leq Pea	ak Hour	Leq Day	L	eq Eı	vening	Leq	Night		Ldn	C	NEL
Autos:	70.5	56	8.7		65.8		64.0)	71.4	1	71.
Medium Trucks:	72.1	1 7	0.6		64.5		65.3	3	72.8	3	72.
Heavy Trucks:	74.9	9 7	3.8		64.8		66.9	9	74.9	9	75.
Venicle Noise:	//./	((6.3		69.8		70.4	ł	78.0	J	78.
Centerline Distance to No	ise Cor	ntour (in feet)	-	70 -		65	dBA	4	Oden	FF	ARA
		,	dn	100	171	00	269	C	704	35	1 710
		CN	EL:		176		300		794 815		1.756
		Ch					570		010		1,700

	FHWA-RD	0-77-108 HIGHW	AY NOIS			IODEL (9	/12/20)21)		
Scenar Road Nan Road Segme	io: 2028 WP ne: Live Oak Av nt: w/o Rivergr	venue ade Road			Project Job N	Name: Ir lumber: 1	winda 5410	ile Gateway	SP	
SITE	SPECIFIC IN	PUT DATA			N	IOISE M	ODE	L INPUTS		
Highway Data				Site Con	ditions	(Hard = 1	10, So	ft = 15)		
Average Daily	Traffic (Adt):	28,398 vehicles				A	utos:	15		
Peak Hour	Percentage:	9.19%		Me	dium Tr	ucks (2 A	xles):	15		
Peak H	our Volume:	2,610 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		Vehiele	Mise					
Near/Far La	ne Distance:	80 feet		Venicie i	NIX icleType		2014	Evening	Night	Daily
Site Data				ven	cierype	Autos	72 A%	0.2%	18.4%	85 47%
one butu		0.0.6		M	, edium T	rucks: 1	7.7%	4.8%	17.5%	9.10%
Ba Barrier Tune (0 M	rrier Height:	0.0 feet		ŀ	leavy T	rucks: 8	34.3%	2.7%	13.0%	5.43%
Contorlino Di	int to Borrior	0.0 50.0 feet								
Centerline Di	to Observer:	50.0 feet		Noise Sc	ource El	evations	(in fe	et)		
Barrier Distance	to Observer:	0.0 feet			Auto	s: 0.0	00			
Observer Height	(Above Pad):	5.0 feet		Mediu	m Truck	s: 2.2	97			
Diserver neight	ad Elevation:	0.0 feet		Heav	y Truck	s: 8.0	04	Grade Adju	ustment:	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	eet)		
10	Road Grade:	0.0%			Auto	s: 30.4	14	,		
	Left View:	-90 0 degrees		Mediu	m Truck	s: 30.1	22			
	Right View:	90.0 degrees		Heav	y Truck	s: 30.1	50			
	0									
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	2/	Barrier Atte	n Beri	m Atten
Autos:	66.51	2.16	3	.14	-1.20	-	4.65	0.0	00	0.000
Medium Trucks:	11.12	-7.57	3	.20	-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	82.99	-9.81	3	.19	-1.20	-	5.43	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and ba	arrier atte	enuation)					_	
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq	Night		Ldn	CI	JEL
Autos:	70	.6 68	3.8	65.8		64.1		71.4		71.7
Medium Trucks:	72	.1 70	0.6	64.5		65.4		72.8		73.0
Heavy Trucks:	75	.2 74	4.0	65.0		67.1		75.1		75.2
Vehicle Noise:	77	.8 76	3.5	69.9		70.5		78.2		78.3
Centerline Distan	ce to Noise Co	ontour (in feet)								
			7	0 dBA	65	dBA	6	0 dBA	55	dBA
		Lo	dn:	175		377		811		1,748
		CNE	EL:	180		387		833		1,795

FHWA-	RD-77-108 H	IGHWA	Y NOISI	E PREDIC	TION MO	DEL (9/12	2021)	
Scenario: 2040 NP Road Name: Live Oak Road Segment: w/o Rive	Avenue rgrade Road				Project N Job Nur	ame: Irwin nber: 1541	dale Gateway 0	y SP
SITE SPECIFIC	INPUT DAT	TA			NO	ISE MOD	EL INPUTS	8
Highway Data				Site Con	ditions (H	lard = 10,	Soft = 15)	
Average Daily Traffic (Adt)	39,630 ve	hicles				Auto	s: 15	
Peak Hour Percentage	9.19%			Me	dium Truc	ks (2 Axles	;): 15	
Peak Hour Volume	3,642 veh	icles		He	avy Truck	s (3+ Axles	s): 15	
Vehicle Speed	40 mp	h		Vehicle I	Mix			
Near/Far Lane Distance	80 fee	t		Veh	icleType	Day	Evening	Night Daily
Site Data					Au	tos: 72.4	% 9.2%	18.4% 85.65%
Barrier Height	: 0.0 fe	et		Me	edium True	cks: 77.7	% 4.8%	17.5% 9.12%
Barrier Type (0-Wall, 1-Berm)	0.0			ŀ	Heavy True	cks: 84.3	% 2.7%	13.0% 5.23%
Centerline Dist. to Barrier	50.0 fe	et		Noise Sc	ource Elev	ations (in	feet)	
Centerline Dist. to Observer	50.0 fe	et			Autos:	0.000	,	
Barrier Distance to Observer	0.0 fe	et		Mediur	m Trucks:	2.297		
Observer Height (Above Pad)	5.0 fe	ət		Heav	vy Trucks:	8.004	Grade Adj	ustment: 0.0
Pad Elevation	0.0 fe	et		Long Fa	uivelent D	liotonoo (i	e feet)	
Road Elevation	0.0 te	et		Lane Equ	Autoo	20 414	Tieel)	
Road Grade	0.0%			Modiu	Mulos.	30.414		
Right View	-90.0 de	grees		Heav	v Trucks	30.122		
- agint them	. 50.0 de	grees			,	00.100		
FHWA Noise Model Calculation	ons							
VehicleType REMEL	Traffic Flo	DW D	istance	Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos: 66.	51 C	5.61	3.	14	-1.20	-4.6	5 0.0	00 0.000
Medium Trucks: 11.	12 -0	0.11	3	20	-1.20	-4.8	/ U.U 2 0.0	00 0.000
Theavy Trucks. 02.	-0		5.	19	=1.20	-3.4	5 0.0	0.000
Unmitigated Noise Levels (wi	thout Topo	and barr	ier atte	nuation)	1 N	- 64	1.1.	01/5/
Venicie I ype Leg Peak H	our Leq	Day 70.0	Leq	er a	Leq Ni	gnt er r	Lan	CNEL
Medium Trucks:	72.1	70.2		66.0		66.0	74.9	74.4
Heavy Trucks:	75.0	75.3		66.3		69.4	74.3	74.4
Vehicle Noise:	79.2	77.8		71.3		71.9	70.4	70.3
Centerline Distance to Noise	Contour (in	foot)						
Contentine Distance to Noise	contour (III		70	dBA	65 dE	BA	60 dBA	55 dBA
		Ldn.		216		465	1,001	2,157
		CNEL		222		477	1,029	2,216

	FHWA-KD	-//-100 HIGHW	ATNU	ISE P	REDIC		DEL (S	112/20	J21)		
Scenario	2040 WP					Project N	lame: I	winda	ale Gatewa	y SP	
Road Name	: Live Oak Av	enue				Job Nu	mber: 1	5410			
Road Segmen	t: w/o Rivergra	ade Road									
SITE S	PECIFIC IN	PUT DATA				NC	DISE N	ODE		S	
Highway Data				Si	te Cond	litions (H	lard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	40,073 vehicles						Autos:	15		
Peak Hour F	Percentage:	9.19%			Med	lium Truc	:ks (2 A	xles):	15		
Peak Ho	our Volume:	3,683 vehicles			Hea	avy Truck	s (3+ A	xles):	15		
Veh	icle Speed:	40 mph		Ve	hicle N	lix					
Near/Far Lan	e Distance:	80 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	72.4%	9.2%	18.4%	85.52
Barı	rier Height:	0.0 feet			Me	dium Tru	cks:	77.7%	4.8%	17.5%	9.119
Barrier Type (0-Wa	all, 1-Berm):	0.0			Н	leavy Tru	cks:	84.3%	2.7%	13.0%	5.379
Centerline Dis	t. to Barrier:	50.0 feet		No	oise So	urce Elev	vations	(in fe	et)		
Centerline Dist. to	o Observer:	50.0 feet				Autos:	0.0	00			
Barrier Distance to	o Observer:	0.0 feet			Mediun	n Trucks:	2.2	97			
Observer Height (A	bove Pad):	5.0 feet			Heav	Trucks:	8.0	04	Grade Ad	justment	0.0
Pa	d Elevation:	0.0 feet		1.0	no Fau	in coloret l	Viotona	o (in i	fact)		
Roa	d Elevation:	0.0 feet		La	ne Equ	Autoo	nstanc 20	e (III I	eel)		
ĸ	loft View	0.0%			Modium	Autos.	30.4	14			
	Dight View:	-90.0 degrees			Heav	Trucks:	30.	50			
	rught view.	50.0 degrees			moury	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	00.	00			
FHWA Noise Mode	Calculations										
VehicleType	REMEL	Traffic Flow	Distan	се	Finite I	Road	Fresn	e/	Barrier Att	en Ber	m Atten
Autos:	66.51	3.66		3.14		-1.20		4.65	0.0	000	0.00
Medium Trucks:	//./2	-6.07		3.20		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-8.37		3.19		-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and ba	rrier a	ttenua	ation)					T	
VehicleType	eq Peak Hou	r Leq Day	Le	q Eve	ning	Leq N	ight		Ldn	CI	NEL
Autos:	72.	1 70	.3		67.3		65.6		72.9	9	73.
Medium Trucks:	73.	6 72	.1		66.0		66.9		74.3	3	74.
Heavy Trucks:	76.	6 /5	.5		56.5		58.5		76.0	5	76.
venicle Noise:	79.	3 //	.9		/1.4		72.0		79.6	Ď.	79.
Centerline Distance	e to Noise Co	ntour (in feet)		70 05		6E -"	24		O dBA		dBA
		1.		10 dE	210	65 di	3A 470	6	1 017	55	0BA
			u. 		219		412		1,017		2,194
					/ / m						

Monday, June 26, 2023

FHWA-I	RD-77-108	HIGHW	AY NOIS	ie P	REDIC		IODEL	(9/12/2	2021)		
Scenario: E Road Name: Live Oak Road Segment: w/o Stew	Avenue art Avenue	e				Project Job N	Name: lumber:	Irwind 15410	ale Gatewa	ay SP	
SITE SPECIFIC	INPUT D	ATA				N	OISE	MODE	EL INPUT	s	
Highway Data		-		Sit	te Con	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	18,385 9.19% 1,690 v	vehicles , ,ehicles			Me He	dium Tr avy Tru	ucks (2 cks (3+	Autos Axles) Axles)	: 15 : 15 : 15		
Vehicle Speed:	45 r	nph		1/0	hiele	Mise					
Near/Far Lane Distance:	80 f	eet		ve	Veh	icleType	`	Dav	Evenina	Niaht	Daily
Site Data							Autos:	72.49	6 9.2%	18.4	% 85.65%
Barrier Height	0.0	foot		1	M	edium T	rucks:	77.79	6 4.8%	17.5	% 9.12%
Barrier Type (0-Wall, 1-Berm):	0.0	1001			1	Heavy T	rucks:	84.3%	6 2.7%	13.0	% 5.23%
Centerline Dist. to Barrier:	50.0	feet		No	oise So	ource E	levatior	ns (in f	eet)		
Centerline Dist. to Observer:	50.0	feet		-		Auto	s' 0	000	,		-
Barrier Distance to Observer:	0.0	feet			Mediu	m Truck	s: 2	297			
Observer Height (Above Pad):	5.0	feet			Heav	w Truck	s: 8	004	Grade Ad	diustmei	nt: 0.0
Pad Elevation:	0.0	feet			mour	y maon	0. 0			.,	
Road Elevation:	0.0	feet		La	ne Eq	uivalen	t Distar	nce (in	feet)		
Road Grade:	0.0%					Auto	s: 30	.414			
Left View:	-90.0	degrees			Mediu	m Truck	s: 30	1.122			
Right View:	90.0	degrees			Heav	ry Truck	's: 30	.150			
FHWA Noise Model Calculation	ons			-							
VehicleType REMEL	Traffic	Flow	Distance	•	Finite	Road	Fres	nel	Barrier At	ten B	erm Atten
Autos: 68.4	6	-0.23	3	.14		-1.20		-4.65	0.	.000	0.00
Medium Trucks: 79.4	5	-9.96	3	.20		-1.20		-4.87	0.	.000	0.00
Heavy Trucks: 84.2	.5	-12.38	3	.19		-1.20		-5.43	0.	000	0.00
Unmitigated Noise Levels (with	thout Top	o and ba	arrier atte	enua	ation)						
VehicleType Leq Peak H	our Le	eq Day	Leq	Eve	ning	Leq	Night		Ldn	(CNEL
Autos:	70.2	68	8.3		65.4		63	.6	71.	.0	71.
Medium Trucks:	71.5	70	0.0		63.9		64	.7	72.	.2	72.
Heavy Trucks:	73.9	72	2.7		63.7		65	.8	73.	.8	73.
Vehicle Noise:	76.9	75	5.5		69.2		69	.6	77.	.2	77.
Centerline Distance to Noise	Contour (i	n feet)									
			70	υ αΒ	450	65	aBA	_	ou aBA	5	o dBA
			an: =		152		32	/ e	70	5	1,519
		CNE	=L:		156		33	D	72	C	1,561

	FHWA-RD	-77-108 HIGH	WAY NC	DISE	PREDIC	TION M	ODEL	(9/12/2	021)		
Scenario: Road Name: Road Segment:	EP Live Oak Av w/o Stewart	venue Avenue				Project Job Ni	Name: umber:	Irwinda 15410	ale Gatewa	ay SP	
SITE SE						N	OISE	MODE		· e	
Highway Data	ECIFIC IN	FUIDAIA		s	ite Con	ditions (Hard =	= 10. Sc	ft = 15	3	
Average Daily Tr	affic (Adt):	18,715 vehicle	s					Autos:	15		
Peak Hour Pe	ercentage:	9.19%	-		Med	dium Tru	icks (2	Axles):	15		
Peak Hou	ir Volume:	1,720 vehicles			Hea	avy Truc	ks (3+	Axles):	15		
Vehio	cle Speed:	45 mph		1	ohiclo I	liv					
Near/Far Lane	Distance:	80 feet			Vehi	cleTvpe		Dav	Evenina	Niaht	Daily
Site Data				-		,, A	utos:	72.4%	9.2%	18.49	6 85.46%
Barri	or Hoight	0.0 feet			Me	dium Tr	ucks:	77.7%	4.8%	17.5%	6 9.10%
Barrier Type (0-Wal	. 1-Berm):	0.0			H	leavy Tr	ucks:	84.3%	2.7%	13.0%	6 5.45%
Centerline Dist.	to Barrier:	50.0 feet			laiaa Ca	uree Ek	ovetier	na (in fi	a a fi		
Centerline Dist. to	Observer:	50.0 feet		~	ioise 30	Autor	evalior	000	el)		
Barrier Distance to	Observer:	0.0 feet			Modiur	Autos n Trucks	5. U	207			
Observer Height (At	ove Pad):	5.0 feet			Heav	v Trucks	· 2	004	Grade Ad	diustmer	t: 0.0
Pad	Elevation:	0.0 feet			nour.	,	. 0			,	
Road	Elevation:	0.0 feet		L	ane Equ	iivalent	Distar	ice (in	feet)		
Ro	ad Grade:	0.0%				Autos	s: 30	.414			
-	Left View:	-90.0 degree	s		Mediun	n Trucks	s: 30	.122			
F	light view:	90.0 degree	s		Heav	y Trucks	5: 30	.150			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite	Road	Fres	nel	Barrier At	ten Be	rm Atten
Autos:	68.46	-0.17		3.14	Ļ	-1.20		-4.65	0.	000	0.000
Medium Trucks:	79.45	-9.89		3.20)	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	84.25	-12.12		3.19)	-1.20		-5.43	0.	000	0.000
Unmitigated Noise L	evels (witho	out Topo and I	barrier a	ttenu	uation)						
VehicleType Le	eq Peak Hou	r Leq Day	Le	eq Ev	ening	Leq I	Night		Ldn	0	NEL
Autos:	70.	.2 (58.4		65.4		63.	.7	71.	0	71.3
Medium Trucks:	71.	.6	70.0		63.9		64.	.8	72.	2	72.4
Vehicle Noice:	74.	0	75.7		60.2		60	7	74.	1	74.2
venicie noise:	11.		5.7		09.3		09.	'	11.	.4	11.0
Centerline Distance	to Noise Co	ntour (in feet)						-		-	
				70 d	BA	65 0	3BA		ou dBA	5	o aBA
			Lan:		155		33	D A	72	2	1,555
		Cr			160		344	+	74.	2	1,598

	FHWA-RI	D-77-108 HIG	HWAY	NOISE	PREDIC	TION MO	DEL (9/12	/2021)		
Scenar Road Nam Road Segmei	io: 2028 NP ie: Live Oak A nt: w/o Stewar	venue t Avenue				Project N Job Nur	ame: Irwir nber: 154	dale Gatewa I0	y SP	
SITE	SPECIFIC IN	IPUT DATA				NO	ISE MOD	EL INPUT	5	
Highway Data				5	Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	29,342 vehic	les				Auto	s: 15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	ks (2 Axle	s): 15		
Peak H	our Volume:	2,697 vehicle	es		He	avy Truck	s (3+ Axle	s): 15		
Ve	hicle Speed:	45 mph		1	/ohiclo I	Mix				
Near/Far La	ne Distance:	80 feet		F	Vehi	icleTvpe	Dav	Evenina	Niaht	Daily
Site Data						Au	tos: 72.4	1% 9.2%	18.4%	85.65%
Bai	rrier Heiaht:	0.0 feet			Me	edium True	cks: 77.7	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 84.3	3% 2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	50.0 feet		,	Voise So	urce Flev	ations (in	feet)		
Centerline Dist.	to Observer:	50.0 feet		Ľ.	10.00 00	Autos:	0.000	1000		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	2 297			
Observer Height (Above Pad):	5.0 feet			Heav	v Trucks:	8.004	Grade Ad	iustment	0.0
Pa	ad Elevation:	0.0 feet		-		,				
Roa	ad Elevation:	0.0 feet		1	ane Equ	uivalent D	istance (i	n feet)		
	Road Grade:	0.0%				Autos:	30.414			
	Left View:	-90.0 degre	es		Mediur	m Trucks:	30.122			
	Right View:	90.0 degre	es		Heav	y Trucks:	30.150			
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Disi	tance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	68.46	1.80)	3.14	4	-1.20	-4.6	5 0.0	000	0.000
Medium Trucks:	79.45	-7.93	3	3.20	D	-1.20	-4.8	7 0.0	000	0.000
Heavy Trucks:	84.25	-10.3	5	3.19	9	-1.20	-5.4	3 0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	l barrie	er atten	uation)					
VehicleType	Leq Peak Hou	ur Leq Da	y	Leq E	/ening	Leq Ni	ight	Ldn	CI	VEL
Autos:	72	2.2	70.4		67.4		65.7	73.0)	73.3
Medium Trucks:	73	3.5	72.0		65.9		66.8	74.2	2	74.4
Heavy Trucks:	75	5.9	74.7		65.8		67.9	75.8	3	75.9
Vehicle Noise:	78	3.9	77.5		71.2		71.6	79.3	3	79.4
Centerline Distance	ce to Noise Co	ontour (in fee	t)							
			L	70 c	1BA	65 dE	BA	60 dBA	55	dBA
			Ldn:		207		447	963		2,074
		C	NEL:		213		459	989		2,132

	FHWA-RD	-//-108 HIGH	WAT	NUISE	PREDIC		DEL (9	/12/20	J21)		
Scenario	2028 WP					Project N	lame: Ir	winda	ile Gatewa	y SP	
Road Name	e: Live Oak Av	enue				Job Nu	nber: 1	5410			
Road Segmen	t: w/o Stewart	Avenue									
SITE S	PECIFIC IN	PUT DATA				NC	ISE M	ODE	L INPUT	5	
Highway Data				s	ite Con	ditions (H	lard = 1	10, So	ft = 15)		
Average Daily 1	raffic (Adt):	29,672 vehicle	s				A	utos:	15		
Peak Hour F	Percentage:	9.19%			Me	dium Truc	ks (2 A.	xles):	15		
Peak Ho	our Volume:	2,727 vehicles	6		Hei	avy Truck	s (3+ A.	xles):	15		
Veh	icle Speed:	45 mph		ν	ehicle N	lix					
Near/Far Lan	e Distance:	80 feet			Vehi	cleType	Ĺ	Day	Evening	Night	Daily
Site Data						AL	tos: 7	2.4%	9.2%	18.4%	85.53
Bar	rier Heiaht:	0.0 feet			Me	dium Tru	cks: 7	7.7%	4.8%	17.5%	9.119
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy Tru	cks: 8	34.3%	2.7%	13.0%	5.37
Centerline Dis	t. to Barrier:	50.0 feet			laise Sa	urce Elev	ations	(in fe	of)		
Centerline Dist. t	o Observer:	50.0 feet		-	0136 30	Autos:	0.0	00	eij		
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Trucks:	2.2	00 07			
Observer Height (A	Above Pad):	5.0 feet			Heav	v Trucks:	8.0	04	Grade Ad	iustment.	: 0.0
Pa	d Elevation:	0.0 feet			mour	,	0.0	•••			
Roa	d Elevation:	0.0 feet		L	ane Equ	ivalent L	istanc	e (in f	eet)		
F	load Grade:	0.0%				Autos:	30.4	14			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	30.1	22			
	Right View:	90.0 degree	s		Heav	y Trucks:	30.1	50			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:	68.46	1.84		3.14	ł	-1.20	-	4.65	0.0	000	0.00
Medium Trucks:	79.45	-7.89		3.20)	-1.20	-	4.87	0.0	000	0.00
Heavy Trucks:	84.25	-10.19		3.19)	-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barri	er attenı	uation)						
VehicleType	Leq Peak Houi	r Leq Day		Leq Ev	ening	Leq N	ight		Ldn	CI	VEL
Autos:	72.	2	70.4		67.4		65.7		73.0)	73
Medium Trucks:	73.	6	72.0		65.9		66.8		74.2	2	74
Heavy Trucks:	76.	1	74.9		65.9		68.0		76.0)	76
Vehicle Noise:	79.	0	77.6		71.3		71.7		79.4	ļ	79
Centerline Distance	e to Noise Co	ntour (in feet)									10.4
			L	70 d	BA	65 dl	BA	6	0 dBA	55	dBA
			Ldn:		210		453		977		2,10
		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	100		~~~~		466		1 004		2 16

Monday, June 26, 2023

FHWA	-RD-77	'-108 HIGHW	AY NOIS	E PREDI	CTION M	ODEL (S	9/12/20	021)		
Scenario: 2040 NF Road Name: Live Oal Road Segment: w/o Stev	k Aveni vart Av	ue enue			Project Job N	Name: I umber: 1	rwinda 15410	ale Gatewa	y SP	
SITE SPECIFIC	INPU	T DATA			N	OISE N	IODE	L INPUT	s	
Highway Data				Site Cor	nditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt Peak Hour Percentage Peak Hour Volume): 42, e: 9. e: 3,9	489 vehicles 19% 05 vehicles		M	edium Tru eavy Truc) Jcks (2 A cks (3+ A	Autos: Axles): Axles):	15 15 15		
Vehicle Speed	1:	45 mph		Mahiata						
Near/Far Lane Distance	e:	80 feet		Venicie	IVIIX nicleType		Dav	Evenina	Night	Daily
Site Data						Autos:	72.4%	9.2%	18.4%	85.65%
Parrier Heigh	¢.	0.0 foot		N	ledium Ti	ucks:	77.7%	4.8%	17.5%	9.129
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Ti	ucks:	84.3%	2.7%	13.0%	5.23%
Centerline Dist. to Barrie	r: 5	50.0 feet		Noise S	ource El	evations	s (in fe	et)		
Centerline Dist. to Observe	r: 5	50.0 feet			Auto	s: 0.0	000	.,		
Barrier Distance to Observe	r:	0.0 feet		Mediu	m Truck	5 2.2	297			
Observer Height (Above Pad):	5.0 feet		Hea	vy Truck	s' 80	104	Grade Ad	iustment	0.0
Pad Elevation	1.	0.0 feet			,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. 0.0				
Road Elevation	n:	0.0 feet		Lane Eq	uivalent	Distanc	e (in t	feet)		
Road Grade	e: 0	.0%			Autos	s: 30.4	414			
Left View	v: -9	0.0 degrees		Mediu	m Truck	s: 30.1	122			
Right View	v: 9	0.0 degrees		Hea	vy Truck:	s: 30.1	150			
FHWA Noise Model Calculati	ions									
VehicleType REMEL	Tra	affic Flow	Distance	Finite	Road	Fresn	el	Barrier Att	en Bei	m Atten
Autos: 68	.46	3.41	3.	14	-1.20		-4.65	0.0	000	0.00
Medium Trucks: 79	.45	-6.32	3.	20	-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 84	.25	-8.74	3.	19	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Levels (w	ithout	Topo and ba	arrier atte	nuation)						
VehicleType Leq Peak I	Hour	Leq Day	Leq	Evening	Leq	Night		Ldn	С	NEL
Autos:	73.8	72	2.0	69.0)	67.3		74.6	3	74.
Medium Trucks:	75.1	73	3.6	67.5	5	68.4		75.8	3	76.
Heavy Trucks:	77.5	76	6.3	67.4	Ļ	69.5	i i	77.4	1	77.
Vehicle Noise:	80.5	79	9.1	72.8	3	73.2		80.9	9	81.
Centerline Distance to Noise	Conto	our (in feet)								
			70) dBA	65	dBA	6	i0 dBA	55	dBA
		Lo	in:	265		572		1,232		2,655
		CNE	L:	273		588		1,266		2,729

	FHWA-RD-	77-108 HIGHV	VAY NO	SE P	REDIC	TION M	ODEL (9/12/2	021)		
Scenario: 20 Road Name: Li Road Segment: w	040 WP ve Oak Ave /o Stewart /	enue Avenue				Project Job N	Name: I umber:	rwinda 15410	ale Gatewa	y SP	
SITE SPE	CIFIC INF	PUT DATA				N	OISE N	IODE	L INPUTS	5	
Highway Data				Sit	te Con	ditions ((Hard =	10, Sc	oft = 15)		
Average Daily Traffi	ic (Adt): 4	2,819 vehicles	6				,	Autos:	15		
Peak Hour Perc	entage:	9.19%			Med	dium Tru	icks (2 A	(xles):	15		
Peak Hour \	/olume: 3	3,935 vehicles			Hea	avy Truc	:ks (3+ A	(xles):	15		
Vehicle	Speed:	45 mph		Va	hiclo I	<i>liv</i>					
Near/Far Lane Di	stance:	80 feet		ve	Vehi	cleType		Dav	Evening	Niaht	Daily
Site Data					V Crim	A	utos:	72.4%	9.2%	18.4%	85.57%
Barrior	Hoight:	0.0 foot			Ме	edium Tr	ucks:	77.7%	4.8%	17.5%	9.11%
Barrier Type (0-Wall 1	-Berm)	0.0 1001			H	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.32%
Centerline Dist. to	Barrier:	50.0 feet						. (in \$	- 41		
Centerline Dist. to Ob	server:	50.0 feet		NC	oise so	urce El	evations		eet)		
Barrier Distance to Ol	oserver:	0.0 feet				Autos	. 0.0	000			
Observer Height (Abov	re Pad):	5.0 feet			Healun	n Trucks	s. 2	297	Grade Adi	iustmont	0.0
Pad El	evation:	0.0 feet			neav	y TTUCKS	s. 0.1	JU4	Graue Auj	usuneni	0.0
Road Ele	evation:	0.0 feet		La	ne Equ	iivalent	Distand	e (in :	feet)		
Road	Grade:	0.0%				Autos	: 30.	414			
Le	ft View:	-90.0 degrees	6		Mediun	n Trucks	: 30.	122			
Rigl	ht View:	90.0 degrees	6		Heav	y Trucks	30.	150			
FHWA Noise Model Ca	lculations										
VehicleType R	EMEL	Traffic Flow	Distand	e	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	3.43		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	79.45	-6.29		3.20		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-8.63		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Noise Lev	els (witho	ut Topo and b	arrier at	tenua	ation)						
VehicleType Leq	Peak Hour	Leq Day	Le	q Eve	ning	Leq I	Night		Ldn	CI	VEL
Autos:	73.8	3 7	2.0		69.0		67.3		74.6	3	74.9
Medium Trucks:	75.2	2 7	3.6		67.5		68.4		75.8	3	76.0
Heavy Trucks:	77.6	6 7	6.5		67.5		69.6	i	77.5	5	77.7
Vehicle Noise:	80.6	6 7	9.2		72.9		73.3		80.9)	81.1
Centerline Distance to	Noise Cor	ntour (in feet)									
				70 dB	BA	65 0	dΒA	6	60 dBA	55	dBA
		L	dn:		268		578		1,245		2,682
		CN	EL:		276		594		1,279		2,757

	FHWA-RI	D-77-108 HIGH	IWAY NO	DISE PI	REDIC	TION MO	DEL (9	/12/2	021)		
Scenar Road Nam Road Segmei	io: E le: Live Oak A nt: w/o Baldwii	venue nd Park Blvd.				Project N Job Nur	ame: li nber: 1	rwinda 5410	ale Gatewa	y SP	
SITE	SPECIFIC IN	IPUT DATA				NO	ISE M	ODE	L INPUT	5	
Highway Data				Sit	e Con	ditions (H	lard = :	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	16,969 vehicl	es				A	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	ks (2 A	xles):	15		
Peak H	our Volume:	1,559 vehicle	s		He	avy Truck	s (3+ A	xles):	15		
Ve	hicle Speed:	45 mph		Ve	hicle I	Mix					
Near/Far La	ne Distance:	80 feet			Veh	icleType	1	Day	Evening	Night	Daily
Site Data						Au	tos:	72.4%	9.2%	18.4%	85.65%
Bai	rrier Heiaht:	0.0 feet			M	edium Tru	cks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			1	Heavy Tru	cks: I	84.3%	2.7%	13.0%	5.23%
Centerline Dis	st. to Barrier:	50.0 feet		No	ise So	ource Elev	ations	in fe	et)		
Centerline Dist.	to Observer:	50.0 feet				Autos:	0.0	000	,		-
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks:	2.2	97			
Observer Height (Above Pad):	5.0 feet			Heav	y Trucks:	8.0	004	Grade Adj	iustment	0.0
Pa	ad Elevation:	0.0 feet		1.0		·		- 6	(4)		
Roa	ad Elevation:	0.0 feet		La	ne Eq	uivalent L	nstanc	e (in i	eet)		
	Road Grade:	0.0%			Madiu	Autos:	30.4	114			
	Left View:	-90.0 degre	es		Mealu	m Trucks:	30.1	122			
	Right view.	90.0 degre	es		neav	y mucks.	30.1	150			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	el	Barrier Atte	en Ber	m Atten
Autos:	68.46	-0.58		3.14		-1.20		-4.65	0.0	000	0.000
Medium Trucks:	79.45	-10.31		3.20		-1.20	-	-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-12.73		3.19		-1.20		-5.43	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenua	tion)						
VehicleType	Leq Peak Hou	ur Leq Day	/ Le	eq Evel	ning	Leq Ni	ight		Ldn	C	NEL
Autos:	69	9.8	68.0		65.0		63.3		70.6	6	70.9
Medium Trucks:	71	.1	69.6		63.5		64.4		71.8	3	72.0
Heavy Trucks:	73	3.5	72.4		63.4		65.5		73.4		73.6
Vehicle Noise:	76	6.5	75.1		68.8		69.3		76.9)	77.1
Centerline Distance	e to Noise C	ontour (in feet)	_							
				70 dB,	A	65 dE	BA	6	i0 dBA	55	dBA
			Ldn:		144		310		668		1,440
		С	NEL:		148		319		687		1,480

	FHWA-RD	-77-108 HIGH	WAY NO	ISE P	REDIC [.]	TION MO	DEL (9/12	2/2021)		
Scenari	o: EP					Project N	<i>ame:</i> Irwi	ndale Gatewa	ay SP	
Road Nam	e: Live Oak Av	enue				Job Nu	nber: 154	10	,	
Road Segmer	nt: w/o Baldwin	d Park Blvd.								
SITE S	SPECIFIC IN	PUT DATA				NC	ISE MO	DEL INPUT	S	
Highway Data				Si	te Cond	ditions (H	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	17,233 vehicle	s				Aut	os: 15		
Peak Hour	Percentage:	9.19%			Med	dium Truc	ks (2 Axle	s): 15		
Peak H	our Volume:	1,584 vehicles			Hea	avy Truck	s (3+ Axle	s): 15		
Vel	hicle Speed:	45 mph		Ve	hicle N	lix				
Near/Far Lar	ne Distance:	80 feet			Vehic	cleType	Da	/ Evening	Night	Daily
Site Data						Au	tos: 72.	4% 9.2%	18.4%	85.45%
Bar	rier Height:	0.0 feet			Ме	dium Tru	cks: 77.	7% 4.8%	17.5%	9.11%
Barrier Type (0-W	all. 1-Berm):	0.0			н	leavy Tru	cks: 84.	3% 2.7%	13.0%	5.44%
Centerline Dis	t. to Barrier:	50.0 feet			vien C-		ations ((faat)		
Centerline Dist. I	to Observer:	50.0 feet		NC	nse SO	urce Elev		i leelj		
Barrier Distance t	to Observer:	0.0 feet				Autos:	0.000			
Observer Height ()	Above Pad):	5.0 feet			Meaiun	n Trucks:	2.297	Grade Ac	liuctmont	
Pa	d Elevation:	0.0 feet			Heav	y Trucks:	8.004	Grade Au	jusiment	0.0
Roa	d Elevation:	0.0 feet		La	ne Equ	ivalent D)istance (in feet)		
F	Road Grade:	0.0%				Autos:	30.414			
	Left View:	-90.0 degree	s		Mediun	n Trucks:	30.122			
	Right View:	90.0 degree	s		Heavy	y Trucks:	30.150			
FHWA Noise Mode	Calculations	;								
VehicleType	REMEL	Traffic Flow	Distan	се	Finite I	Road	Fresnel	Barrier At	ten Ber	m Atten
Autos:	68.46	-0.52		3.14		-1.20	-4.0	65 0.	000	0.000
Medium Trucks:	79.45	-10.25		3.20		-1.20	-4.6	B7 0.	000	0.000
Heavy Trucks:	84.25	-12.48		3.19		-1.20	-5.4	43 0.	000	0.000
Unmitigated Noise	Levels (witho	out Topo and I	barrier a	ttenua	ation)					
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Eve	ning	Leq N	ight	Ldn	CI	NEL
Autos:	69	.9 (58.0		65.1		63.3	70.	7	71.0
Medium Trucks:	71.	.2 (59.7		63.6		64.5	71.	9	72.0
Heavy Trucks:	73.	.8	72.6		63.6		65.7	73.	7	73.8
Vehicle Noise:	76.	.7	75.3		68.9		69.4	77.	0	77.2
Contorlino Diotono	e to Noise Co	ntour (in feet)		70 dB		65 45	24	60 dBA	55	dDA
Centernine Distanc								DU UBA	1 33	UDM
Centenine Distanc			dai	70 00	147	00 01	217	601	>	1 470
Centernite Distanc			Ldn:	70 00	147	05 02	317	683	3	1,472

Monday, June 26, 2023

Scenario: 2028 NP Road Name: Live Oak Road Segment: w/o Baldo SITE SPECIFIC	Avenue vind Par NPUT 27,50	k Blvd.				Project Job Ni	Name: umber:	Irwinda 15410	ale Gate	vay S	Р	
SITE SPECIFIC	27,50	DATA										
	27,50					N	OISE	MODE	L INPU	TS		
Highway Data	27,50				Site Con	ditions ('Hard =	: 10, So	oft = 15)			
Average Daily Traffic (Adt):		7 vehicle	5					Autos:	15			
Peak Hour Percentage:	9.19	9%			Me	dium Tru	icks (2	Axles):	15			
Peak Hour Volume:	2,528	3 vehicles			He	avy Truc	ks (3+	Axles):	15			
Vehicle Speed:	45	5 mph		ŀ	Vehicle	Mix						
Near/Far Lane Distance:	80) feet		ŀ	Venicie	icleType		Dav	Evenin	7 N	aht	Dailv
Site Data				-		A	utos:	72.4%	9.29	6 1	8.4%	85.65%
Barrior Hoight	0	0 foot			М	edium Tr	ucks:	77.7%	4.89	6 1	7.5%	9.12%
Barrier Type (0-Wall 1-Berm)	0	0				Heavy Tr	ucks:	84.3%	2.79	6 1	3.0%	5.23%
Centerline Dist. to Barrier	50	0 feet		+								
Centerline Dist. to Observer.	50	.0 feet		H	Noise So	burce Ele	evation	is (in fe	eet)			
Barrier Distance to Observer.	0.	0 feet				Autos	:: U	.000				
Observer Height (Above Pad).	5.	.0 feet			Wealu	m Trucks	i: 2	.297	Grade	diuc	mont	0.0
Pad Elevation	0.	.0 feet			nea	y mucks	i. O	.004	Grade	lujusi	ment.	0.0
Road Elevation:	0.	.0 feet			Lane Eq	uivalent	Distan	ce (in	feet)			
Road Grade:	0.0	%				Autos	: 30	.414				
Left View:	-90.	.0 degree	5		Mediu	m Trucks	:: 30	.122				
Right View:	90.	0 degree	5		Heav	ry Trucks	:: 30	.150				
FHWA Noise Model Calculation	ns											
VehicleType REMEL	Traff	ic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier /	Atten	Ben	n Atten
Autos: 68.4	6	1.52		3.1	4	-1.20		-4.65		0.000		0.00
Medium Trucks: 79.4	5	-8.21		3.2	20	-1.20		-4.87		0.000		0.00
Heavy Trucks: 84.2	5	-10.63		3.1	9	-1.20		-5.43		0.000		0.00
Unmitigated Noise Levels (wi	hout To	opo and k	arrier	atter	nuation)							
VehicleType Leq Peak H	our	Leq Day	L	Leq E	vening	Leq I	Vight		Ldn		CI	IEL
Autos:	1.9	7	0.1		67.1		65.	4	7	2.7		73.
Medium Trucks:	3.2	7	1.7		65.6		66.	5	7	3.9		74.
Heavy Trucks:	'5.6	7	4.5		65.5		67.	6	7	5.5		75.
Vehicle Noise:	8.6	7	7.2		70.9		71.	4	7	9.0		79.
Centerline Distance to Noise	Contou	r (in feet)	-	70	dD A	65.			0 484	_	55	d D A
		,	de	70	100	00 0			DU UBA	22	22	1 007
					204		420	י א	9	22 19		1,987
		Ch	<u> </u>		204		44(,	9	+0		2,042

	FHWA-RI	D-77-108 HIGH	NAY NOI	SE PREDIO	CTION MC	DDEL (9/1:	2/2021)		
Scenar Road Nan Road Segme	io: 2028 WP ne: Live Oak A nt: w/o Baldwii	venue nd Park Blvd.			Project I Job Nu	Vame: Irwi Imber: 154	ndale Gatewa 10	ay SP	
SITE	SPECIFIC IN	IPUT DATA			N	OISE MO	DEL INPUT	S	
Highway Data				Site Cor	nditions (I	Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt):	27,771 vehicle	s			Aut	os: 15		
Peak Hour	Percentage:	9.19%		Me	edium Tru	cks (2 Axle	s): 15		
Peak H	lour Volume:	2,552 vehicles		He	eavy Truck	ks (3+ Axle	s): 15		
Ve	hicle Speed:	45 mph		Vohiclo	Mix				
Near/Far La	ne Distance:	80 feet		Vehicle	nicleType	Da	v Evenina	Night	Daily
Site Data					A	utos: 72	4% 9.2%	18.4%	85.52%
Ba	rrier Height	0.0 feet		M	ledium Tru	ucks: 77.	7% 4.8%	17.5%	9.12%
Dd Barrier Type (0-M	/all_1_Berm)	0.0 1001			Heavy Tru	ucks: 84.	3% 2.7%	13.0%	5.36%
Centerline Di	st to Barrier	50.0 feet							
Centerline Dist.	to Observer:	50.0 feet		Noise S	ource Ele	vations (i	n feet)		
Barrier Distance	to Observer:	0.0 feet		A da alla	Autos.	. 0.000			
Observer Height	(Above Pad):	5.0 feet		Mediu	ITT TTUCKS.	. 2.297	Grade Ac	liuctmont	
P	ad Elevation:	0.0 feet		nea	vy mucks.	. 0.004	Grade Au	ijusiment.	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in feet)		
	Road Grade:	0.0%			Autos.	: 30.414			
	Left View:	-90.0 degree	s	Mediu	m Trucks.	30.122			
	Right View:	90.0 degree	s	Hea	vy Trucks.	30.150	1		
FHWA Noise Mod	el Calculation	s		1					
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier At	ten Ber	m Atten
Autos:	68.46	1.55	:	3.14	-1.20	-4.	65 O.	000	0.000
Medium Trucks:	79.45	-8.17	:	3.20	-1.20	-4.	87 0.	000	0.000
Heavy Trucks:	84.25	-10.48	:	3.19	-1.20	-5.	43 0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and l	parrier at	enuation)					
VehicleType	Leq Peak Hou	ur Leq Day	Lec	Evening	Leq N	light	Ldn	CI	VEL
Autos:	71	1.9 7	70.1	67.2	2	65.4	72.	8	73.1
Medium Trucks:	73	3.3 7	71.8	65.7	, 	66.5	74.	0	74.1
Heavy Trucks:	75	5.8 7	4.6	65.6	3	67.7	75.	7	75.8
Vehicle Noise:	78	3.7 7	7.3	71.0)	71.4	79.	1	79.3
Centerline Distan	ce to Noise Co	ontour (in feet)		O dBA	65 d	D A	60 dBA	55	dBA
		,	dn	201	05 0	434	00 000	1 33	2 014
		CN	IFI ·	201		446	061	1	2,014
		Ch		207		440	50		2,070

	FHWA-R	D-77-108	HIGHWA	AY NOIS	E PREI	DICTION MC	DEL (9/	12/2021	I)		
Scenario Road Name Road Segmen	o: 2040 NP e: Live Oak A nt: w/o Baldwi	wenue nd Park B	lvd.			Project N Job Nu	lame: Irv mber: 15	vindale 5410	Gateway	/ SP	
SITE S	SPECIFIC II	NPUT DA	ATA			NC	DISE MO	ODEL I	NPUTS	6	
Highway Data					Site C	conditions (H	Hard = 1	0, Soft	= 15)		
Average Daily 1	Traffic (Adt):	40,153 v	ehicles				Au	utos:	15		
Peak Hour I	Percentage:	9.19%				Medium Truc	cks (2 Ax	(les):	15		
Peak Ho	our Volume:	3,690 ve	hicles			Heavy Truck	(3+ Ax	(les):	15		
Vet	nicle Speed:	45 m	ph		Vehic	le Mix					
Near/Far Lar	ne Distance:	80 fe	et		Venne	ehicleType	D	ay E	vening	Night	Daily
Site Data						AL	itos: 7	2.4%	9.2%	18.4%	85.65%
Bar	rier Heiaht:	0.0 f	eet			Medium Tru	icks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy Tru	icks: 8	4.3%	2.7%	13.0%	5.23%
Centerline Dis	t. to Barrier:	50.0 f	eet		Noise	Source Ele	vations	(in feet)		
Centerline Dist. t	o Observer:	50.0 f	eet			Autos:	0.00	00			
Barrier Distance t	o Observer:	0.0 f	eet		Me	dium Trucks:	2.29	97			
Observer Height (/	Above Pad):	5.0 f	eet		н	eavy Trucks:	8.00)4 Gr	rade Adj	ustment	0.0
Pa	d Elevation:	0.0 t	eet		Lano	Equivalent I	Dietanco	(in foo	<i>f</i>)		
Roa	a Elevation:	0.0 1	eet		Lane	Autor	30.41	14	9		
	Loft View	0.0%			Ma	dium Trucks:	20.4				
	Right View:	-90.0 0	legrees		H	eavv Trucks:	30.12	50			
		00.0 0	logioco								
FHWA Noise Mode	I Calculation	IS									
VehicleType	REMEL	Traffic F	low l	Distance	Fir	ite Road	Fresne	l Ba	rrier Atte	en Ber	m Atten
Autos:	68.46		3.16	3.	.14	-1.20	-4	4.65	0.0	00	0.000
Meaium Trucks:	79.45		-6.57	3.	20	-1.20	-4	4.87	0.0	00	0.000
Heavy Trucks:	84.20)	-8.99	3.	19	-1.20	-:	5.43	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo	and bai	rrier atte	nuatio	n)					
VehicleType	Leq Peak Ho	ur Le	q Day	Leq	Evening	g Leq N	light	Lo	dn	CI	VEL
Autos:	73	3.6	71.	7	6	8.8	67.0		74.4		74.7
Medium Trucks:	/4	4.9	73.	4	6	7.3	68.1		75.6		/5./
Vehicle Noise	8	1.3	76.	0	7	2.6	73.0		80.6		80.8
			10.	5		2.0	10.0		00.0		00.0
Centerline Distanc	e to Noise C	ontour (ir	i reet)	7/	dBA	65 di	RA	60 /	HRA	55	dBA
			Ldi	1: 10	2	56	551	551	1.187		2.556
			CNEL		2	63	566		1,220		2,628

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION MC	DEL (9/	12/20)21)		
Scenari	o: 2040 WP					Project N	lame: In	winda	le Gatewa	y SP	
Road Nam	e: Live Oak Av	enue				Job Nu	mber: 1	5410			
Road Segmer	nt: w/o Baldwin	d Park Blvd.									
SITE	SPECIFIC IN	PUT DATA				NC	DISE M	ODE		s	
Highway Data				s	ite Con	ditions (H	lard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	40,417 vehicle	s				Α	utos:	15		
Peak Hour	Percentage:	9.19%			Med	dium Truc	:ks (2 A)	(les):	15		
Peak H	our Volume:	3,714 vehicles	;		Hea	avy Truck	s (3+ A)	des):	15		
Ve	hicle Speed:	45 mph		v	ehicle N	Nix					
Near/Far Lai	ne Distance:	80 feet		-	Vehi	cleType	Ľ)ay	Evening	Night	Daily
Site Data						AL	itos: 7	2.4%	9.2%	18.4%	85.56
Bar	rier Height	0.0 feet			Me	edium Tru	cks: 7	7.7%	4.8%	17.5%	9.129
Barrier Type (0-W	all. 1-Berm):	0.0			H	leavy Tru	cks: 8	4.3%	2.7%	13.0%	5.32%
Centerline Dis	t. to Barrier:	50.0 feet						(in \$-	- 41		
Centerline Dist.	to Observer:	50.0 feet		N	ioise so	urce Ele	ations	(In re	et)		
Barrier Distance	to Observer:	0.0 feet			1 4 m all 1 m	Autos:	0.00	JU 7			
Observer Height (Above Pad):	5.0 feet			Mediun	n Trucks:	2.2	97	Grade Ad	iuctmont	
Pa	d Elevation:	0.0 feet			Heav	y Trucks:	8.00	J4	Graue Au	usuneni	0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	ivalent L	Distance	e (in f	eet)		
F	Road Grade:	0.0%				Autos:	30.4	14			
	Left View:	-90.0 degree	s		Mediun	n Trucks:	30.1	22			
	Right View:	90.0 degree	s		Heav	y Trucks:	30.1	50			
FHWA Noise Mode	l Calculations	;									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	1	Barrier Att	en Ber	m Atten
Autos:	68.46	3.18		3.14		-1.20		4.65	0.0	000	0.00
Medium Trucks:	79.45	-6.54		3.20)	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	84.25	-8.88		3.19)	-1.20	-	5.43	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and I	barrie	r attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day		Leq Ev	ening	Leq N	ight		Ldn	CI	VEL
Autos:	73.	.6	71.8		68.8		67.1		74.4	1	74.
Medium Trucks:	74.	.9	73.4		67.3		68.2		75.6	6	75.
Heavy Trucks:	77.	4	76.2		67.2		69.3		77.3	3	77.
Vehicle Noise:	80.	.3	78.9		72.6		73.1		80.7	7	80.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 4	DA I	65 4	54	6	0 dBA	FF	dRA
			l dn'	70 0	258	05 U	556	0	1 109	55	2 5 91
		~	JEI ·		200		571		1,190		2,000
		01	¥ 💶 🗠 .		200		0/1		1,201		2,004

Monday, June 26, 2023

Scenario: E Road Name: Arrow Highway Road Segment: wio Live Oak Avenue Project Name: Invindale Gateway SP Job Number: 15410 Site SPECIFC INPUT DATA Highway Data NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Autos: 15 Average Daily Traffic (Adt): 34,298 vehicles Peak Hour Percentage: 9.19% Medium Trucks (2 Aules): 15 Peak Hour Percentage: 9.19% Medium Trucks (3+ Axles): 15 Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Vehicle Mix Ste Data Barrier Height: 0.0 feet Modeum Trucks: 77.7% 4.8% 17.5% 9.12% Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Noise Source Elevations (in feet) Noise Garde Adjustment: 0.0 Deserver Height (Above Pad): 5.0 feet Medium Trucks: 32.388 Medium Trucks: 32.388 Right View: 90.0 degrees Right View: 90.0 degrees Medium Trucks: 32.114 Berrier Atten Berr Atten Autos: Traffic Flow Distance Finite Road Fresnel Barrier Atten Berr Atten Barrier Trucks: 84.36 2.73 -1.20 -4.67 0.000 0.000 Centerline Dist. to Barrier: 40.0 feet Distence Finite Road Fresn		FHWA-RD	-77-108 HIGH	VAY NO	DISE	PREDIC		ODEL (9/12/20	021)		
SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adi): 34.298 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3.152 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Vehicle Speed: 45 mph Barrier Type (Owall, 1-Berm): 0.0 feet Barrier Type (Owall, 1-Berm): 0.0 feet Centerline Dist. to Barrier: 40.0 feet Barrier Type (Owall, 1-Berm): 0.0 feet Barrier Type (Owall, 1-Berm): 0.0 feet Road Elevation: 0.0 feet Autos: 32.388 Medium Trucks:	Scenario Road Name Road Segment	e: E Arrow Highv t: w/o Live Oal	vay k Avenue				Project Job N	Name: umber:	Irwinda 15410	ale Gatewa	ay SP	
Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 34,298 vehicles Autos: 15 Autos: 15 Peak Hour Percentage: 9.19% Medium Trucks (2 Autes): 15 Vehicle Speed: 45 mph Medium Trucks (2 Autes): 15 Vehicle Speed: 45 mph Medium Trucks (2 Autes): 15 Vehicle Speed: 45 mph Medium Trucks (2 Autes): 15 Wehicle Speed: 45 mph Vehicle Mix Vehicle Mix Vehicle Mix Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.12% Barrier Joist noc Brier: 40.0 feet Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 84.3% 2.7% 13.0% 5.23% Observer: 0.0 feet Autos: 0.000 Barrier Height (Above Pad): 5.0 feet Autos: 32.141 Read Grade: 0.0% Autos: 32.14 Read Grade: 0.0% Autos: 32.141 Read Grade: 0.0% Autos: 32.141 Read Grade: 0.0%	SITE S	PECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	S	
Average Daily Traffic (Adt): 34,298 vehicles Autos: 15 Peak Hour Volume: 31,52 vehicles Medium Trucks (2 Axles): 15 Peak Hour Volume: 31,52 vehicles Medium Trucks (2 Axles): 15 Vehicle Speed: 45 mph Medium Trucks (2 Axles): 15 Vehicle Speed: 45 mph Vehicle Type Day Evening Night Dail Site Data Autos: 77,5% 4.8% 67,5% 9.12% Barrier Height: 0.0 feet Medium Trucks: 77,7% 4.8% 17,5% 9.12% Barrier Distance to Observer: 0.0 feet Motise Source Elevations (in feet) Noise Source Adjustment: 0.0 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.378 12.0 4.80% 17.5% 9.12% Road Grade: 0.0% Left View: 90.0 degrees Medium Trucks: 2.308 Medium Trucks: 2.314 Road Grade: 0.0% Distance Finite Road Fresnel Barrier Atten Berm Atten <t< th=""><th>Highway Data</th><th></th><th></th><th></th><th></th><th>Site Con</th><th>ditions</th><th>(Hard =</th><th>10, Sc</th><th>oft = 15)</th><th></th><th></th></t<>	Highway Data					Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Peak Hour Precentage: 9.19% Peak Hour Volume: Medium Trucks (2 Axles): 15 Vehicle Speed: 45 mph Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Vehicle Speed: 45 mph Site Data Autos: 72.4% 9.2% 18.4% 85.6% Barrier Type (OWalt , 1-Berm): 0.0 feet Autos: 77.7% 4.8% 17.5% 9.12% Barrier Type (OWalt , 1-Berm): 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.12% Barrier Type (OWalt , 1-Berm): 0.0 feet Autos: 0.000 6.23% Centerline Dist. to Barrier: 40.0 feet Autos: 0.000 Medium Trucks: 2.97 Observer Height (Above Pad): 5.0 feet Autos: 3.2388 Medium Trucks: 2.297 Road Grade: 0.0% Autos: 32.144 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Right View: 90.0 degrees Heavy Trucks: 3.120 -4.67 0.000 0.000 Medium Trucks:	Average Daily T	raffic (Adt):	34,298 vehicles	6					Autos:	15		
Peak Hour Volume: 3,152 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 45 mph Vehicle Mix Vehicle Mix Vehicle Mix Site Data Rear/Far Lane Distance: 48 feet Vehicle Mix Dary Evening Night Daily Site Data Autos: 72.4% 9.2% 18.4% 85.65% Barrier Height: 0.0 feet Autos: 77.7% 4.8% 17.5% 9.12% Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.12% Centerline Dist: Dserver: 40.0 feet Autos: 0.00 5.0 Barrier Distance: 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 Rad Grade: 0.0 feet Medium Trucks: 32.388 Medium Trucks: 32.141 Heavy Trucks: 9.000 0.000 Medium Trucks: 73.4 7.25 7.78 1.20 <td>Peak Hour F</td> <td>Percentage:</td> <td>9.19%</td> <td></td> <td></td> <td>Me</td> <td>dium Tru</td> <td>ucks (2 A</td> <td>Axles):</td> <td>15</td> <td></td> <td></td>	Peak Hour F	Percentage:	9.19%			Me	dium Tru	ucks (2 A	Axles):	15		
Vehicle Speed: 45 mph Alear/Far Lane Distance: Vehicle Mix Vehicle Mix Daily Evening Night Daily Site Data Attos: 72.4% 9.2% 18.4% 85.65% Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.12% Barrier Type (0-Wall, 1-Berm): 0.0 Noise Source Elevations (in feet) 13.0% 523% Centerline Dist. to Desriver: 0.0 feet Autos: 0.000 Medium Trucks: 2.97 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Medium Trucks: 2.937 Pad Elevation: 0.0 feet Autos: 32.388 - - Road Grade: 0.0% Autos: 32.388 - - VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Medium Trucks: 72.45 -7.25 2.78 -1.20 -4.59 0.000 0.000 Heavy Trucks: 84.25 -9.67	Peak Ho	our Volume:	3,152 vehicles			He	avy Truc	cks (3+ A	Axles):	15		
Near/Far Lane Distance: 48 feet VehicleType Day Evening Night Daily Site Data VehicleType Day Evening Night Daily Site Data VehicleType Day Evening Night Daily Site Data Autos: 72.4% 9.2% 18.4% 85.65% Barrier Type (DWall, 1-Berm): 0.0 Medium Trucks: 77.7% 4.8% 17.5% 9.12% Centerline Dist. to Barrier: 40.0 feet Autos: 0.000 6.23% Deserver Height (Above Pad): 5.0 feet Autos: 0.004 Medium Trucks: 2.97 Observer: 0.0 feet Autos: 32.388 Medium Trucks: 0.004 Road Grade: 0.0% Autos: 32.144 Heavy Trucks: 32.14 FHWA Noise Mode Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 58.46 2.48 2.73 -1.20	Veh	icle Speed:	45 mph		-	Vohiclo	liv					
Site Data Log / Log	Near/Far Lan	e Distance:	48 feet		H	Venicie i Vehi	cleTvne		Dav	Evenina	Niaht	Daily
Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5% 9.12% Barrier Type (0-Wall, 1-Berm): 0.0 0.0 feavy Trucks: 84.3% 2.7% 13.0% 5.23% Centerline Dist. to Dserver: 40.0 feet Moise Source Elevations (in feet) Noise Source Elevations (in feet) Moise Source Elevation: 0.0 feet Moise Source Elevation: 0.0 feet Mutos: 2.28% Medium Trucks: 2.2114 Heavy Trucks: 8.004 Grade Adjustment: 0.0 PHWA Noise Model Calculations 0.0 feet Autos: 32.184 Heavy Trucks: 32.114 FHWA Noise Model Calculations Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.67 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.67 0.000 0.000 Medium Trucks: 73.3 73.3 66.2 67.0 74.5 74.4 Heavy Trucks: 84.25	Site Data				+	10/1	o.o., jpo A	Autos:	72.4%	9.2%	18.4	% 85.65%
Barrier Type (0-Weil, 1-Berm): 0.0 Heavy Trucks: 8.4.3% 2.7% 13.0% 5.23% Centerline Dist. to Diserver: 40.0 feet Noise Source Elevations (in feet) Autos: 0.000 Barrier Type (0-Weil, 1-Berm): 0.0 feet Moise Source Elevations (in feet) Autos: 0.000 Barrier Dist. to Diserver: 0.0 feet Moise Source Elevations (in feet) Autos: 0.000 Barrier Dist. to Observer: 0.0 feet Autos: 0.000 Medium Trucks: 8.04 Grade Adjustment: 0.0 Road Grade: 0.0% Lane Equivalent Distance (in feet) Autos: 0.000 Autos: 0.000 0.000 Weilum Trucks: 79.45 -7.25 2.78 -1.20 -4.57 0.000 0.000 Medium Trucks: 73.4 7.25 -7.6 67.7 65.9 7.3 7.3 Medium Trucks: 73.8 72.3 66.2 67.7 65.9 7.3 7.4 Heavy Trucks: 73.2 71.5 71.9 79.5 7.4	Barr	ior Hoight:	0.0 feet			Me	edium Ti	ucks:	77.7%	4.8%	17.5	% 9.12%
Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees Right View: 90.0 degrees VehicleType REMEL Traffic Flow VehicleType REMEL Traffic Flow VehicleType REMEL Traffic Flow VehicleType Leq Peak Hour Leq Naght Leq Virucks: 82.1 Medium Trucks: 72.5 7.78 -1.20 Heavy Trucks: 84.25 -9.67 2.78 -1.20 -4.67 Medium Trucks: 73.3 73.3 73.3 Medium Trucks: 73.3 Vehicle Noise EagreVening Vehicle Noise:	Barrier Type (0-Wa	all. 1-Berm):	0.0			F	leavy Ti	ucks:	84.3%	2.7%	13.0	% 5.23%
Centerline Dist. to Observer: 40.0 feet Autos: 0.00 Barrier Distance to Observer: 0.0 feet Autos: 0.00 Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Autos: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Medium Trucks: 32.141 Heavy Trucks: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.67 0.000 0.000 Medium Trucks: 73.3 73.3 66.2 67.0 74.5 74.4 Autos: 72.5 71.6 66.9 73.3 73.3 Medium Trucks: 73.8 72.3	Centerline Dist	t to Barrier:	40.0 feet			Noise So	urco Fl	ovation	s (in fa	of)		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Land Version: 0.0 feet Land Version: 0.0 feet Road Elevation: 0.0 feet Land Version: 0.0 feet Land Version: 0.0 feet Weinie Trucks: 2.2386 Medium Trucks: 32.386 Medium Trucks: 32.114 FHWA Noise Model Calculations Medium Trucks: 32.114 Heavy Trucks: 32.114 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berr Atten Autos: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.76 -1.20 -4.67 0.000 0.000 Medium Trucks: 73.4 -7.25 2.78 -1.20 -4.67 0.000 0.000 Medium Trucks: 73.4 -7.25 2.76 -	Centerline Dist. to	o Observer:	40.0 feet		Ē	10/30 00	Auto	e 01	000			
Observer Height (Above Pad): 5.0 feet Indiana fiscal set of the	Barrier Distance to	o Observer:	0.0 feet			Mediur	n Truck	s. 0.	207			
Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Glevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0% Autos: 32.385 Right View: 90.0 degrees Medium Trucks: 32.114 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.69 0.000 0.000 Medium Trucks: 64.25 -9.67 2.78 -1.20 -4.69 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) Ueg Night Ldn CNEL VehicleType Izq Peak Hour Leq Day Leq Right Ldn CNEL Autos: 72.5 71.6 67.7 65.9 73.3	Observer Height (A	bove Pad):	5.0 feet			Heav	v Truck	s. 2	004	Grade Ad	liustme	nt: 0.0
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0 % Autos: 32.388 Left View: -90.0 degrees Medium Trucks: 32.114 FHWA Noise Model Calculations Heavy Trucks: 32.114 VehicleType REMEL Traffic Flow Distance Fresnel Barrier Atten Autos: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.67 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -5.56 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) Use -1.20 -5.56 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Use CNEL 73.3 73.3 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 79.2 77.8 71.5 71.9 79.5	Pad	d Elevation:	0.0 feet			mour	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. 0.			,	
Road Grade: 0.0% Autos: 32.388 Left View: -90.0 degrees Medium Trucks: 32.114 Right View: 90.0 degrees Medium Trucks: 32.114 FHWA Noise Model Calculations Finite Road Fresnel Barrier Atten Berm Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.57 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -5.56 0.000 0.000 Ummitigated Noise Levels (without Topo and barrier attenuation) Uenkingsted Noise CNEL Autos: 73.3 73.3 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 73.2 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contour (In feet)	Road	d Elevation:	0.0 feet		1	Lane Equ	ivalent	Distant	ce (in f	feet)		
Left View: -90.0 degrees Medium Trucks: 32.114 Right View: 90.0 degrees Heavy Trucks: 32.141 FHWA Noise Model Calculations WeincleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.87 0.000 0.000 Medium Trucks: 84.25 -9.67 2.78 -1.20 -5.56 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) VericleType Leq Peak Hour Leq Day Leq Sight Ldn CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.4 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 79.2 77.8 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contour (in feet) <td>R</td> <td>oad Grade:</td> <td>0.0%</td> <td></td> <td></td> <td></td> <td>Auto:</td> <td>s: 32.</td> <td>388</td> <td></td> <td></td> <td></td>	R	oad Grade:	0.0%				Auto:	s: 32.	388			
Right View: 90.0 degrees Heavy Trucks: 32.141 FHWA Noise Model Calculations Female Barrier Atten Berm Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.87 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Vehicle Pype Leq Peak Hour Leq Day Leq Revening Leq Night Ldn CNEL Vehicle Type [Autos: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 73.2 71.5 71.9 79.5 79.5 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contour (in feet) 170 <td></td> <td>Left View:</td> <td>-90.0 degrees</td> <td>6</td> <td></td> <td>Mediur</td> <td>n Truck</td> <td>s: 32.</td> <td>114</td> <td></td> <td></td> <td></td>		Left View:	-90.0 degrees	6		Mediur	n Truck	s: 32.	114			
FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrn Atten Autos: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.87 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -5.56 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) - - -5.56 0.000 0.000 VehicleType Leq Peak Hour Leq Day Leq Reving Leq Night Ldn CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.0 Medium Trucks: 73.8 72.3 66.2 67.0 74.4 - Heavy Trucks: 79.2 77.8 71.5 71.9 79.5 79.5 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5		Right View:	90.0 degree:	6		Heav	y Truck	s: 32.	141			
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 68.46 2.48 2.73 -1.20 -4.59 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.67 0.000 0.000 Heavy Trucks: 84.25 -9.67 2.78 -1.20 -5.56 0.000 0.000 Ummitgated Noise Levels (without Topo and barrier attenuation) -1.20 -5.56 0.000 0.000 Ummitgated Noise Levels (without Topo and barrier attenuation) Leq Naght Led Noise CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.4 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 76.2 75.0 66.0 68.1 76.1 76.2 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contou	FHWA Noise Model	Calculations										
Autos: 68.46 2.48 2.73 -1.20 -4.69 0.000 0.000 Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.67 0.000 0.000 Heavy Trucks: 64.25 -9.67 2.78 -1.20 -4.67 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.3 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 79.2 77.8 71.5 71.9 79.5 75.5 Centerline Distance to Noise Contour (in feet) 170 65.6 68.4 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,767	VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	el	Barrier At	ten B	erm Atten
Medium Trucks: 79.45 -7.25 2.78 -1.20 -4.87 0.000 0.000 Heavy Trucks: 84.25 -9.67 2.78 -1.20 -5.56 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) -1.20 -5.56 0.000 0.000 VehiceType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.3 Medium Trucks: 73.8 72.3 66.2 67.0 74.4 74.5 Heavy Trucks: 79.2 77.8 71.5 71.9 79.5 79.5 Vehicel Noise: 79.2 77.8 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contour (in feet) 170 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	Autos:	68.46	2.48		2.7	3	-1.20		-4.59	0.	000	0.000
Heavy Trucks: 84.25 -9.67 2.78 -1.20 -5.56 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Day Leq Revening Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.1 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 79.2 77.8 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	Medium Trucks:	79.45	-7.25		2.7	8	-1.20		-4.87	0.	000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.3 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 76.2 75.0 66.0 68.1 76.1 76.2 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 77.5 Centerline Distance to Noise Contour (In feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 80.2 1,772 CNEL: 178 383 824 1,776	Heavy Trucks:	84.25	-9.67		2.7	8	-1.20		-5.56	0.	000	0.00
VehicleType Leq Peak Hour Leq Day Leq Vening Leq Night Ldn CNEL Autos: 72.5 70.6 67.7 65.9 73.3 73.3 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 76.2 75.0 66.0 68.1 76.1 76.2 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contour (in feet) Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	Unmitigated Noise	Levels (witho	ut Topo and b	arrier a	tten	uation)						
Autos: 72.5 70.6 67.7 66.9 73.3 73.3 Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 76.2 75.0 66.0 68.1 76.1 76.2 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 79: Centerline Distance to Noise Contour (in feet) Lan: 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	VehicleType L	leq Peak Hou	r Leq Day	Le	eq E	vening	Leq	Night		Ldn		CNEL
Medium Trucks: 73.8 72.3 66.2 67.0 74.5 74.4 Heavy Trucks: 76.2 75.0 66.0 68.1 76.1 76.2 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 79.2 Centerline Distance to Noise Contour (In feet) Image: Contour (In feet) 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	Autos:	72.	5 7	0.6		67.7		65.9)	73.	3	73.0
Heavy Trucks: 76.2 75.0 66.0 68.1 76.1 76.5 Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 79:5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1.727 CNEL: 178 383 824 1.776	Medium Trucks:	73.	8 7	2.3		66.2		67.0)	74.	5	74.0
Vehicle Noise: 79.2 77.8 71.5 71.9 79.5 79.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	Heavy Trucks:	76.	2 7	5.0		66.0		68.1		76.	1	76.2
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	Vehicle Noise:	79.	2 7	7.8		71.5		71.9)	79.	5	79.
70 dBA 65 dBA 60 dBA 55 dBA Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776	Centerline Distance	e to Noise Co	ntour (in feet)									
Ldn: 173 372 802 1,727 CNEL: 178 383 824 1,776					70 0	dBA	65	dBA	6	i0 dBA	5	i5 dBA
CNEL: 178 383 824 1,776			L	dn:		173		372		802	2	1,727
			CN	EL:		178		383		824	1	1,776

Scenario:	EP					Project	Name:	Irwinda	ale Gatewa	y SP	
Road Name:	Arrow Highv	vay				Job N	lumber:	15410			
Road Segment:	w/o Live Oa	k Avenue									
SITE SF	PECIFIC IN	PUT DATA				M	IOISE	MODE	L INPUT	S	
Highway Data				4	Site Con	ditions	(Hard =	= 10, So	oft = 15)		
Average Daily Tr	affic (Adt):	34,601 vehicle	s					Autos:	15		
Peak Hour Pe	ercentage:	9.19%			Me	dium Tr	ucks (2	Axles):	15		
Peak Hou	ur Volume:	3,180 vehicles			Hei	avy Tru	cks (3+	Axles):	15		
Vehic	cle Speed:	45 mph		1	Vehicle N	lix					
Near/Far Lane	Distance:	48 feet		Ē	Vehi	cleType	9	Day	Evening	Night	Daily
Site Data							Autos:	72.4%	9.2%	18.4%	85.69%
Barri	er Heiaht:	0.0 feet			Me	edium T	rucks:	77.7%	4.8%	17.5%	9.07%
Barrier Type (0-Wal	l, 1-Berm):	0.0			F	leavy T	rucks:	84.3%	2.7%	13.0%	5.24%
Centerline Dist.	to Barrier:	40.0 feet		-	Noise So	urco E	lovatio	ne (in fi	oof)		
Centerline Dist. to	Observer:	40.0 feet		Ľ.	10/30 00	Auto	c' 0	000			
Barrier Distance to	Observer:	0.0 feet			Mediur	n Truck	a. u	207			
Observer Height (At	bove Pad):	5.0 feet			Heav	v Truck	5. <u>2</u>	004	Grade Ad	iustman	t- 0.0
Pad	Elevation:	0.0 feet			neav	y mack	3. 0	.004	0,000,10	uounon	
Road	Elevation:	0.0 feet		1	Lane Equ	iivalen	t Distar	ice (in	feet)		
Ro	ad Grade:	0.0%				Auto	s: 32	.388			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 32	.114			
F	Right View:	90.0 degree	s		Heav	y Truck	s: 32	.141			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	68.46	2.52		2.7	3	-1.20		-4.59	0.0	000	0.000
Medium Trucks:	79.45	-7.24		2.7	8	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-9.62		2.7	8	-1.20		-5.56	0.0	000	0.000
Unmitigated Noise L	evels (with	out Topo and I	barrier	r atten	uation)						
VehicleType Le	eq Peak Hou	r Leq Day		Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	72.	.5	70.7		67.7		66	0	73.3	3	73.6
Medium Trucks:	73.	.8	72.3		66.2		67	.1	74.5	5	74.6
Heavy Trucks:	76	2	75.0		66.1		68	2	76.1	1	76.3
Vehicle Noise:	79.	2	77.8		71.5		71	9	79.6	j.	79.7
Centerline Distance	to Noise Co	ntour (in feet)									
			∟	70 0	JBA	65	aBA		ou dBA	55	aBA
			_dn:		174		37	4	806		1,737
		CI	IEL:		179		38	D	829		1,785

	FHWA-R	D-77-108	HIGHW.	AY NOIS	E PRE	DICTION MC	ODEL (9	/12/20	121)		
Scenario Road Name Road Segmen	o: 2028 NP e: Arrow High nt: w/o Live O	iway ak Avenu	le			Project I Job Nu	Vame: Ii Imber: 1	winda 5410	le Gatewa	y SP	
SITE S	SPECIFIC II	NPUT D	ATA			N	DISE M	ODE		3	
Highway Data					Site	Conditions (I	Hard =	10, So	ft = 15)		
Average Daily 1	Traffic (Adt):	49,679	vehicles				A	lutos:	15		
Peak Hour I	Percentage:	9.19%				Medium True	cks (2 A	xles):	15		
Peak Ho	our Volume:	4,566 v	ehicles			Heavy Truck	ks (3+ A	xles):	15		
Vet	nicle Speed:	45 m	nph		Vohi	lo Mix					-
Near/Far Lar	ne Distance:	48 fe	eet		Venne	VehicleTvpe	1	Dav	Evenina	Night	Dailv
Site Data						A	utos:	72.4%	9.2%	18.4%	85.65%
Bar	rier Heiaht:	0.0	feet		1	Medium Tru	icks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy Tru	icks:	84.3%	2.7%	13.0%	5.23%
Centerline Dis	t. to Barrier:	40.0 1	feet		Nois	e Source Ele	vations	(in fe	et)		
Centerline Dist. t	o Observer:	40.0 1	feet			Autos	: 0.0	00	- 1		-
Barrier Distance t	o Observer:	0.0 1	feet		Me	dium Trucks	2.2	97			
Observer Height (/	Above Pad):	5.0 1	feet		F	leavy Trucks	: 8.0	04	Grade Adj	ustmen	t: 0.0
Pa	d Elevation:	0.0 1	teet		Lano	Equivalent	Distanc	o (in f	ooti		
Roa	a Elevation:	0.01	reet		Lane	Autos	· 22.2	00	eelj		-
	Loft View	0.0%			M	dium Trucks	. 02.0	14			
	Right View:	-90.0	degrees		F	leavy Trucks	32.1	4			
		00.0	409.000								
FHWA Noise Mode	l Calculation	IS									
VehicleType	REMEL	Traffic I	Flow	Distance	Fi	nite Road	Fresne	e/ I	Barrier Atte	en Be	rm Atten
Autos:	68.46		4.08	2	.73	-1.20	-	4.59	0.0	00	0.000
Meaium Trucks:	79.45		-5.64	2	.78	-1.20		4.87	0.0	00	0.000
Heavy Trucks:	84.25	•	-8.06	2	.78	-1.20		-5.56	0.0	00	0.000
Unmitigated Noise	Levels (with	out Top	o and ba	rrier atte	enuatio	on)					
VehicleType	Leq Peak Ho	ur Le	eq Day	Leq	Evenin	g Leq N	light		Ldn	C	NEL
Autos:	74	4.1	72	.2	6	9.3	67.5		74.9)	75.2
Medium Trucks:	75	5.4	73	.9	6	7.8	68.6		76.1		76.2
Heavy Trucks:	71	7.8	76	.6	6	7.6	69.7		77.7		77.8
venicie Noise:	80	J.8	79	.4		3.1	73.5		81.1		81.3
Centerline Distanc	e to Noise C	ontour (i	n feet)	7/		65-1	DA	~	0 484		
			Id	/(JUBA	00 0	DA 176	0	1 026	55	2 211
			CNE	n. T ·	4	27	4/0		1,020		2,211
			ONL	L .	4		450		1,000		2,213

	FHWA-RD-	77-108 HIGHW.	AY NO	ISE PI	REDICI	TON MOI	DEC (9/	T2/20	21)		
Scenario	2028 WP				1	Project Na	ame: In	vindal	e Gatewa	y SP	
Road Name	e: Arrow Highw	ay				Job Nun	nber: 15	5410			
Road Segment	t: w/o Live Oak	Avenue									
SITE S	PECIFIC IN	VUT DATA				NO	ISE M	ODEL	INPUT	5	
Highway Data				Sit	e Cond	itions (H	ard = 1	0, Soi	ft = 15)		
Average Daily T	raffic (Adt):	19,982 vehicles					A	utos:	15		
Peak Hour F	Percentage:	9.19%			Med	ium Truci	ks (2 Ax	les):	15		
Peak Ho	our Volume:	4,593 vehicles			Hea	vy Trucks	s (3+ Ax	les):	15		
Veh	icle Speed:	45 mph		Vel	hicle M	ix					
Near/Far Lan	e Distance:	48 feet			Vehic	leType	D	ay	Evening	Night	Daily
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.68%
Barr	ier Height:	0.0 feet			Mee	dium Truc	:ks: 7	7.7%	4.8%	17.5%	9.09%
Barrier Type (0-Wa	all, 1-Berm):	0.0			H	eavy Truc	:ks: 8	4.3%	2.7%	13.0%	5.24%
Centerline Dist	t. to Barrier:	40.0 feet		No	isa Sai	irce Elev	ations	(in fo	of)		
Centerline Dist. to	o Observer:	40.0 feet		110	130 001	Autos:	0.00	0			
Barrier Distance to	o Observer:	0.0 feet			Medium	Trucks:	2.20	17			
Observer Height (A	bove Pad):	5.0 feet			Heavy	Trucks:	8.00	14	Grade Ad	iustment.	: 0.0
Pad	d Elevation:	0.0 feet			moury	maono.	0.00				
Road	d Elevation:	0.0 feet		Lai	ne Equ	ivalent D	istance	(in fe	eet)		
R	oad Grade:	0.0%				Autos:	32.3	38			
	Left View:	-90.0 degrees			Medium	Trucks:	32.1	14			
	Right View:	90.0 degrees			Heavy	Trucks:	32.14	11			
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Distand	ce	Finite F	Road	Fresne	I E	Barrier Atte	en Ber	m Atten
Autos:	68.46	4.11		2.73		-1.20	-4	1.59	0.0	000	0.00
Medium Trucks:	79.45	-5.63		2.78		-1.20	-4	1.87	0.0	000	0.00
Heavy Trucks:	84.25	-8.03		2.78		-1.20	-:	5.56	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and ba	rrier at	tenua	tion)						
VehicleType I	Leq Peak Hour	Leq Day	Le	q Ever	ning	Leq Ni	ght		Ldn	CI	VEL
Autos:	74.	1 72	.3		69.3		67.6		74.9)	75.
Meaium Trucks:	75.4	4 73	.9		67.8		68.7		76.1		76.
Heavy Irucks:	77.8	3 76	.6		67.7		69.8		77.7	r	
venicle Noise:	80.8	5 79	.4		73.1		/3.5		81.2	<u> </u>	81.
Centerline Distance	e to Noise Cor	ntour (in feet)		70 40	<u> </u>	05.10		~			
				τυ αΒλ	4	65 dB	A 470	60	1 000	55	aBA 2.20
		La	n:		222		4/8		1,030		2,220
		(10/15					a		3 050		

Monday, June 26, 2023

	FHWA-RD	-77-108 HIGHV	AY NO	DISE	PREDIC	TION M	IODEL (9/12/2	021)			
Scenario: Road Name: Road Segment:	2040 NP Arrow Highw w/o Live Oał	ay Avenue				Project Job N	Name: lumber:	Irwinda 15410	ale Gatew	ay Si	2	
SITE SP	ECIFIC IN	PUT DATA				N	IOISE I	NODE	L INPUT	S		
Highway Data				1	Site Con	ditions	(Hard =	10, Sc	oft = 15)			
Average Daily Tra	affic (Adt):	58,137 vehicles						Autos:	15			
Peak Hour Pe	rcentage:	9.19%			Me	dium Tru	ucks (2)	Axles):	15			
Peak Hou	r Volume:	6,262 vehicles			He	avy Truc	cks (3+)	Axles):	15			
Vehic	le Speed:	45 mph		5	Vehicle	Mix						
Near/Far Lane	Distance:	48 feet		H	Venicie i Veh	icleTvpe		Dav	Evenina	Ni	aht	Dailv
Site Data							Autos:	72.4%	9.2%	11	3.4%	85.65%
Barrie	r Hoiaht	0.0 feet			M	edium Ti	rucks:	77.7%	4.8%	1	7.5%	9.12%
Barrier Type (0-Wall.	. 1-Berm):	0.0			1	Heavy Tr	rucks:	84.3%	2.7%	13	3.0%	5.23%
Centerline Dist.	to Barrier:	40.0 feet		-	Noico Se	urco El	ovation	e (in fr	nof)			
Centerline Dist. to	Observer:	40.0 feet		ť	10/36 30	Auto	evalion	000	eu)			
Barrier Distance to	Observer:	0.0 feet			Modiu	m Truck	s. 0.	207				
Observer Height (Ab	ove Pad):	5.0 feet			Heat	a Truck	a. 2.	201	Grade A	divet	ment [.]	0.0
Pad	Elevation:	0.0 feet			near	y mack.	3. 0.	004	0/000/1	ajaon		0.0
Road	Elevation:	0.0 feet		1	Lane Eq	uivalent	Distan	ce (in i	feet)			
Roa	ad Grade:	0.0%				Autos	s: 32.	388				
1	Left View:	-90.0 degrees			Mediu	m Truck	s: 32.	114				
R	ight View:	90.0 degrees			Heav	ry Truck	s: 32.	141				
FHWA Noise Model (Calculations											
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresr	nel	Barrier A	tten	Berr	n Atten
Autos:	68.46	5.46		2.7	3	-1.20		-4.59	0	.000		0.000
Medium Trucks:	79.45	-4.27		2.7	8	-1.20		-4.87	0	.000		0.000
Heavy Trucks:	84.25	-6.69		2.7	8	-1.20		-5.56	0	.000		0.000
Unmitigated Noise L	evels (witho	ut Topo and b	arrier a	atten	uation)							
VehicleType Le	q Peak Hour	Leq Day	L	eq Ei	vening	Leq	Night		Ldn		CN	IEL
Autos:	75.4	4 7	3.6		70.7		68.9	9	76	.2		76.6
Medium Trucks:	76.	B 7	5.2		69.1		70.0)	77	.4		77.0
Heavy Trucks:	79.	1 7	8.0		69.0		71.	1	79	.1		79.3
Vehicle Noise:	82.3	2 8	0.8		74.4		74.9	9	82	.5		82.
Centerline Distance	to Noise Col	ntour (in feet)										
				70 c	dBA	65	dBA	6	60 dBA		55 (dBA
		L	dn:		273		588		1,26	7	-	2,730
		CN	EL:		281		605		1,30	2		2,806

	FHWA-RL	0-77-108 HIGHV	VAY NOR	SE PREDIO	STION MOL	DEL (9/12/2	2021)		
Scenar Road Narr Road Segme	io: 2040 WP be: Arrow Highv nt: w/o Live Oa	way ak Avenue			Project Na Job Num	me: Irwind ber: 15410	ale Gatewa	y SP	
SITE	SPECIFIC IN				NO	SE MODE		s	
Highway Data	or con to his	TOT DATA		Site Cor	nditions (Ha	ard = 10, S	oft = 15)	<u> </u>	
Average Daily	Traffic (Adt):	68,440 vehicles	;		,	Autos	: 15		
Peak Hour	Percentage:	9.19%		Me	edium Truck	s (2 Axles)	: 15		
Peak H	lour Volume:	6,290 vehicles		He	eavy Trucks	(3+ Axles)	: 15		
Ve	hicle Speed:	45 mph		Vahiala	Mise				
Near/Far La	ne Distance:	48 feet		Venicle	iviix nicleTyne	Dav	Evenina	Night	Daily
Site Data					Auto	ns: 72.49	6 9.2%	18.4%	85.67%
Ba	wier Height	0.0 feet		M	ledium Truc	ks: 77.79	6 4.8%	17.5%	9.10%
Barrier Type (0-M	rrier Height: /all_1_Berm):	0.0 reet			Heavy Truc	ks: 84.39	6 2.7%	13.0%	5.23%
Centerline Di	st to Barrier:	40.0 feet							
Centerline Dist.	to Observer:	40.0 feet		Noise S	ource Eleva	ations (in 1	'eet)		
Barrier Distance	to Observer:	0.0 feet		1.4 m all.	Autos:	0.000			
Observer Height	Above Pad):	5.0 feet		Mediu	IM Trucks:	2.297	Grade Ad	iustmont	H 0 0
P	ad Elevation:	0.0 feet		пеа	vy mucks.	0.004	Graue Au	usunen	. 0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent Di	stance (in	feet)		
	Road Grade:	0.0%			Autos:	32.388			
	Left View:	-90.0 degrees	3	Mediu	m Trucks:	32.114			
	Right View:	90.0 degrees	3	Hea	vy Trucks:	32.141			
FHWA Noise Mod	el Calculations	s							
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Att	en Ber	rm Atten
Autos:	68.46	5.48	2	2.73	-1.20	-4.59	0.0	000	0.000
Medium Trucks:	79.45	-4.26	2	2.78	-1.20	-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-6.66	2	2.78	-1.20	-5.56	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier att	enuation)					
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq Nig	ht	Ldn	CI	NEL
Autos:	75	.5 /	3.6	70.7	, ,	68.9	76.3	5	76.6
Medium Trucks:	76	.8 /	5.Z	69.2	<u>-</u>	70.0	71.4	+	77.0
Vehicle Noise	82	2 8	0.0	74 5	5	71.1	821	5	82.7
		.2 0	0.0	74.0	,	74.5	02.0	,	02.7
Centerline Distant	ce to Noise Co	ontour (in feet)	7	0 dBA	65 dB/	4	60 dBA	55	dBA
		L	dn:	274	50 027	590	1,271		2.737
		CN	EL:	281		606	1,306	i	2,814

	FHWA-R	D-77-108 HIG	HWAY N	IOISE P	REDIC	CTION MO	DEL (9	/12/20	21)		
Scenario Road Name Road Segment	o: E e: Arrow High t: e/o Avenid	iway a Barbosa				Project N Job Nur	ame: Ir nber: 1	windal 5410	e Gatewa	y SP	
SITE S	PECIFIC IN	NPUT DATA				NO	ISE M	ODEL	INPUTS	3	
Highway Data				Si	te Con	nditions (H	lard = 1	10, Sol	ft = 15)		
Average Daily T	raffic (Adt):	15,351 vehic	les				A	utos:	15		
Peak Hour F	Percentage:	9.19%			Me	edium Truc	ks (2 A	xles):	15		
Peak Ho	our Volume:	1,411 vehicle	es		He	avy Truck	s (3+ A	xles):	15		
Veh	icle Speed:	45 mph		Ve	hicle	Mix					
Near/Far Lan	e Distance:	48 feet			Veh	icleType	L	Day	Evening	Night	Daily
Site Data						Au	tos: 7	72.4%	9.2%	18.4%	85.65%
Barı	rier Heiaht:	0.0 feet			М	edium Tru	cks: 7	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0			1	Heavy Tru	cks: 8	34.3%	2.7%	13.0%	5.23%
Centerline Dist	t. to Barrier:	40.0 feet		No	nise Sr	ource Elev	ations	(in fe	ef)		
Centerline Dist. to	o Observer:	40.0 feet				Autos:	0.0	00			
Barrier Distance to	o Observer:	0.0 feet			Mediu	m Trucks:	2.2	97			
Observer Height (A	Above Pad):	5.0 feet			Heav	vv Trucks:	8.0	04	Grade Adj	ustmen	t: 0.0
Pa	d Elevation:	0.0 feet		_							
Roa	d Elevation:	0.0 feet		La	ne Eq	uivalent D	listance	e (in fe	eet)		
R	oad Grade:	0.0%				Autos:	32.3	88			
	Left View:	-90.0 degre	es		Mediu	m Trucks:	32.1	14			
	Right View:	90.0 degre	es		Heav	vy Trucks:	32.1	41			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	el E	Barrier Atte	en Be	rm Atten
Autos:	68.46	-1.0	2	2.73		-1.20	-	4.59	0.0	00	0.000
Medium Trucks:	79.45	-10.7	1	2.78		-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	84.25	-13.1	3	2.78		-1.20	-	5.56	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	l barrier	attenua	ation)						
VehicleType I	Leq Peak Ho	ur Leq Da	iy i	Leq Eve	ening	Leq Ni	ight		Ldn	С	NEL
Autos:	69	9.0	67.1		64.2		62.4		69.8	1	70.1
Medium Trucks:	70	0.3	68.8		62.7		63.5		71.0)	71.1
Heavy Trucks:	72	2.7	71.5		62.5		64.6		72.6	i	72.7
Vehicle Noise:	75	5.7	74.3		68.0		68.4		76.0)	76.2
Centerline Distance	e to Noise C	ontour (in fee	t)			I.					
				70 dB	BA	65 dE	3A	60	0 dBA	55	i dBA
			Ldn:		101		218		469		1,011
		(NEL:		104		224		482		1,039

Scenario	p: EP					Project N	ame: In	vindal	e Gatewa	y SP	
Road Name	e: Arrow Highw	av				Job Nur	nber: 1	5410		,	
Road Segmen	t: e/o Avenida	Barbosa									
SITE S	SPECIFIC IN	PUT DATA				NO	ISE M	ODEL	INPUT	5	
Highway Data				S	ite Con	ditions (H	lard = 1	0, Soi	ft = 15)		
Average Daily	Traffic (Adt):	15,418 vehicle	s				A	utos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Truc	ks (2 A)	(les):	15		
Peak He	our Volume:	1,417 vehicles			Hea	avy Truck	s (3+ A)	(les):	15		
Vel	nicle Speed:	45 mph		L	ehicle N	Nix					
Near/Far Lar	e Distance:	48 feet		-	Vehi	cleType	Ľ	ay	Evening	Night	Daily
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.63
Bar	rier Heiaht:	0.0 feet			Me	edium Tru	cks: 7	7.7%	4.8%	17.5%	9.11
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy Tru	cks: 8	4.3%	2.7%	13.0%	5.26
Centerline Dis	t. to Barrier:	40.0 feet			loiso So	urco Elos	ations	(in fo	of		
Centerline Dist. t	o Observer:	40.0 feet		-	10/36 30	Autoo	0.00		ει)		
Barrier Distance t	o Observer:	0.0 feet			Mediur	Autos.	2.20	JU 70			
Observer Height (/	Above Pad):	5.0 feet			Heav	v Trucks:	2.2	14	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet			Tieav	y mucks.	0.00	/4	0,000,10	aounom	0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	ivalent D	istance	e (in fe	eet)		
F	Road Grade:	0.0%				Autos:	32.3	38			
	Left View:	-90.0 degree	s		Mediur	n Trucks:	32.1	14			
	Right View:	90.0 degree	s		Heav	y Trucks:	32.1	41			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	I E	Barrier Atte	en Ber	m Atter
Autos:	68.46	-1.00		2.73	3	-1.20		4.59	0.0	000	0.00
Medium Trucks:	79.45	-10.73		2.78	3	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	84.25	-13.11		2.78	3	-1.20	-	5.56	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and L	barrie	er atteni	uation)						
VehicleType	Leq Peak Hour	Leq Day		Leq Ev	ening	Leq Ni	ght		Ldn	CI	VEL
Autos:	69.	06	57.2		64.2		62.5		69.8	3	70
Meaium Trucks:	70.	36	58.8		62.7		63.6		71.0)	71
Heavy Trucks:	72.	/ 7	1.5		62.6		64.7		72.6	5	72
venicle Noise:	75.	/ 1	4.3		68.0		68.4		76.1		76
Centerline Distanc	e to Noise Col	ntour (in feet)	Т	70 4	RA	65 de	24	E!) dBA	55	dBA
		,	dn'	700	102	05 UE	219	00	 		1.01
		C1			104		225		471		1.04
		01			104		220		-04		1,04

Monday, June 26, 2023

Scenario: 2028 NP Project Name: Invindale Gateway SP Road Name: Arrow Highway Job Number: 15410 Road Segment: elo Avenida Barbosa SITE SPECIE[CINPUT DATA NOISE MODEL INPUTS	
SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS	
Highway Data Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Adt): 24,999 vehicles Autos: 15 Peak Hour Percentage: 9.19% Medium Trucks (2 Axles): 15 Peak Hour Volume: 2.297 vehicles Heavy Trucks (3 + Axles): 15	
Vehicle Speed: 45 mph	
Near/Far Lane Distance: 48 feet Vehicle Type Day Evening Night	Dailv
Site Data Autos: 72.4% 9.2% 18.4%	85.65%
Barrier Height: 0.0 feet Medium Trucks: 77.7% 4.8% 17.5%	9.12%
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 84.3% 2.7% 13.0%	5.23%
Centerline Dist. to Barrier: 40.0 feet	
Centerline Dist. to Observer: 40.0 feet	
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2 297	
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment:	0.0
Pad Elevation: 0.0 feet	0.0
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)	
Road Grade: 0.0% Autos: 32.388	
Left View: -90.0 degrees Medium Trucks: 32.114	
Right View: 90.0 degrees Heavy Trucks: 32.141	
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern	n Atten
Autos: 68.46 1.10 2.73 -1.20 -4.59 0.000	0.00
Medium Trucks: 79.45 -8.62 2.78 -1.20 -4.87 0.000	0.00
Heavy Trucks: 84.25 -11.04 2.78 -1.20 -5.56 0.000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)	
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CN	EL
Autos: 71.1 69.3 66.3 64.6 71.9	72.
Medium Trucks: 72.4 70.9 64.8 65.7 73.1	73.
Heavy Trucks: 74.8 73.6 64.7 66.7 74.7	74.
Vehicle Noise: 77.8 76.4 70.1 70.5 78.2	78.
Centerline Distance to Noise Contour (in feet)	
70 dBA 65 dBA 60 dBA 55 d	IBA
Ldn: 140 201 640	1,399
Lun. 140 301 849	

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9/12/2	021)			
Scenar Road Nam Road Segme	io: 2028 WP ie: Arrow High nt: e/o Avenida	way a Barbosa				Project Job N	Name: umber:	Irwinda 15410	ale Gatewa	ay SP		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE I	NODE	L INPUT	S		
Highway Data				5	Site Con	ditions	(Hard =	10, So	oft = 15)			
Average Daily Peak Hour Peak H	Traffic (Adt): Percentage: lour Volume:	25,066 vehicle 9.19% 2,304 vehicle	es s		Meo Hea	dium Tru avy Truc	ucks (2) cks (3+)	Autos: Axles): Axles):	15 15 15			
Near/Ear La	ne Distance:	45 mpn		١	/ehicle N	lix						
iveai/i ai La	ne Distance.	40 1661			Vehi	cleType		Day	Evening	Nigi	nt	Daily
Site Data						A	Autos:	72.4%	9.2%	18.	4%	85.64%
Ba Barrier Type (0-M	rrier Height:	0.0 feet			Me H	dium Ti leavy Ti	rucks: rucks:	77.7% 84.3%	5 4.8% 5 2.7%	17. 13.	5% 0%	9.11% 5.25%
Centerline Di	st to Barrier	40.0 feet		L.		· -						
Centerline Dist.	to Observer:	40.0 feet		,	voise So	urce El	evation	s (in fe	eet)			
Barrier Distance	to Observer:	0.0 feet				Auto	s: 0.	000				
Observer Height	(Above Pad):	5.0 feet			Mediun	n Truck	s: 2.	297				
P	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	ijustm	ent:	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalent	Distan	ce (in	feet)			
	Road Grade:	0.0%				Auto	s: 32.	388				
	Left View:	-90.0 degree	es		Mediun	n Truck	s: 32.	114				
	Right View:	90.0 degre	es		Heav	y Truck	s: 32	141				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresi	nel	Barrier At	ten	Bern	n Atten
Autos:	68.46	1.11		2.73	3	-1.20		-4.59	0.	000		0.000
Medium Trucks:	79.45	-8.62		2.78	В	-1.20		-4.87	0.	000		0.000
Heavy Trucks:	84.25	-11.01		2.78	В	-1.20		-5.56	0.	000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	r atten	uation)							
VehicleType	Leq Peak Hou	ur Leq Day	·	Leq Ev	/ening	Leq	Night		Ldn		CN	EL
Autos:	71	.1	69.3		66.3		64.	6	71.	9		72.2
Medium Trucks:	72	2.4	70.9		64.8		65.	7	73.	.1		73.3
Heavy Trucks:	74	.8	73.6		64.7		66.	В	74.	7		74.9
Vehicle Noise:	77	.8	76.4		70.1		70.	5	78.	2		78.4
Centerline Distant	ce to Noise Co	ontour (in feet)		_				_			
				70 c	iBA	65	dBA	(60 dBA		55 c	IBA
			Ldn:		140		302	2	65	1		1,403
		C	NEL:		144		311		669	9		1,442

	FHWA-RI	D-77-108 HIC	GHWAY	Y NOIS	E PI	REDIC	TION MO	DEL (9/12/2	021)		
Scenari Road Nam Road Segmer	io: 2040 NP e: Arrow High nt: e/o Avenida	way a Barbosa					Project N Job Nur	lame: mber:	Irwind 15410	ale Gatewa	iy SP	
SITE	SPECIFIC IN	IPUT DAT	4				NO	DISE I	NODE	LINPUT	s	
Highway Data					Sit	e Cono	ditions (H	lard =	10, S	oft = 15)		
Average Daily	Traffic (Adt):	36,576 vehi	icles						Autos.	15		
Peak Hour	Percentage:	9.19%				Med	dium Truc	:ks (2 /	Axles)	15		
Peak H	our Volume:	3,361 vehic	les			Hea	avy Truck	s (3+ /	Axles).	15		
Ve	hicle Speed:	45 mph			Ve	hicle N	lix					
Near/Far La	ne Distance:	48 feet				Vehi	cleType		Day	Evening	Nigh	Daily
Site Data							Au	tos:	72.49	6 9.2%	18.4	% 85.65%
Bai	rrier Heiaht:	0.0 feet			1	Me	dium Tru	cks:	77.79	6 4.8%	17.5	% 9.12%
Barrier Type (0-W	all, 1-Berm):	0.0				H	leavy Tru	cks:	84.3%	6 2.7%	13.0	% 5.23%
Centerline Dis	st. to Barrier:	40.0 feet			No	ise So	urce Elev	vation	s (in f	eet)		
Centerline Dist.	to Observer:	40.0 feet					Autos	0	000			
Barrier Distance	to Observer:	0.0 feet				Mediun	n Trucks:	2	297			
Observer Height (Above Pad):	5.0 feet				Heav	v Trucks:	8	004	Grade Ad	justme	nt: 0.0
Pa	ad Elevation:	0.0 feet					,					
Roa	ad Elevation:	0.0 feet			Lai	ne Equ	ivalent D	Distan	ce (in	feet)		
,	Road Grade:	0.0%					Autos:	32.	388			
	Left View:	-90.0 deg	rees			veaiun	n Trucks:	32.	114			
	Right View:	90.0 deg	rees			Heav	y Trucks:	32.	141			
FHWA Noise Mode	el Calculation	s			-							
VehicleType	REMEL	Traffic Flow	v D	istance		Finite I	Road	Fresr	nel	Barrier Att	en E	erm Atten
Autos:	68.46	2.7	75	2.	73		-1.20		-4.59	0.0	000	0.000
Medium Trucks:	79.45	-6.9	97	2.	78		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-9.3	39	2.	78		-1.20		-5.56	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo an	d barr	ier atte	nua	tion)						
VehicleType	Leq Peak Hou	ur Leq D	ay	Leq	Ever	ning	Leq Ni	ight		Ldn		CNEL
Autos:	72	2.7	70.9			68.0		66.2	2	73.	5	73.9
Medium Trucks:	74	l.1	72.5			66.4		67.3	3	74.	7	74.9
Heavy Trucks:	76	6.4	75.3			66.3		68.4	1	76.4	4	76.5
Vehicle Noise:	79	9.5	78.1			71.7		72.2	2	79.	8	80.0
Centerline Distance	ce to Noise Co	ontour (in fe	et)									
				70) dB/	4	65 dE	BA	1	60 dBA		55 dBA
			Ldn:			180		388		837		1,803
			CNEL:			185		399		860		1,853

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION MC	DEL (9/1	2/2021)		
Scenario	: 2040 WP					Project N	lame: Irw	indale Gatewa	ay SP	
Road Name	e: Arrow Highv	vay				Job Nu	mber: 154	110		
Road Segmen	t: e/o Avenida	Barbosa								
SITES	SPECIFIC IN	PUT DATA				NC	DISE MO	DEL INPUT	s	
Highway Data				5	Site Con	ditions (H	lard = 10	, Soft = 15)		
Average Daily	Traffic (Adt):	36,643 vehicle	s				Au	tos: 15		
Peak Hour I	Percentage:	9.19%			Me	dium Truc	ks (2 Axle	es): 15		
Peak Ho	our Volume:	3,368 vehicles	6		He	avy Truck	s (3+ Axle	es): 15		
Vel	nicle Speed:	45 mph		1	/ehicle I	Nix				
Near/Far Lar	e Distance:	48 feet			Vehi	cleType	Da	y Evening	Night	Daily
Site Data						AL	tos: 72	.4% 9.2%	18.4%	85.64%
Bar	rier Height:	0.0 feet			Me	edium Tru	cks: 77	.7% 4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 84	.3% 2.7%	13.0%	5.24%
Centerline Dis	t. to Barrier:	40.0 feet			Voise Se	urce Elev	vations (i	n foot)		
Centerline Dist. t	o Observer:	40.0 feet		-	10/30 00	Autor	0.000)		
Barrier Distance t	o Observer:	0.0 feet			Mediu	n Trucks:	2 207	7		
Observer Height (/	Above Pad):	5.0 feet			Heav	v Trucks:	8.00/	Grade Ad	liustment	0.0
Pa	d Elevation:	0.0 feet		_	71041	,	0.00			
Roa	d Elevation:	0.0 feet		L	ane Equ	uivalent E	Distance	(in feet)		
F	Road Grade:	0.0%				Autos:	32.38	3		
	Left View:	-90.0 degree	s		Mediur	n Trucks:	32.114	1		
	Right View:	90.0 degree	s		Heav	y Trucks:	32.14	1		
FHWA Noise Mode	I Calculations	:								
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier Att	ten Ber	m Atten
Autos:	68.46	2.76		2.73	3	-1.20	-4.	59 0.0	000	0.000
Medium Trucks:	79.45	-6.97		2.78	8	-1.20	-4.	87 0.0	000	0.000
Heavy Trucks:	84.25	-9.37		2.78	8	-1.20	-5.	56 0.0	000	0.000
Unmitigated Noise	Levels (witho	out Topo and	barrie	er atten	uation)					
VehicleType	Leq Peak Hou	r Leq Day		Leq Ev	/ening	Leq N	ight	Ldn	C	NEL
Autos:	72.	7	70.9		68.0		66.2	73.	6	73.
Medium Trucks:	74.	1	72.5		66.5		67.3	74.	7	74.
Heavy Trucks:	76.	5	75.3		66.3		68.4	76.4	4	76.
venicle Noise:	79.	5	/8.1		/1.8		72.2	79.	8	80.0
Centerline Distanc	e to Noise Co	ntour (in feet)		70 6	ID A	ee di	24	60 dBA	55	dBA
			l dn'	100	181	05 01	380	00 004	1 35	1 806
					101		509	030	,	1,000
		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			186		200	MK-1	,	1 85 /

Monday, June 26, 2023

	FHWA-RD-7	77-108 HIGHW	AY NOI	SE PI	REDIC	TION M	ODEL	(9/12/2)	021)		
Scenario: Road Name: Road Segment:	E Arrow Highwa e/o I-1605 NE	ay 3 On-Ramp				Project Job N	Name: umber:	Irwinda 15410	ale Gatewa	iy SP	
SITE SP	ECIFIC INP	UT DATA				N	OISE	MODE	L INPUT	s	
Highway Data				Sit	e Con	ditions	Hard =	: 10, Sc	oft = 15)		
Average Daily Tra Peak Hour Pe Peak Hour	ffic (Adt): 1 rcentage: Volume: 1	1,358 vehicles 9.19% ,044 vehicles			Me He	dium Tru avy Truc	icks (2 :ks (3+	Autos: Axles): Axles):	15 15 15		
Vehicl	e Speed:	45 mph		Ve	hicle I	Nix					
Near/Far Lane	Distance:	48 feet			Veh	icleTvpe		Dav	Evenina	Night	Dailv
Site Data					-	4	utos:	72.4%	9.2%	18.4%	85.65%
Barrie	r Heiaht:	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wall,	1-Berm):	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.23%
Centerline Dist. t	o Barrier:	40.0 feet		No	ico Sc	urco El	wation	c (in f	noti		
Centerline Dist. to (Observer:	40.0 feet		140	136 30		- O	000	eei)		
Barrier Distance to (Observer:	0.0 feet			Madiu	m Trucki	. 0	207			
Observer Height (Abo	ove Pad):	5.0 feet			Heav	n Trucks	. ∠ . g	004	Grade Ad	iustment	r 0.0
Pad E	Elevation:	0.0 feet			near	y mache	. U	.004	0/000/10	Juounom	0.0
Road B	Elevation:	0.0 feet		La	ne Equ	uivalent	Distan	ce (in i	feet)		
Roa	d Grade:	0.0%				Autos	: 32	.388			
L	.eft View:	-90.0 degrees			Mediui	n Trucks	: 32	.114			
Ri	ght View:	90.0 degrees			Heav	y Trucks	:: 32	.141			
FHWA Noise Model C	alculations										
VehicleType	REMEL 1	Traffic Flow	Distanc	е	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Atten
Autos:	68.46	-2.32	:	2.73		-1.20		-4.59	0.0	000	0.00
Medium Trucks:	79.45	-12.05	:	2.78		-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-14.47	2	2.78		-1.20		-5.56	0.0	000	0.00
Unmitigated Noise Le	evels (withou	it Topo and ba	arrier at	tenua	tion)						
VehicleType Le	q Peak Hour	Leq Day	Leo	ı Evel	ning	Leq	Vight		Ldn	С	NEL
Autos:	67.7	65	5.8		62.9		61.	1	68.	5	68.
Medium Trucks:	69.0	67	7.5		61.4		62.	2	69.	7	69.
Heavy Trucks:	71.4	70).2		61.2		63.	3	71.3	3	71.
Vehicle Noise:	74.4	73	8.0		66.7		67.	1	74.	7	74.
Centerline Distance t	o Noise Con	tour (in feet)									
			7	70 dB,	4	65 (1BA	6	60 dBA	55	i dBA
											0.07
		Lo	in:		83		178	3	384		021

	FHWA-RI	D-77-108 HIGH	WAY N	OISEI	PREDIC	TION MO	ODEL (9/12/2	021)			
Scenar Road Nan Road Segme	io: EP ne: Arrow High nt: e/o I-1605 I	way NB On-Ramp				Project I Job Ni	Name: Imber:	Irwind 15410	ale Gatew	/ay S	Р	
SITE	SPECIFIC IN	IPUT DATA				N	OISE N	IODE	L INPU	TS		
Highway Data				S	ite Con	ditions (Hard =	10, S	oft = 15)			
Average Daily Peak Hour Peak F Ve	Traffic (Adt): Percentage: Jour Volume: hicle Speed:	11,471 vehicle 9.19% 1,054 vehicles 45 mph	s	V	Med Hea /ehicle N	dium Tru avy Truc fix	cks (2) ks (3+)	Autos: Axles). Axles).	15 15 15			
Near/Far La	ine Distance:	48 feet			Vehi	cleType		Day	Evening	n Ni	ght	Daily
Site Data						A	utos:	72.4%	6 9.2%	6 1	8.4%	85.52%
Ba Barrier Type (0-W	rrier Height: /all, 1-Berm):	0.0 feet 0.0			Me H	edium Tri leavy Tri	ucks: ucks:	77.7% 84.3%	6 4.8% 6 2.7%	5 1 5 1	7.5% 3.0%	9.11% 5.37%
Centenine Di	st. to Barrier:	40.0 feet		N	loise So	urce Ele	vation	s (in f	eet)			
Barrier Distance Observer Height	to Observer: to Observer: (Above Pad): ad Elevation:	40.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediun Heav	Autos n Trucks y Trucks	: 0. : 2. : 8.	000 297 004	Grade A	djust	ment:	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in	feet)			
	Road Grade:	0.0%				Autos	: 32.	388				
	Left View: Right View:	-90.0 degree 90.0 degree	s		Mediun Heav	n Trucks y Trucks	: 32. : 32.	114 141				
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresh	iel	Barrier A	tten	Berr	n Atten
Autos:	68.46	-2.29		2.73		-1.20		-4.59	C	0.000		0.000
Medium Trucks:	79.45	-12.01		2.78		-1.20		-4.87	C	0.000		0.000
Heavy Trucks:	84.25	-14.31		2.78		-1.20		-5.56	C	0.000		0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	uation)							
VehicleType	Leq Peak Hou	Ir Leq Day	L	.eq Ev	ening	Leq I	light		Ldn		CN	EL
Autos:	67	.7 (35.9		62.9		61.2	2	68	3.5		68.8
Medium Trucks:	69	0.0	57.5		61.4		62.3	3	69	9.7		69.9
Heavy Trucks:	71	.5	70.4		61.4		63.5	5	71	.4		71.6
Vehicle Noise:	74	.5	73.1		66.7		67.2	2	74	1.8		75.0
Centerline Distan	ce to Noise Co	ontour (in feet)										
				70 d	BA	65 a	IBA	1	60 dBA		55 0	1BA
			.dn:		84		181		38	39		839
		CI	IEL:		86		186		40	00		862

	FHWA-R	D-77-108 HIC	GHWAY	' NOISE	PREDI	CTION MO	DEL (9/ [.]	12/2021)		
Scenario Road Name Road Segmen	o: 2028 NP e: Arrow High tt: e/o I-1605	way NB On-Ramj	D			Project N Job Nur	ame: Irv nber: 15	vindale 6410	Gatewa	y SP	
SITE S	SPECIFIC IN	NPUT DAT	A			NO	ISE MO	DDEL I	NPUTS	3	
Highway Data					Site Cor	nditions (H	lard = 10	0, Soft =	= 15)		
Average Daily 1	Traffic (Adt):	20,881 vehi	icles				AL	utos:	15		
Peak Hour I	Percentage:	9.19%			Me	edium Truc	ks (2 Ax	les):	15		
Peak Ho	our Volume:	1,919 vehic	les		He	eavy Trucks	s (3+ Ax	les):	15		
Vet	nicle Speed:	45 mph		-	Vehicle	Mix					
Near/Far Lar	ne Distance:	48 feet			Veh	nicleTvpe	D	av Ev	/enina	Niaht	Dailv
Site Data						Au	tos: 7	2.4%	9.2%	18.4%	85.65%
Bar	rier Heiaht:	0.0 feet			M	ledium Truc	cks: 7	7.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy Truc	cks: 84	4.3%	2.7%	13.0%	5.23%
Centerline Dis	t. to Barrier:	40.0 feet		-	Noise S	ource Elev	ations	(in feet)			
Centerline Dist. t	o Observer:	40.0 feet		-		Autos:	0.00	0			
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Trucks:	2.29	17			
Observer Height (A	Above Pad):	5.0 feet			Hea	vv Trucks:	8.00	4 Gr	ade Adj	ustment	: 0.0
Pa	d Elevation:	0.0 feet		F					-		
Roa	d Elevation:	0.0 feet		-	Lane Eq	uivalent D	ustance	(In fee	()		
6	Road Grade:	0.0%				Autos:	32.38	38			
	Left View:	-90.0 deg	rees		Meaiu	m Trucks:	32.11	14			
	Right View:	90.0 deg	rees		неа	vy Trucks:	32.14	11			
FHWA Noise Mode	I Calculation	S									
VehicleType	REMEL	Traffic Flow	v Di	stance	Finite	Road	Fresnel	Ba	rrier Atte	en Ber	m Atten
Autos:	68.46	0.3	32	2.7	'3	-1.20	-4	1.59	0.0	00	0.000
Medium Trucks:	79.45	-9.4	41	2.7	'8	-1.20	-4	1.87	0.0	00	0.000
Heavy Trucks:	84.25	-11.8	33	2.7	'8	-1.20	-5	5.56	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo an	d barri	ier atter	nuation)						
VehicleType	Leq Peak Ho	ur Leq D	ay	Leq E	vening	Leq Ni	ght	La	In	C	NEL
Autos:	70	0.3	68.5		65.5	5	63.8		71.1		71.4
Medium Trucks:	71	1.6	70.1		64.0)	64.9		72.3	1	72.5
Heavy Trucks:	74	4.0	72.8		63.9)	66.0		73.9)	74.0
Vehicle Noise:	71	7.0	75.6		69.3	5	69.7		77.4		77.6
Centerline Distance	e to Noise C	ontour (in fe	et)			1					
				70	dBA	65 dB	BA	60 c	IBA	55	dBA
			Ldn:		124		267		576		1,241
			CNEL:		128		275		592		1,275

	FHWA-RD	-77-108 HIGH\	VAY NO	DISE P	REDIC	TION M	ODEL (S	0/12/2	021)		
Scenario	o: 2028 WP					Project	Name: I	rwinda	ale Gatewa	y SP	
Road Name	e: Arrow Highv	vay				Job N	umber: 1	5410			
Road Segmen	nt: e/o I-1605 N	IB On-Ramp									
SITE S	SPECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	5	
Highway Data				Si	te Con	ditions	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	20,994 vehicle	6					Autos:	15		
Peak Hour I	Percentage:	9.19%			Me	dium Tru	icks (2 A	xles):	15		
Peak Ho	our Volume:	1,929 vehicles			Hei	avy Truc	:ks (3+ A	xles):	15		
Vel	nicle Speed:	45 mph		Ve	hicle N	Nix					
Near/Far Lar	ne Distance:	48 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	72.4%	9.2%	18.4%	85.58%
Bar	rier Height:	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-Wa	all, 1-Berm):	0.0			F	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.30%
Centerline Dis	t. to Barrier:	40.0 feet		No	vico So	urco El	wations	(in f	nof)		
Centerline Dist. t	o Observer:	40.0 feet		740	136 30	Auto		000	eel)		
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Truck	. 0.0	00			
Observer Height (/	Above Pad):	5.0 feet			Heav	v Trucks	5. <u>2.2</u> 5. 80	104	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet			mour	,	. 0.0				
Roa	d Elevation:	0.0 feet		La	ne Equ	uivalent	Distanc	e (in i	feet)		
F	Road Grade:	0.0%				Autos	32.3	388			
	Left View:	-90.0 degree	6		Mediur	n Trucks	32.1	114			
	Right View:	90.0 degree	6		Heav	y Trucks	32.1	141			
FHWA Noise Mode	l Calculations	;		-							
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	68.46	0.34		2.73		-1.20		-4.59	0.0	000	0.000
Medium Trucks:	79.45	-9.38		2.78		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-11.74		2.78		-1.20		-5.56	0.0	000	0.000
Unmitigated Noise	Levels (witho	out Topo and L	arrier a	ttenua	ation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Eve	ning	Leq	Night		Ldn	C	NEL
Autos:	70.	3 6	8.5		65.5		63.8		71.1	1	71.4
Medium Trucks:	71.	6 7	0.1		64.0		64.9		72.3	3	72.5
Heavy Trucks:	74.	1 7	2.9		64.0		66.1		74.0)	74.
Vehicle Noise:	77.	1 7	5.7		69.3		69.8		77.4	1	77.6
Centerline Distanc	e to Noise Co	ntour (in feet)		70 -10			10.4		0.404		-/04
				∕∪ aB	A	65 (IBA		DU aBA	55	abA 4 OF 4
			dias		105		1121				1.1 A Mar 21
			dn:		125		269		580		1,201

Monday, June 26, 2023

	FHWA-RD	-77-108 HIGH	NAY NC	DISE F	PREDIC	TION M	ODEL (9/12/20	021)		
Scenar Road Nam Road Segmei	io: 2040 NP ne: Arrow Highv nt: e/o I-1605 N	vay ∖B On-Ramp				Project Job Nu	Name: Imber:	Irwinda 15410	ale Gatewa	ay SP	
SITE	SPECIFIC IN	PUT DATA				N	OISE I	NODE	L INPUT	S	
Highway Data				Si	ite Con	ditions (Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	32,309 vehicle	s					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	cks (2 /	Axles):	15		
Peak H	lour Volume:	2,969 vehicles			He	avy Truc	ks (3+ /	Axles):	15		
Ve	hicle Speed:	45 mph		V	ohiclo I	Mix					
Near/Far La	ne Distance:	48 feet			Vehi	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data					-	A	utos:	72.4%	9.2%	18.4	% 85.65%
Bai	rrier Height	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5	% 9.12%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.0	% 5.23%
Centerline Dis	st. to Barrier:	40.0 feet		N	nisa Sa	urce Ek	vation	e (in fe	of)		
Centerline Dist.	to Observer:	40.0 feet			0130 00	Autos		000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	. 0.	207			
Observer Height (Above Pad):	5.0 feet			Heav	v Trucks	. 2.	004	Grade Ad	liustme	nt: 0.0
Pa	ad Elevation:	0.0 feet			mour	,	. 0.			,	
Roa	ad Elevation:	0.0 feet		Lá	ane Equ	uivalent	Distan	ce (in f	feet)		
1	Road Grade:	0.0%				Autos	: 32.	388			
	Left View:	-90.0 degree	s		Mediur	m Trucks	: 32.	114			
	Right View:	90.0 degree	s		Heav	y Trucks	: 32.	141			
FHWA Noise Mode	el Calculations	5									-
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresr	nel	Barrier At	ten B	erm Atten
Autos:	68.46	2.22		2.73		-1.20		-4.59	0.	000	0.000
Medium Trucks:	79.45	-7.51		2.78		-1.20		-4.87	0.	000	0.000
Heavy Trucks:	84.25	-9.93		2.78		-1.20		-5.56	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and I	barrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Eve	ening	Leq I	Vight		Ldn		CNEL
Autos:	72	.2	70.4		67.4		65.7	7	73.	0	73.3
Medium Trucks:	73	.5	72.0		65.9		66.8	3	74.	2	74.4
Heavy Trucks:	75	.9	74.7		65.8		67.9	9	75.	8	75.9
Vehicle Noise:	78	.9	77.5		71.2		71.6	3	79.	3	79.4
Centerline Distance	ce to Noise Co	ntour (in feet)									
		-		70 dE	BA	65 c	<i>iBA</i>	6	i0 dBA	Ę	55 dBA
			dn:		166		358		770)	1,660
		CN	IEL:		171		368		792	2	1,706

	FHWA-RD	0-77-108 HIGHW	AY NOI	SE PREDI	CTION MC	DDEL (S	9/12/20	021)		
Scenar	io: 2040 WP				Project I	Vame: I	rwinda	ale Gatewa	ay SP	
Road Nam	e: Arrow High	way			Job Nu	imper: 1	15410			
Road Segme	ni. e/o i-1005 l	vь On-катр								
SITE	SPECIFIC IN	PUT DATA			N	OISE N	IODE	L INPUT	S	
Highway Data				Site Col	nditions (I	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	32,422 vehicles					Autos:	15		
Peak Hour	Percentage:	9.19%		M	edium Tru	cks (2 A	(xles):	15		
Peak H	lour Volume:	2,980 vehicles		H	eavy Trucl	ks (3+ A	(xles):	15		
Ve	hicle Speed:	45 mph		Vehicle	Mix					
Near/Far La	ne Distance:	48 feet		Vel	nicleType		Day	Evening	Nigh	t Daily
Site Data					A	utos:	72.4%	9.2%	18.4	% 85.60%
Bai	rrier Heiaht:	0.0 feet		N	ledium Tru	ucks:	77.7%	4.8%	17.5	9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			Heavy Tru	ucks:	84.3%	2.7%	13.0	% 5.28%
Centerline Di	st. to Barrier:	40.0 feet		Noise S	ource Ele	vations	s (in fe	ef)		
Centerline Dist.	to Observer:	40.0 feet			Autos	: 0.0	000	.00		
Barrier Distance	to Observer:	0.0 feet		Mediu	im Trucks	2.2	97			
Observer Height ((Above Pad):	5.0 feet		Hea	vv Trucks	: 8.0	004	Grade Ad	ljustme	ent: 0.0
Pa	ad Elevation:	0.0 feet								
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent i	Distanc	e (in f	'eet)		
	Road Grade:	0.0%			Autos.	: 32.3	388			
	Left View:	-90.0 degrees		Mediu	Im Trucks.	: 32.1	114			
	Right View:	90.0 degrees		Hea	vy Trucks.	: 32.1	141			
FHWA Noise Mode	el Calculation:	s								
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	e Road	Fresn	el	Barrier At	ten E	Berm Atten
Autos:	68.46	2.23	2	2.73	-1.20		-4.59	0.	000	0.000
Medium Trucks:	79.45	-7.50	2	2.78	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	84.25	-9.87	2	2.78	-1.20		-5.56	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and ba	rrier att	enuation)						
VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening	Leq N	light		Ldn		CNEL
Autos:	72	.2 70	.4	67.4	1	65.7		73.	0	73.3
Medium Trucks:	73	.5 72	.0	65.9	9	66.8		74.	2	74.4
Heavy Trucks:	76	.0 74	.8	65.8	3	67.9		75.	9	76.0
Vehicle Noise:	79	.0 77	.6	71.2	2	71.7		79.	.3	79.5
Centerline Distance	ce to Noise Co	ontour (in feet)								
			7	0 dBA	65 d	BA	6	60 dBA		55 dBA
		La	n:	167		359		774	4	1,668
		CNE	L:	171		369		79	5	1,715

	FHWA-RI	D-77-108 HIGH	IWAY N	OISE F	PREDIC	TION MO	DEL (9	/12/2	021)		
Scenar Road Nan Road Segme	io: E ne: Arrow High nt: e/o Maine /	way Avenue				Project N Job Nui	lame: Ir mber: 1	winda 5410	ale Gatewa	y SP	
SITE	SPECIFIC IN	IPUT DATA				NC	DISE M	ODE	L INPUTS	3	
Highway Data				S	ite Con	ditions (F	lard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	16,846 vehicl	es				A	utos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Truc	:ks (2 A	xles):	15		
Peak F	lour Volume:	1,548 vehicle	s		He	avy Truck	is (3+ A	xles):	15		
Ve	hicle Speed:	45 mph		V	ehicle I	<i>lix</i>					
Near/Far La	ne Distance:	80 feet			Vehi	cleTvpe	L	Dav	Evenina	Niaht	Dailv
Site Data						Au	itos: ī	72.4%	9.2%	18.4%	85.65%
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	cks: 7	77.7%	4.8%	17.5%	9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 8	34.3%	2.7%	13.0%	5.23%
Centerline Di	st. to Barrier:	50.0 feet		N	oise So	urce Elev	vations	(in fe	et)		
Centerline Dist.	to Observer:	50.0 feet				Autos:	0.0	00			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	2.2	97			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks:	8.0	04	Grade Adj	ustmen	t: 0.0
P	ad Elevation:	0.0 feet						- (1)	6		
Ro	ad Elevation:	0.0 feet		L	ane Equ	Autoo:	20.4	14	ieel)		
	Road Grade:	0.0%			Madium	Autos:	30.4	14			
	Len View:	-90.0 degre	es		Heav	v Trucks:	30.1	22 50			
	rugin view.	90.0 degre	62		neav	y maaka.	30.1	50			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	e/	Barrier Atte	en Be	rm Atten
Autos:	68.46	-0.61		3.14		-1.20	-	4.65	0.0	00	0.000
Medium Trucks:	79.45	-10.34		3.20		-1.20	-	4.87	0.0	00	0.000
Heavy Trucks:	84.25	-12.76		3.19		-1.20	-	5.43	0.0	00	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)						
VehicleType	Leq Peak Hou	ir Leq Da	/ L	.eq Eve	ening	Leq N	ight		Ldn	C	NEL
Autos:	69	.8	68.0		65.0		63.3		70.6	5	70.9
Medium Trucks:	71	.1	69.6		63.5		64.4		71.8		72.0
Heavy Trucks:	73	.5	72.3		63.4		65.5		73.4		73.5
Vehicle Noise:	76	i.5	75.1		68.8		69.2		76.9)	77.0
Centerline Distant	ce to Noise Co	ontour (in fee	9								
				70 dE	BA	65 dE	BA	6	i0 dBA	55	dBA
		-	Ldn:		143		309		665		1,433
		С	NEL:		147		317		684		1,473

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9	/12/20	021)		
Scenari	o: EP					Project	Name: I	winda	ale Gatewa	iy SP	
Road Nam	e: Arrow Highv	vay				Job N	umber: 1	5410			
Road Segmer	nt: e/o Maine A	venue									
SITE	SPECIFIC IN	PUT DATA				N	OISE N	ODE		S	
Highway Data				S	Site Con	ditions	(Hard = '	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	17,073 vehicle	s				A	Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	icks (2 A	xles):	15		
Peak H	our Volume:	1,569 vehicles	6		He	avy Truc	:ks (3+ A	xles):	15		
Vei	hicle Speed:	45 mph		L	/ehicle	Mix					
Near/Far Lar	ne Distance:	80 feet		F	Veh	icleTvpe		Dav	Evenina	Niaht	Dailv
Site Data						4	lutos:	72.4%	9.2%	18.4%	85.479
Bar	rior Hoight	0.0 feet			M	edium Tr	ucks:	77.7%	4.8%	17.5%	9.119
Barrier Type (0-W	all. 1-Berm)	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.41%
Centerline Dis	st. to Barrier:	50.0 feet		-	1-1 0			6	- 41		
Centerline Dist.	to Observer:	50.0 feet		^	voise sc	ource El	evations	(IN TE	eet)		
Barrier Distance	to Observer:	0.0 feet				Autos	s: 0.0	00			
Observer Height (Above Pad):	5.0 feet			Mediui	m Trucks	5. 2.2	97	Crada Ad	iuotmont	
Pa	d Elevation:	0.0 feet			Heav	y Trucks	5. 8.0	104	Graue Au	jusuneni.	0.0
Roa	d Elevation:	L	ane Eq	uivalent	Distanc	e (in i	feet)				
ŀ	Road Grade:	0.0%				Autos	s: 30.4	14			
	Left View:	-90.0 degree	s		Mediui	m Trucks	s: 30.1	22			
	Right View:	90.0 degree	s		Heav	y Trucks	s: 30.1	50			
FHWA Noise Mode	l Calculations	1									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	e/	Barrier Att	en Ber	m Atten
Autos:	68.46	-0.56		3.14	1	-1.20		4.65	0.0	000	0.00
Medium Trucks:	79.45	-10.29		3.20)	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	84.25	-12.55		3.19	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	Levels (witho	out Topo and	barrie	er atteni	uation)						-
VehicleType	Leq Peak Hou	r Leq Day		Leq Ev	rening	Leq	Night		Ldn	CI	VEL
Autos:	69.	8	68.0		65.0		63.3		70.6	6	71.
Medium Trucks:	71.	2	69.6		63.5		64.4		71.8	В	72.
Heavy Trucks:	73.	7	72.5		63.6		65.7		73.6	6	73.
Vehicle Noise:	76.	6	75.2		68.9		69.3		77.0	0	77.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 -	0.4	05	-10.4		0.404		-(D.4
			Ldn	70 a	14C	65 (3BA 215	6	00 0BA	55	1 400
		~	Lan:		146		315		6/8		1,460
			vr=1 '		10()		3/3		n4/		1 5(1)

Monday, June 26, 2023

	FHWA-RD	0-77-108 HIGH	IWAY N	OISE F	PREDIC	TION M	ODEL (9/12/2	021)			
Scenal Road Nan Road Segme	rio: 2028 NP ne: Arrow High ent: e/o Maine A	way wenue				Project Job Nu	Name: Imber:	Irwinda 15410	ale Gate	eway S	SP	
SITE	SPECIFIC IN	PUT DATA				N	OISE	NODE		JTS		
Highway Data				S	ite Con	ditions (Hard =	10, Sc	oft = 15,)		
Average Daily Peak Houi	r Traffic (Adt): r Percentage:	29,441 vehicl 9.19%	es		Ме	dium Tru	cks (2)	Autos: Axles):	15 15			
Peak I	Hour Volume:	2,706 vehicle	s		He	avy Truc	ks (3+ /	Axles):	15			
Ve	ehicle Speed:	45 mph		V	ehicle l	Nix						
Near/Far La	ane Distance:	80 feet			Veh	icleType		Day	Evenir	ng N	light	Daily
Site Data						A	utos:	72.4%	9.2	% 1	8.4%	85.65%
Ba	nrrier Heiaht:	0.0 feet			M	edium Tr	ucks:	77.7%	4.8	1%	7.5%	9.12%
Barrier Type (0-V	Vall, 1-Berm):	0.0			I	leavy Tr	ucks:	84.3%	5 2.7	'% 1	3.0%	5.23%
Centerline D	ist. to Barrier:	50.0 feet		N	oise Sr	urce Ele	vation	s (in fi	ef)			
Centerline Dist.	to Observer:	50.0 feet		<u> </u>	0.00 00	Autos	. 0	000				
Barrier Distance	to Observer:	0.0 feet			Mediu	n Trucks	. 0.	297				
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	8	004	Grade	Adius	tment:	0.0
P	Pad Elevation:	0.0 feet				,						
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	ce (in	feet)			
	Road Grade:	0.0%				Autos	: 30.	414				
	Left View:	-90.0 degre	es		Mediu	m Trucks	: 30.	122				
	Right View:	90.0 degre	es		Heav	y Trucks	: 30.	150				
FHWA Noise Mod	lel Calculation:	5										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr	nel	Barrier	Atten	Berr	m Atten
Autos:	68.46	1.81		3.14		-1.20		-4.65		0.000)	0.00
Medium Trucks:	79.45	-7.91		3.20		-1.20		-4.87		0.000)	0.00
Heavy Trucks:	84.25	-10.33		3.19		-1.20		-5.43		0.000)	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenu	ation)							
VehicleType	Leq Peak Hou	r Leq Day	/ L	eq Eve	ening	Leq I	Vight		Ldn		CN	VEL
Autos:	72	.2	70.4		67.4		65.7	7	1	73.0		73.3
Medium Trucks:	73	.5	72.0		65.9		66.8	3	1	74.2		74.4
Heavy Trucks:	75	.9	74.7		65.8		67.9	9		75.8		76.0
Vehicle Noise:	78	.9	77.5		71.2		71.6	3	1	79.3		79.
Centerline Distan	ce to Noise Co	ntour (in feet)									
				70 dl	BA	65 c	<i>iBA</i>	(60 dBA		55	dBA
			Ldn:		208		448		9	965		2,079
		С	NEL:		214		460		9	992		2,137

	FHWA-RD	0-77-108 HIGHV	AY NO	SE P	REDIC	TION M	ODEL (9/12/2	021)			
Scenar	io: 2028 WP					Project	Name:	Irwinda	ale Gatew	ay SF	2	
Road Nam	ne: Arrow High	way				Job Ni	umber:	15410				
Road Segme	nt: e/o Maine A	venue										
SITE	SPECIFIC IN	PUT DATA				N	OISE	NODE	L INPU	rs		
Highway Data				Si	te Con	ditions ('Hard =	10, Sc	oft = 15)		_	
Average Daily	Traffic (Adt):	29,668 vehicles						Autos:	15			
Peak Hour	Percentage:	9.19%			Me	dium Tru	icks (2	Axles):	15			
Peak H	lour Volume:	2,726 vehicles			Hea	avy Truc	ks (3+ ,	Axles):	15			
Ve	hicle Speed:	45 mph		Ve	hicle N	Nix						
Near/Far La	ne Distance:	80 feet		-	Vehi	cleType		Day	Evening	Nig	ght	Daily
Site Data						A	utos:	72.4%	9.2%	18	3.4%	85.55%
Ba	rrier Height	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17	7.5%	9.12%
Barrier Type (0-W	/all, 1-Berm):	0.0			F	leavy Tr	ucks:	84.3%	2.7%	13	3.0%	5.33%
Centerline Di	st. to Barrier:	50.0 feet		No	visa Sa	urce Ek	vation	e (in fa	oot)			
Centerline Dist.	to Observer:	50.0 feet		///	//30 00	Autos	. 0	000				
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	. 0.	207				
Observer Height	(Above Pad):	5.0 feet			Heav	v Trucks	. <u>2</u> . . g	004	Grade A	diustr	ment [.]	0.0
P	ad Elevation:	0.0 feet			mour	,	. 0.			.,		
Ro	ad Elevation:	0.0 feet		La	ne Equ	iivalent	Distan	ce (in i	feet)			
	Road Grade:	0.0%				Autos	: 30	414				
	Left View:	-90.0 degrees			Mediur	n Trucks	: 30	122				
	Right View:	90.0 degrees			Heav	y Trucks	: 30	150				
FHWA Noise Mod	el Calculations	5										
VehicleType	REMEL	Traffic Flow	Distand	e	Finite	Road	Fresi	nel	Barrier A	tten	Berr	n Atten
Autos:	68.46	1.84		3.14		-1.20		-4.65	0	.000		0.000
Medium Trucks:	79.45	-7.88		3.20		-1.20		-4.87	0	.000		0.000
Heavy Trucks:	84.25	-10.21		3.19		-1.20		-5.43	0	.000		0.000
Unmitigated Noise	e Levels (with	out Topo and b	arrier at	tenua	ation)							
VehicleType	Leq Peak Hou	r Leq Day	Le	q Eve	ning	Leq I	Vight		Ldn		CN	IEL
Autos:	72	.2 7	0.4		67.4		65.	7	73	.0	-	73.4
Medium Trucks:	73	.6 7	2.0		66.0		66.	3	74	.2		74.4
Heavy Trucks:	76	.0 7	4.9		65.9		68.)	76	.0		76.1
Vehicle Noise:	79	.0 7	7.6		71.3		71.	7	79	.4		79.5
Centerline Distant	ce to Noise Co	ntour (in feet)										
				70 dB	A	65 c	1BA	6	60 dBA		55 0	dBA
		L	dn:	-	210		453		97	5		2,102
		CN	EL:		216		465		1,00	3		2,160

	FHWA-RD	0-77-108 HIGH	WAY N	OISE	PREDIC	TION M	ODEL (9	/12/2	021)		
Scenar Road Nan Road Segme	io: 2040 NP ne: Arrow Highv nt: e/o Maine A	way wenue				Project Job Nu	Name: I umber: 1	rwinda 5410	ale Gatewa	y SP	
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	5	
Highway Data					Site Con	ditions (Hard =	10, Sc	oft = 15)		
Average Daily Peak Hour Peak H	Traffic (Adt): Percentage: lour Volume:	44,554 vehicle 9.19% 4.095 vehicle	es s		Mei Hei	dium Tru avy Truc	A cks (2 A ks (3+ A	Autos: xles): xles):	15 15 15		
Ve	hicle Speed:	45 mph		-				<i>.</i>			
Near/Far La	ne Distance:	80 feet		-	Venicle N	AIX		0	Curring	A.C. and a de	D-it.
Site Data					Veni	cie i ype	utos:	Day 72.4%	Evening	Night	Daily
Sile Dala					Me	n dium Tr	ucks:	77 7%	5 3.270	17.5%	6 03.03%
Ba	rrier Height:	0.0 feet			- Mic	leavy Tr	ucks:	RA 3%	27%	13.0%	5 23%
Barrier Type (0-W	/all, 1-Berm):	0.0				icavy in	ucho.	04.07	2.170	10.07	0.20%
Centerline Di	st. to Barrier.	50.0 feet		1	Noise So	urce Ele	evations	; (in fe	eet)		
Centerline Dist.	to Observer:	50.0 feet				Autos	: 0.0	000			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks	: 2.2	97			
Observer Height	(Above Pad):	5.0 feet			Heav	y Trucks	: 8.0	04	Grade Adj	iustmen	t: 0.0
P	ad Elevation:	0.0 feet		-	l ana Eau	inclose	Distanc	e (in	faati		
Ro	ad Elevation:	0.0 feet		-	Lane Equ	Ivalent	Distanc		ieel)		
	Road Grade:	0.0%			1 4 m ali	Autos	30.4	114			
	Left View:	-90.0 degree	es		Mealur	n Trucks	30.1	122			
	Right View:	90.0 degree	es		Heav	y Trucks	30.1	150			
FHWA Noise Mod	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Be	rm Atten
Autos:	68.46	3.61		3.14	4	-1.20		-4.65	0.0	000	0.000
Medium Trucks:	79.45	-6.11		3.2	0	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-8.53		3.1	9	-1.20		-5.43	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	atten	uation)						
VehicleType	Leg Peak Hou	r Leg Day	L	eq E	vening	Leg I	Vight		Ldn	0	NEL
Autos:	74	.0	72.2		69.2		67.5		74.8	3	75.1
Medium Trucks:	75	.3	73.8		67.7		68.6		76.0)	76.2
Heavy Trucks:	77	.7	76.5		67.6		69.7		77.6	6	77.8
Vehicle Noise:	80	.7	79.3		73.0		73.4		81.1		81.3
Centerline Distan	ce to Noise Co	ntour (in feet)								
				70 d	dBA	65 0	IBA	6	60 dBA	55	5 dBA
			Ldn:		274		590		1,272		2,740
		CI	VEL:		282		607		1,307		2,816

	THWARD	-11-100 111011	WAI	NOISE	TREDIC			1212	521)		
Scenari	o: 2040 WP					Project	Name: I	winda	ale Gatewa	y SP	
Road Nam	e: Arrow Highv	vay				Job N	umber: 1	5410			
Road Segmer	nt: e/o Maine A	venue									
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE		5	
Highway Data				5	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	44,781 vehicle	s					Autos:	15		
Peak Hour	Percentage:	9.19%			Me	dium Tru	icks (2 A	xles):	15		
Peak H	our Volume:	4,115 vehicles	5		He	avy Truc	:ks (3+ A	xles):	15		
Ve	hicle Speed:	45 mph		١	/ehicle l	Mix					
Near/Far La	ne Distance:	80 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	lutos:	72.4%	9.2%	18.4%	85.58%
Bai	rier Height:	0.0 feet			Me	edium Tr	ucks:	77.7%	4.8%	17.5%	9.129
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tr	ucks:	84.3%	2.7%	13.0%	5.30%
Centerline Dis	st. to Barrier:	50.0 feet			Voise Sr	urce El	ovations	(in fe	oof)		
Centerline Dist.	to Observer:	50.0 feet		-	10/30 00	Autor	. 00	00			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s. 0.0	97			
Observer Height (Above Pad):	5.0 feet			Heav	v Truck	s: 8.0	04	Grade Ad	justment	: 0.0
Pa	ad Elevation:	0.0 feet				,					
Roa	Road Elevation: 0.0 feet					uivalent	Distanc	e (in i	'eet)		
1	Road Grade:	0.0%				Autos	s: 30.4	14			
	Left View:	-90.0 degree	s		Mediui	m Trucks	s: 30.1	22			
	Right View:	90.0 degree	s		Heav	y Trucks	5: 30.1	50			
FHWA Noise Mode	el Calculations	r									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	e/	Barrier Att	en Ber	m Atten
Autos:	68.46	3.63		3.14	4	-1.20		4.65	0.0	000	0.00
Medium Trucks:	79.45	-6.09		3.20	D	-1.20		4.87	0.0	000	0.00
Heavy Trucks:	84.25	-8.45		3.19	9	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	e Levels (witho	out Topo and I	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day		Leq Ev	/ening	Leq	Night		Ldn	C	NEL
Autos:	74.	0	72.2		69.2		67.5		74.8	3	75.
Medium Trucks:	75.	4	73.8		67.7		68.6		76.0)	76.
Heavy Trucks:	77.	8	76.6		67.7		69.8		77.3	<u>/</u>	77.
Vehicle Noise:	80.	8	79.4		73.0		73.5		81.1	1	81.
Centerline Distanc	e to Noise Co	ntour (in feet)	-								
			L	70 c	IBA	65 (dBA	6	i0 dBA	55	dBA
			Lan:		276		595		1,281		2,760

APPENDIX 9.1:

OPTION 1 - OPERATIONAL NOISE MODEL CALCULATIONS

This page intentionally left blank



15410 - Irwindale Gateway SP

CadnaA Noise Prediction Model: 15410-02_opt1.cna Date: 27.06.23 Analyst: B. Lawson

Calculation Configuration

Configurat	ion
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	
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	mit. Valı	ue		Land	Use	Height	t	C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	37.5	37.4	44.1	50.0	45.0	0.0				5.00	а	6034263.20	2354758.95	5.00
RECEIVERS		R2	47.9	47.9	54.5	50.0	45.0	0.0				5.00	а	6039427.88	2353832.05	5.00
RECEIVERS		R3	42.9	42.8	49.5	50.0	45.0	0.0				5.00	а	6041246.41	2350129.14	5.00
RECEIVERS		R4	40.2	40.1	46.7	50.0	45.0	0.0				5.00	а	6039950.36	2349281.36	5.00
RECEIVERS		R5	36.1	36.0	42.7	50.0	45.0	0.0				5.00	а	6038883.31	2348423.93	5.00

Point Source(s)

Name	М.	ID	R	esult. PW	'L		Lw/L	i	Op	erating Ti	me	Height	:	Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038932.62	2351499.24	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038900.50	2351535.70	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038311.96	2351632.05	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039176.68	2351616.81	50.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039138.23	2351657.74	50.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039532.71	2351960.43	50.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039581.09	2352006.32	50.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038964.56	2352799.01	50.00
POINTSOURCE		AC09	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038928.58	2352832.50	50.00
POINTSOURCE		AC10	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039251.88	2353239.01	50.00
POINTSOURCE		AC11	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039066.23	2353414.04	50.00
POINTSOURCE		CAR001	81.1	81.1	81.1	Lw	81.1					5.00	а	6039616.03	2352034.83	5.00
POINTSOURCE		CAR002	81.1	81.1	81.1	Lw	81.1					5.00	а	6039601.42	2352069.53	5.00
POINTSOURCE		CAR003	81.1	81.1	81.1	Lw	81.1					5.00	а	6038365.86	2351924.41	5.00
POINTSOURCE		CAR004	81.1	81.1	81.1	Lw	81.1					5.00	а	6039588.64	2352109.10	5.00

Name	М.	ID	R	esult. PW	'L		Lw/L	i	Ор	erating Ti	ime	Heigh	t	Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		CAR005	81.1	81.1	81.1	Lw	81.1					5.00	а	6038347.11	2351904.27	5.00
POINTSOURCE		CAR006	81.1	81.1	81.1	Lw	81.1					5.00	а	6039606.29	2352157.81	5.00
POINTSOURCE		CAR007	81.1	81.1	81.1	Lw	81.1					5.00	а	6038342.25	2351841.08	5.00
POINTSOURCE		CAROUS	81.1	81.1	81.1	LW	81.1					5.00	a	6039632.47	2352183.37	5.00
POINTSOURCE		CAROU9	81.1	81.1	81.1	LW	81.1					5.00	a	6038371.42	2351868.86	5.00
POINTSOURCE		CAROIU	01.1	01.1	01.1	LW	01.1					5.00	d	6039055.78	2352204.07	5.00
POINTSOURCE		CAROII	01.1	01.1	01.1	LW	01.1					5.00	d	6036596.42	2351669.09	5.00
POINTSOURCE		CARO12	01.1	01.1	01.1	LW	01.1					5.00	d	6039665.45	2352235.29	5.00
POINTSOURCE		CARO15	01.1	01.1	01.1	LW	01.1					5.00	d	6030710.20	2351912.01	5.00
		CAR014	01.1 91.1	81.1 81.1	01.1 91.1	LW	01.1 91 1					5.00	a	6038420 75	2352255.47	5.00
POINTSOURCE		CARO15	01.1	01.1	01.1		01.1					5.00	a 2	6030423.75	2331340.03	5.00
		CARO10	01.1 91.1	01.1 81.1	01.1 91.1	LW	01.1 91 1					5.00	a	6038407 53	2352001.55	5.00
		CAR018	81.1	81.1	81.1	LW	81.1					5.00	a	6038866.40	2352837.23	5.00
		CAR019	81.1	81.1	81.1	Lw	81.1					5.00	a	6038383 92	2351995 25	5.00
POINTSOURCE		CAR020	81.1	81.1	81.1	Lw	81.1					5.00	a	6038834 52	2352803.93	5.00
POINTSOURCE		CAR021	81.1	81.1	81.1	Lw	81.1					5.00	a	6038230.46	2351502.16	5.00
POINTSOURCE		CAR022	81.1	81.1	81.1	Lw	81.1					5.00	a	6038808.30	2352779.13	5.00
POINTSOURCE		CAR023	81.1	81.1	81.1	Lw	81.1					5.00	a	6038260.29	2351471.72	5.00
POINTSOURCE		CAR024	81.1	81.1	81.1	Lw	81.1					5.00	а	6038780.66	2352752.91	5.00
POINTSOURCE		CAR025	81.1	81.1	81.1	Lw	81.1					5.00	а	6038287.69	2351441.28	5.00
POINTSOURCE		CAR026	81.1	81.1	81.1	Lw	81.1					5.00	а	6038757.99	2352730.23	5.00
POINTSOURCE		CAR027	81.1	81.1	81.1	Lw	81.1					5.00	а	6038310.82	2351415.71	5.00
POINTSOURCE		CAR028	81.1	81.1	81.1	Lw	81.1					5.00	а	6038731.06	2352704.02	5.00
POINTSOURCE		CAR029	81.1	81.1	81.1	Lw	81.1					5.00	а	6038337.61	2351384.05	5.00
POINTSOURCE		CAR030	81.1	81.1	81.1	Lw	81.1					5.00	а	6038694.21	2352669.29	5.00
POINTSOURCE		CAR031	81.1	81.1	81.1	Lw	81.1					5.00	а	6038402.14	2351412.06	5.00
POINTSOURCE		CAR032	81.1	81.1	81.1	Lw	81.1					5.00	а	6038668.70	2352644.49	5.00
POINTSOURCE		CAR033	81.1	81.1	81.1	Lw	81.1					5.00	а	6038365.61	2351418.15	5.00
POINTSOURCE		CAR034	81.1	81.1	81.1	Lw	81.1					5.00	а	6038626.90	2352600.56	5.00
POINTSOURCE		CAR035	81.1	81.1	81.1	Lw	81.1					5.00	а	6038367.44	2351451.02	5.00
POINTSOURCE		CAR036	81.1	81.1	81.1	Lw	81.1					5.00	а	6038593.59	2352571.51	5.00
POINTSOURCE		CAR037	81.1	81.1	81.1	Lw	81.1					5.00	а	6038327.87	2351460.15	5.00
POINTSOURCE		CAR038	81.1	81.1	81.1	Lw	81.1					5.00	а	6038560.29	2352538.91	5.00
POINTSOURCE		CAR039	81.1	81.1	81.1	Lw	81.1					5.00	а	6038326.04	2351491.81	5.00
POINTSOURCE		CAR040	81.1	81.1	81.1	Lw	81.1					5.00	а	6038590.05	2352628.19	5.00
POINTSOURCE		CAR041	81.1	81.1	81.1	Lw	81.1					5.00	а	6038291.34	2351496.68	5.00
POINTSOURCE		CAR042	81.1	81.1	81.1	Lw	81.1					5.00	а	6038592.88	2352664.33	5.00
POINTSOURCE		CAR043	81.1	81.1	81.1	Lw	81.1					5.00	а	6038284.04	2351536.25	5.00
POINTSOURCE		CAR044	81.1	81.1	81.1	Lw	81.1					5.00	а	6038625.48	2352665.04	5.00
POINTSOURCE		CAR045	81.1	81.1	81.1	Lw	81.1					5.00	а	6038249.34	2351534.42	5.00
POINTSOURCE		CAR046	81.1	81.1	81.1	Lw	81.1					5.00	а	6038632.56	2352702.60	5.00
POINTSOURCE		CAR047	81.1	81.1	81.1	Lw	81.1					5.00	а	6038252.38	2351569.12	5.00
POINTSOURCE		CAR048	81.1	81.1	81.1	Lw	81.1					5.00	а	6038669.41	2352704.02	5.00
POINTSOURCE		CAR049	81.1	81.1	81.1	Lw	81.1					5.00	а	6038274.30	2351606.87	5.00
POINTSOURCE		CAR050	81.1	81.1	81.1	Lw	81.1					5.00	а	6038686.42	2352750.07	5.00
POINTSOURCE		CAR051	81.1	81.1	81.1	Lw	81.1					5.00	а	6038300.47	2351577.64	5.00
POINTSOURCE		CAR052	81.1	81.1	81.1	Lw	81.1					5.00	а	6038720.43	2352754.33	5.00
POINTSOURCE		CAR053	81.1	81.1	81.1	Lw	81.1					5.00	а	6038333.35	2351544.16	5.00
POINTSOURCE		CAR054	81.1	81.1	81.1	Lw	81.1					5.00	а	6038729.64	2352793.30	5.00
POINTSOURCE		CAR055	81.1	81.1	81.1	Lw	81.1					5.00	а	6038361.96	2351515.55	5.00
POINTSOURCE		CAR056	81.1	81.1	81.1	Lw	81.1					5.00	а	6038773.58	2352804.64	5.00
POINTSOURCE		CARU5/	81.1	81.1	81.1	LW	81.1					5.00	a	6038394.22	2351482.68	5.00
POINTSOURCE	-	CARU58	81.1	81.1	81.1	LW	81.1					5.00	a	6028425 27	2352839.36	5.00
POINTSOURCE	-	CARU59	81.1 01 1	81.1	δ1.1 91 1	LW	01.1					5.00	a	6030014 60	2351452.85	5.00
POINTSOURCE	-	CAROCI	01.1	01.1	01.1	LW	01.1					5.00	d	CO204F0 4F	2332045.03	5.00
POINTSOURCE	-	CARU61	81.1	81.1	81.1	LW	81.1					5.00	a	6038458.15	2351418./5	5.00
POINTSOURCE	-	CARUOZ	01.1	01.1	01.1 01.1	LW	01.1 01.1					5.00	d	6020402 74	2351201 07	5.00
POINTSOURCE	-	CARUDS	81.1 01 1	81.1	01.1 01.1	LW	01.1					5.00	a	6020062 15	2351391.97	5.00
		CAR004	01.1 91.1	81.1 81.1	01.1 91.1	LW	01.1 91 1					5.00	a	6038500.28	2351367.01	5.00
POINTSOURCE		CAROCE	01.1 01.1	01.1	01.1 Q1 1	LW	01.1 91 1					5.00	d	6038854 00	23252022 10	5.00
POINTSOURCE		CAROG7	81 1	01.1 Q1 1	81.1	1.00	81 1					5.00	d	6038380 22	23513/0 04	5.00
POINTSOURCE	-	CAR068	81.1	81.1	81.1	Lw/	81 1					5.00	a	6038633 98	2352796 12	5.00
POINTSOURCE		CAR069	81 1	81.1	81 1	Lw	81 1					5.00	a	6038421 01	2351331 70	5.00
POINTSOURCE		CAR070	81 1	81 1	81 1	Lw	81.1					5.00	a	6038667 29	2352790 46	5.00
POINTSOURCE		CAR071	81.1	81.1	81.1	Lw	81.1					5,00	a	6038466.06	2351309.78	5.00
POINTSOURCE	-	CAR072	81.1	81.1	81.1	Lw	81.1					5,00	a	6038672.95	2352828.73	5.00
POINTSOURCE		CAR073	81.1	81.1	81.1	Lw	81.1					5.00	a	6038510.50	2351290.91	5.00
POINTSOURCE		CAR074	81.1	81.1	81.1	Lw	81.1					5.00	а	6038719.01	2352841.48	5.00
POINTSOURCE		CAR075	81.1	81.1	81.1	Lw	81.1					5.00	а	6038554.94	2351271.43	5.00
POINTSOURCE		CAR076	81.1	81.1	81.1	Lw	81.1					5.00	a	6038725.39	2352876.21	5.00
POINTSOURCE		CAR077	81.1	81.1	81.1	Lw	81.1					5.00	а	6038602.43	2351253.17	5.00
POINTSOURCE		CAR078	81.1	81.1	81.1	Lw	81.1					5.00	а	6038765.07	2352888.25	5.00
POINTSOURCE		CAR079	81.1	81.1	81.1	Lw	81.1					5.00	а	6038817.93	2351248.91	5.00
POINTSOURCE		CAR080	81.1	81.1	81.1	Lw	81.1					5.00	а	6038777.12	2352931.48	5.00
POINTSOURCE		CAR081	81.1	81.1	81.1	Lw	81.1					5.00	а	6038862.98	2351254.39	5.00

Name	М.	ID	R	esult. PW	'L		Lw/L	i	Op	erating T	ime	Heigh	t	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		CAR082	81.1	81.1	81.1	Lw	81.1					5.00	а	6038816.80	2352935.02	5.00
POINTSOURCE		CAR083	81.1	81.1	81.1	Lw	81.1					5.00	а	6038907.42	2351275.08	5.00
POINTSOURCE		CAR084	81.1	81.1	81.1	Lw	81.1					5.00	а	6038820.34	2352976.83	5.00
POINTSOURCE		CAR085	81.1	81.1	81.1	LW	81.1					5.00	a	6038///.14	2351294.56	5.00
POINTSOURCE		CARU86	81.1	81.1	81.1	LW	81.1					5.00	a	6038668.70	2352888.90	5.00
POINTSOURCE		CARU87	01.1	01.1	01.1	LW	01.1					5.00	d	6038608.46	2351327.44	5.00
POINTSOURCE			01.1	01.1	01.1	LW	01.1					5.00	d	6038098.40	2352913.05	5.00
POINTSOURCE		CAR089	01.1	01.1	01.1	LW	01.1					5.00	d	6038708 20	2351351.79	5.00
POINTSOURCE		CAR090	01.1	01.1	01.1	LW	01.1					5.00	d	6030708.39	2352955.57	5.00
		CAR091	01.1 91.1	81.1 81.1	01.1 91.1	LW	01.1 91 1					5.00	a	6038750.90	2351570.75	5.00
		CAR092	81 1	81.1 81.1	Q1 1	LW	Q1 1					5.00	a	6038897.07	2352505.50	5.00
		CAR095	01.1 91.1	01.1 81.1	01.1 91.1	LW	01.1 91 1					5.00	a	6038754.44	2351411.45	5.00
		CAR095	81.1	81.1	81.1	LW	81.1					5.00	a	6038925.08	2351438 23	5.00
		CAR096	81.1	81.1	81.1	Lw	81.1					5.00	a	6038792.00	2353005 17	5.00
POINTSOURCE		CAR097	81.1	81.1	81.1	Lw	81.1					5.00	a	6038964.65	2351476.59	5.00
POINTSOURCE		CAR098	81.1	81.1	81.1	Lw	81.1					5.00	a	6038938.68	2352962.66	5.00
POINTSOURCE		CAR099	81.1	81.1	81.1	Lw	81.1					5.00	a	6038955.51	2351320.74	5.00
POINTSOURCE		CAR100	81.1	81.1	81.1	Lw	81.1					5.00	а	6038906.79	2352991.71	5.00
POINTSOURCE		CAR101	81.1	81.1	81.1	Lw	81.1					5.00	а	6038987.17	2351352.40	5.00
POINTSOURCE		CAR102	81.1	81.1	81.1	Lw	81.1					5.00	а	6038870.66	2353027.85	5.00
POINTSOURCE		CAR103	81.1	81.1	81.1	Lw	81.1					5.00	а	6039017.00	2351380.40	5.00
POINTSOURCE		CAR104	81.1	81.1	81.1	Lw	81.1					5.00	а	6038839.48	2353056.19	5.00
POINTSOURCE		CAR105	81.1	81.1	81.1	Lw	81.1					5.00	а	6039042.57	2351403.53	5.00
POINTSOURCE		CAR106	81.1	81.1	81.1	Lw	81.1					5.00	а	6038814.68	2353178.07	5.00
POINTSOURCE		CAR107	81.1	81.1	81.1	Lw	81.1					5.00	а	6039067.53	2351429.10	5.00
POINTSOURCE		CAR108	81.1	81.1	81.1	Lw	81.1					5.00	а	6038787.04	2353149.73	5.00
POINTSOURCE		CAR109	81.1	81.1	81.1	Lw	81.1					5.00	а	6038847.76	2351306.13	5.00
POINTSOURCE		CAR110	81.1	81.1	81.1	Lw	81.1					5.00	а	6038782.79	2353206.42	5.00
POINTSOURCE		CAR111	81.1	81.1	81.1	Lw	81.1					5.00	а	6038885.51	2351307.96	5.00
POINTSOURCE		CAR112	81.1	81.1	81.1	Lw	81.1					5.00	а	6038796.25	2353250.35	5.00
POINTSOURCE		CAR113	81.1	81.1	81.1	Lw	81.1					5.00	а	6038885.51	2351340.22	5.00
POINTSOURCE		CAR114	81.1	81.1	81.1	Lw	81.1					5.00	а	6038847.98	2353239.72	5.00
POINTSOURCE		CAR115	81.1	81.1	81.1	Lw	81.1					5.00	а	6038930.55	2351351.18	5.00
POINTSOURCE		CAR116	81.1	81.1	81.1	Lw	81.1					5.00	а	6038833.81	2353288.61	5.00
POINTSOURCE		CAR117	81.1	81.1	81.1	Lw	81.1					5.00	а	6038930.55	2351387.10	5.00
POINTSOURCE		CAR118	81.1	81.1	81.1	Lw	81.1					5.00	а	6038884.12	2353275.86	5.00
POINTSOURCE		CAR119	81.1	81.1	81.1	Lw	81.1					5.00	а	6038967.08	2351388.32	5.00
POINTSOURCE		CAR120	81.1	81.1	81.1	Lw	81.1					5.00	а	6039220.71	2353335.38	5.00
POINTSOURCE		CAR121	81.1	81.1	81.1	Lw	81.1					5.00	а	6038979.26	2351432.15	5.00
POINTSOURCE		CAR122	81.1	81.1	81.1	Lw	81.1					5.00	а	6039232.75	2353385.69	5.00
POINTSOURCE		CAR123	81.1	81.1	81.1	Lw	81.1					5.00	а	6039014.57	2351431.54	5.00
POINTSOURCE		CAR124	81.1	81.1	81.1	Lw	81.1					5.00	а	6039185.28	2353366.56	5.00
POINTSOURCE		CAR125	81.1	81.1	81.1	Lw	81.1					5.00	а	6039017.61	2351467.46	5.00
POINTSOURCE		CAR126	81.1	81.1	81.1	Lw	81.1					5.00	а	6039193.07	2353421.83	5.00
POINTSOURCE		CAR127	81.1	81.1	81.1	Lw	81.1					5.00	а	6039223.98	2351543.55	5.00
POINTSOURCE		CAR128	81.1	81.1	81.1	Lw	81.1					5.00	а	6039151.97	2353400.57	5.00
POINTSOURCE		CAR129	81.1	81.1	81.1	Lw	81.1					5.00	а	6039210.59	2351592.86	5.00
POINTSOURCE		CAR130	81.1	81.1	81.1	Lw	81.1					5.00	а	6039165.44	2353447.34	5.00
POINTSOURCE		CAR131	81.1	81.1	81.1	Lw	81.1					5.00	а	6039255.03	2351570.34	5.00
POINTSOURCE		CAR132	81.1	81.1	81.1	Lw	81.1					5.00	а	6039118.67	2353434.59	5.00
POINTSOURCE		CAR133	81.1	81.1	81.1	Lw	81.1					5.00	а	6039241.64	2351621.48	5.00
POINTSOURCE		CAR134	81.1	81.1	81.1	Lw	81.1					5.00	а	6039092.45	2353489.15	5.00
POINTSOURCE	-	CAR135	81.1	81.1	81.1	LW	81.1					5.00	a	6039294.60	2351612.34	5.00
POINTSOURCE		CAR130	81.1	81.1	81.1	LW	81.1					5.00	a	6039286.08	2351064./0	5.00
POINTSOURCE	-	CAR13/	81.1	81.1	ŏ1.1	LW	01.1					5.00	a	6020224 70	2351049.48	5.00
POINTSOURCE	-	CAR138	81.1 01 1	81.1	δ1.1 01 1	LW	01.1					5.00	a	6030200 10	2351/11.57	5.00
POINTSOURCE		CAR159	01.1	01.1	01.1	LW	01.1					5.00	d	6039390.18	2351702.44	5.00
POINTSOURCE		CAR140	81.1	81.1	81.1	LW	81.1					5.00	a	6039373.13	2351/51.14	5.00
POINTSOURCE		CAR141	01.1	01.1	01.1	LW	01.1					5.00	d	6039433.40	2351745.07	5.00
POINTSOURCE		CAR142	01.1	01.1	01.1	LW	01.1					5.00	a	6020472.26	2331800.40	5.00
		CAR145	01.1 91.1	01.1 81.1	01.1 91.1	LW	01.1 91 1					5.00	a	6030480.41	2351264.02	5.00
		CAR145	81.1	81.1	81.1	LW	81.1					5.00	a	6039538 72	2351849.16	5.00
		CAR146	81.1	81.1	81.1	Lw	81.1					5.00	a	6039521.67	2351896.64	5.00
POINTSOURCE	-	CAR147	81 1	81.1	81 1	1.w/	81 1					5.00	a	6039578 20	2351885 68	5.00
POINTSOURCE		CAR148	81 1	81.1	81 1	1.w/	81 1					5.00	a	6039560 64	2351934 30	5.00
POINTSOURCE	-	CAR149	81 1	81.1	81 1	_w	81 1					5.00	3	6039606 20	2351910 64	5.00
POINTSOURCE	-	CAR150	81 1	81 1	81 1	Lw	81.1					5.00	a	6039592 29	2351963 61	5.00
POINTSOURCE		CAR151	81.1	81.1	81.1	Lw	81.1					5.00	a	6039647.69	2351953.26	5.00
POINTSOURCE		CAR152	81.1	81.1	81.1	Lw	81.1					5,00	a	6039673.26	2351981.26	5.00
POINTSOURCE		CAR153	81.1	81.1	81.1	Lw	81.1					5,00	a	6039701.26	2352009.87	5.00
POINTSOURCE	-	CAR154	81.1	81.1	81.1	Lw	81.1					5,00	a	6039725.61	2352033.01	5.00
POINTSOURCE		CAR155	81.1	81.1	81.1	Lw	81.1					5.00	a	6039671.43	2352042.14	5.00
POINTSOURCE		CAR156	81.1	81.1	81.1	Lw	81.1					5.00	а	6039678.13	2352073.79	5.00
POINTSOURCE		CAR157	81.1	81.1	81.1	Lw	81.1					5.00	а	6039698.22	2352096.93	5.00
POINTSOURCE		CAR158	81.1	81.1	81.1	Lw	81.1					5.00	а	6039750.57	2352068.92	5.00

Name	М.	ID	R	esult. PW	/L		Lw / L	.i	Op	erating T	ime	Heigh	t	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		CAR159	81.1	81.1	81.1	Lw	81.1					5.00	а	6039759.70	2352098.75	5.00
POINTSOURCE		CAR160	81.1	81.1	81.1	Lw	81.1					5.00	а	6039770.05	2352132.85	5.00
POINTSOURCE		CAR161	81.1	81.1	81.1	Lw	81.1					5.00	а	6039779.19	2352160.85	5.00
POINTSOURCE		CAR162	81.1	81.1	81.1	Lw	81.1					5.00	а	6039742.05	2352197.38	5.00
POINTSOURCE		CAR163	81.1	81.1	81.1	Lw	81.1					5.00	а	6039712.22	2352204.68	5.00
POINTSOURCE		CAR164	81.1	81.1	81.1	Lw	81.1					5.00	а	6039716.48	2352173.63	5.00
POINTSOURCE		CAR165	81.1	81.1	81.1	Lw	81.1					5.00	а	6039677.52	2352169.98	5.00
POINTSOURCE		CAR166	81.1	81.1	81.1	Lw	81.1					5.00	а	6039675.69	2352134.67	5.00
POINTSOURCE		CAR167	81.1	81.1	81.1	Lw	81.1					5.00	а	6039642.21	2352136.50	5.00
POINTSOURCE		TRASAH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6038455.38	2352189.51	5.00
POINTSOURCE		TRASAH02	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6039047.83	2351640.40	5.00
POINTSOURCE		TRASAH03	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6038950.81	2351658.98	5.00
POINTSOURCE		TRASAH04	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6038824.89	2353128.77	5.00
POINTSOURCE		TRASAH05	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6039646.48	2352317.50	5.00
POINTSOURCE		TRASAH06	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6039113.89	2352868.67	5.00

Line Source(s)

Name	М.	ID	R	esult. PW	'L	R	esult. PW	Ľ		Lw / L	i	Op	erating Ti	me		Moving	Pt. Src		Heig	nt
			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	76.9	76.9	76.9	Lw	93.2									8	а
LINESOURCE		TRUCK02	93.2	93.2	93.2	71.3	71.3	71.3	Lw	93.2									8	а
LINESOURCE		TRUCK03	93.2	93.2	93.2	80.6	80.6	80.6	Lw	93.2									8	а
LINESOURCE		TRUCK04	93.2	93.2	93.2	65.1	65.1	65.1	Lw	93.2									8	а
LINESOURCE		TRUCK05	93.2	93.2	93.2	73.2	73.2	73.2	Lw	93.2									8	а
LINESOURCE		TRUCK06	93.2	93.2	93.2	75.8	75.8	75.8	Lw	93.2									8	а

Name	ID	ŀ	lei	ght			Coordinat	es	
		Begin		End		x	у	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	а			6039731.34	2352343.83	8.00	0.00
						6039830.42	2352243.52	8.00	0.00
LINESOURCE	TRUCK02	8.00	а			6039344.30	2353251.20	8.00	0.00
						6038989.95	2352880.83	8.00	0.00
LINESOURCE	TRUCK03	8.00	а			6039049.11	2353028.27	8.00	0.00
						6039091.77	2352987.24	8.00	0.00
LINESOURCE	TRUCK04	8.00	а			6039036.07	2352833.84	8.00	0.00
						6038989.95	2352880.83	8.00	0.00
						6038831.10	2353031.87	8.00	0.00
						6038822.49	2353037.56	8.00	0.00
						6038813.10	2353041.83	8.00	0.00
						6038803.15	2353044.57	8.00	0.00
						6038792.89	2353045.73	8.00	0.00
						6038782.59	2353045.27	8.00	0.00
						6038772.48	2353043.20	8.00	0.00
						6038762.82	2353039.57	8.00	0.00
						6038753.84	2353034.47	8.00	0.00
						6038634.05	2352923.36	8.00	0.00
						6038625.37	2352893.85	8.00	0.00
						6038129.00	2351413.47	8.00	0.00
LINESOURCE	TRUCK05	8.00	а			6038938.96	2351608.43	8.00	0.00
						6039037.13	2351512.38	8.00	0.00
						6039154.66	2351476.61	8.00	0.00
					_	6039199.85	2351429.80	8.00	0.00
LINESOURCE	TRUCK06	8.00	а			6039082.45	2351636.43	8.00	0.00
						6039124.73	2351587.58	8.00	0.00
						6039142.25	2351540.12	8.00	0.00
						6039154.66	2351476.61	8.00	0.00

Area Source(s)

Name	М.	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)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		Γ
AREASOURCE		DOCK01	111.5	111.5	111.5	75.1	75.1	75.1	Lw	111.5					8	a
AREASOURCE		DOCK02	111.5	111.5	111.5	66.9	66.9	66.9	Lw	111.5					8	a
AREASOURCE		DOCK03	111.5	111.5	111.5	67.7	67.7	67.7	Lw	111.5					8	a

Name	ID	ŀ	lei	ght			Coordinat	es	
		Begin		End		х	У	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	DOCK01	8.00	а	(ft)		6038921.96	2353259.30	8.00	0.00
						6039103.78	2353085.54	8.00	0.00
						6038976.21	2352951.90	8.00	0.00
						6038786.48	2353134.16	8.00	0.00
AREASOURCE	DOCK02	8.00	а			6038959.44	2352763.72	8.00	0.00

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
					6039002.41	2352801.48	8.00	0.00
					6039225.70	2353016.14	8.00	0.00
					6039811.04	2352422.71	8.00	0.00
					6039544.67	2352159.11	8.00	0.00
AREASOURCE	DOCK03	8.00	а		6038489.39	2352370.49	8.00	0.00
					6039146.94	2351698.61	8.00	0.00
					6039049.00	2351604.18	8.00	0.00
					6038992.55	2351660.63	8.00	0.00
					6038861.79	2351533.25	8.00	0.00
					6038528.45	2351866.58	8.00	0.00
					6038575.33	2351908.25	8.00	0.00
					6038506.32	2351977.26	8.00	0.00
					6038467.10	2351939.26	8.00	0.00
					6038371.65	2352036.37	8.00	0.00

Building(s)

Name	Sel	м	חו	RR	Residents	Absorption	Height			Coordinat	<u>م</u>	
Nume	501.		10		Residents	Absorption	Begin		x	v	z	Ground
							(ft)	Γ	(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00001	x	0		45.00	a	6038903.12	2353277.32	45.00	0.00
									6039071.30	2353452.01	45.00	0.00
									6039288.32	2353243.68	45.00	0.00
									6039123.38	2353066.81	45.00	0.00
BUILDING			BUILDING00002	x	0		45.00	a	6038527.15	2352482.47	45.00	0.00
									6038933.40	2352875.69	45.00	0.00
									6039002.41	2352801.48	45.00	0.00
									6038959.44	2352763.72	45.00	0.00
									6039549.29	2352154.34	45.00	0.00
									6039609.18	2352003.30	45.00	0.00
									6039174.29	2351582.73	45.00	0.00
									6039102.67	2351655.64	45.00	0.00
									6039146.94	2351698.61	45.00	0.00
									6038489.39	2352370.49	45.00	0.00
BUILDING			BUILDING00003	x	0		45.00	а	6038338.35	2351814.50	45.00	0.00
									6038506.32	2351977.26	45.00	0.00
									6038575.33	2351908.25	45.00	0.00
									6038528.45	2351866.58	45.00	0.00
									6038861.79	2351533.25	45.00	0.00
									6038902.15	2351574.91	45.00	0.00
									6038968.56	2351503.30	45.00	0.00
									6038702.93	2351253.30	45.00	0.00
									6038597.46	2351296.27	45.00	0.00
									6038279.76	2351632.21	45.00	0.00

This page intentionally left blank



APPENDIX 9.2:

OPTION 2 - OPERATIONAL NOISE MODEL CALCULATIONS



This page intentionally left blank



15410 - Irwindale Gateway SP

CadnaA Noise Prediction Model: 15410-02_opt2.cna Date: 27.06.23 Analyst: B. Lawson

Calculation Configuration

Configuration											
Parameter	Value										
General											
Max. Error (dB)	0.00										
Max. Search Radius (#(Unit,LEN))	2000.01										
Min. Dist Src to Rcvr	0.00										
Partition											
Raster Factor	0.50										
Max. Length of Section (#(Unit,LEN))	999.99										
Min. Length of Section (#(Unit,LEN))	1.01										
Min. Length of Section (%)	0.00										
Proj. Line Sources	On										
Proj. Area Sources	On										
Ref. Time											
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	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)	
RECEIVERS		R1	37.7	37.7	44.3	50.0	45.0	0.0				5.00	а	6034263.20	2354758.95	5.00	
RECEIVERS		R2	47.9	47.8	54.5	50.0	45.0	0.0				5.00	а	6039427.88	2353832.05	5.00	
RECEIVERS		R3	42.4	42.3	49.0	50.0	45.0	0.0				5.00	а	6041246.41	2350129.14	5.00	
RECEIVERS		R4	41.5	41.4	48.1	50.0	45.0	0.0				5.00	а	6039950.36	2349281.36	5.00	
RECEIVERS		R5	39.0	39.0	45.6	50.0	45.0	0.0				5.00	а	6038883.31	2348423.93	5.00	

Point Source(s)

Name	М.	ID	Result. PWL			Lw / Li			Operating Time			Height		Co		
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE2		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039224.18	2351662.29	50.00
POINTSOURCE2		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039188.37	2351697.02	50.00
POINTSOURCE2		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039546.60	2352048.97	50.00
POINTSOURCE2		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039581.09	2352006.32	50.00
POINTSOURCE2		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038964.56	2352799.01	50.00
POINTSOURCE2		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038928.58	2352832.50	50.00
POINTSOURCE2		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039251.88	2353239.01	50.00
POINTSOURCE2		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039066.23	2353414.04	50.00
POINTSOURCE2		CAR001	81.1	81.1	81.1	Lw	81.1					5.00	а	6039255.03	2351570.34	5.00
POINTSOURCE2		CAR002	81.1	81.1	81.1	Lw	81.1					5.00	а	6039241.64	2351621.48	5.00
POINTSOURCE2		CAR003	81.1	81.1	81.1	Lw	81.1					5.00	а	6039294.60	2351612.34	5.00
POINTSOURCE2		CAR004	81.1	81.1	81.1	Lw	81.1					5.00	а	6039286.08	2351664.70	5.00
POINTSOURCE2		CAR005	81.1	81.1	81.1	Lw	81.1					5.00	а	6039332.95	2351649.48	5.00
POINTSOURCE2		CAR006	81.1	81.1	81.1	Lw	81.1					5.00	а	6039334.78	2351711.57	5.00
POINTSOURCE2		CAR007	81.1	81.1	81.1	Lw	81.1					5.00	а	6039390.18	2351702.44	5.00

Name	М.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE2		CAR008	81.1	81.1	81.1	Lw	81.1					5.00	а	6039373.13	2351751.14	5.00
POINTSOURCE2		CAR009	81.1	81.1	81.1	Lw	81.1					5.00	а	6039433.40	2351745.67	5.00
POINTSOURCE2		CAR010	81.1	81.1	81.1	Lw	81.1					5.00	а	6039423.05	2351800.46	5.00
POINTSOURCE2		CAR011	81.1	81.1	81.1	Lw	81.1					5.00	а	6039472.36	2351784.02	5.00
POINTSOURCE2		CAR012	81.1	81.1	81.1	Lw	81.1					5.00	а	6039489.41	2351864.38	5.00
POINTSOURCE2		CAR013	81.1	81.1	81.1	Lw	81.1					5.00	а	6039538.72	2351849.16	5.00
POINTSOURCE2		CAR014	81.1	81.1	81.1	LW	81.1					5.00	a	6039521.67	2351896.64	5.00
POINTSOURCE2		CARUIS	81.1	81.1	81.1	LW	81.1					5.00	a	6039578.29	2351885.68	5.00
POINTSOURCE2		CARU16	81.1	81.1	81.1	LW	81.1					5.00	a	6039560.64	2351934.39	5.00
		CAR017	81.1 81.1	81.1	81.1 81.1	LW	81.1 81.1					5.00	d	6039502 20	2351910.04	5.00
POINTSOURCE2		CAR019	81.1	81.1	81.1	LW	81.1					5.00	a	6039647.69	2351953.01	5.00
POINTSOURCE2		CAR020	81.1	81.1	81.1	LW	81.1					5.00	a	6039673.26	2351933.20	5.00
POINTSOURCE2		CAR021	81.1	81.1	81.1	Lw	81.1					5.00	a	6039701.26	2352009.87	5.00
POINTSOURCE2		CAR022	81.1	81.1	81.1	Lw	81.1					5.00	a	6039725.61	2352033.01	5.00
POINTSOURCE2		CAR023	81.1	81.1	81.1	Lw	81.1					5.00	a	6039671.43	2352042.14	5.00
POINTSOURCE2		CAR024	81.1	81.1	81.1	Lw	81.1					5.00	a	6039678.13	2352073.79	5.00
POINTSOURCE2		CAR025	81.1	81.1	81.1	Lw	81.1					5.00	а	6039698.22	2352096.93	5.00
POINTSOURCE2		CAR026	81.1	81.1	81.1	Lw	81.1					5.00	а	6039750.57	2352068.92	5.00
POINTSOURCE2		CAR027	81.1	81.1	81.1	Lw	81.1					5.00	а	6039759.70	2352098.75	5.00
POINTSOURCE2		CAR028	81.1	81.1	81.1	Lw	81.1					5.00	а	6039770.05	2352132.85	5.00
POINTSOURCE2		CAR029	81.1	81.1	81.1	Lw	81.1					5.00	а	6039779.19	2352160.85	5.00
POINTSOURCE2		CAR030	81.1	81.1	81.1	Lw	81.1					5.00	а	6039742.05	2352197.38	5.00
POINTSOURCE2		CAR031	81.1	81.1	81.1	Lw	81.1					5.00	а	6039712.22	2352204.68	5.00
POINTSOURCE2		CAR032	81.1	81.1	81.1	Lw	81.1					5.00	а	6039716.48	2352173.63	5.00
POINTSOURCE2		CAR033	81.1	81.1	81.1	Lw	81.1					5.00	а	6039677.52	2352169.98	5.00
POINTSOURCE2		CAR034	81.1	81.1	81.1	Lw	81.1					5.00	а	6039675.69	2352134.67	5.00
POINTSOURCE2		CAR035	81.1	81.1	81.1	Lw	81.1					5.00	а	6039642.21	2352136.50	5.00
POINTSOURCE2		CAR036	81.1	81.1	81.1	Lw	81.1					5.00	а	6039616.03	2352034.83	5.00
POINTSOURCE2		CAR037	81.1	81.1	81.1	Lw	81.1					5.00	а	6039601.42	2352069.53	5.00
POINTSOURCE2		CAR038	81.1	81.1	81.1	Lw	81.1					5.00	а	6039588.64	2352109.10	5.00
POINTSOURCE2		CAR039	81.1	81.1	81.1	Lw	81.1					5.00	а	6039606.29	2352157.81	5.00
POINTSOURCE2		CAR040	81.1	81.1	81.1	Lw	81.1					5.00	а	6039632.47	2352183.37	5.00
POINTSOURCE2		CAR041	81.1	81.1	81.1	Lw	81.1					5.00	а	6039653.78	2352204.07	5.00
POINTSOURCE2		CAR042	81.1	81.1	81.1	LW	81.1					5.00	a	6039685.43	2352233.29	5.00
POINTSOURCE2		CAR045	01.1	01.1	01.1	LW	01.1					5.00	d	6039710.39	2352259.47	5.00
		CAR044	81.1 81.1	81.1	81.1 81.1	LW	81.1 81.1					5.00	d	6038866.40	2352801.33	5.00
POINTSOURCE2		CAR045	81.1	81.1	81.1	LW	81.1					5.00	a	6038834 52	2352803.93	5.00
		CAR047	81.1	81.1	81.1	Lw	81.1					5.00	a	6038808 30	2352779 13	5.00
POINTSOURCE2		CAR048	81.1	81.1	81.1	Lw	81.1					5.00	a	6038780.66	2352752.91	5.00
POINTSOURCE2		CAR049	81.1	81.1	81.1	Lw	81.1					5.00	a	6038757.99	2352730.23	5.00
POINTSOURCE2		CAR050	81.1	81.1	81.1	Lw	81.1					5.00	a	6038731.06	2352704.02	5.00
POINTSOURCE2		CAR051	81.1	81.1	81.1	Lw	81.1					5.00	а	6038694.21	2352669.29	5.00
POINTSOURCE2		CAR052	81.1	81.1	81.1	Lw	81.1					5.00	а	6038668.70	2352644.49	5.00
POINTSOURCE2		CAR053	81.1	81.1	81.1	Lw	81.1					5.00	а	6038626.90	2352600.56	5.00
POINTSOURCE2		CAR054	81.1	81.1	81.1	Lw	81.1					5.00	а	6038593.59	2352571.51	5.00
POINTSOURCE2		CAR055	81.1	81.1	81.1	Lw	81.1					5.00	а	6038560.29	2352538.91	5.00
POINTSOURCE2		CAR056	81.1	81.1	81.1	Lw	81.1					5.00	а	6038590.05	2352628.19	5.00
POINTSOURCE2		CAR057	81.1	81.1	81.1	Lw	81.1					5.00	а	6038592.88	2352664.33	5.00
POINTSOURCE2		CAR058	81.1	81.1	81.1	Lw	81.1					5.00	а	6038625.48	2352665.04	5.00
POINTSOURCE2		CAR059	81.1	81.1	81.1	Lw	81.1					5.00	а	6038632.56	2352702.60	5.00
POINTSOURCE2		CAR060	81.1	81.1	81.1	Lw	81.1					5.00	a	6038669.41	2352704.02	5.00
POINTSOURCE2		CAR061	81.1	81.1	81.1	Lw	81.1					5.00	а	6038686.42	2352750.07	5.00
POINTSOURCE2		CAR062	81.1	81.1	81.1	Lw	81.1					5.00	а	6038720.43	2352754.33	5.00
POINTSOURCE2	-	CAR063	81.1	81.1	81.1	LW	81.1					5.00	а	ьU38729.64	2352793.30	5.00
POINTSOURCE2		CAR064	81.1	81.1	81.1	LW	81.1					5.00	a	6038773.58	2352804.64	5.00
POINTSOURCE2	-	CARU65	81.1	81.1	81.1	LW	81.1					5.00	a	0038780.66	2352839.36	5.00
POINTSOURCE2	-	CARUBB	81.1 01 1	<u>81.1</u>	81.1 01 1		01.1					5.00	a	6030022 47	2352845.03	5.00
POINTSOURCE2	-	CARUD/	01.1 91 1	01.1 01.1	01.1 91 1		01.1 81 1					5.00	d 2	6038862 15	2332005.42	5.00
POINTSOURCE2		CARODO	01.1 91 1	01.1 Q1 1	01.1 91 1		01.1 81 1					5.00	d 2	6038864 00	2332000.90	5.00
		CAR009	81.1 81.1	81.1 81.1	01.1 91.1		01.1 91.1					5.00	a 2	6038633.08	2352552.15	5.00
POINTSOURCE?	-	CAR071	81 1	81 1	81 1	Lw	81.1					5.00	a	6038667 29	2352790 46	5.00
POINTSOURCE2		CAR072	81.1	81.1	81.1	Lw	81.1					5.00	a	6038672 95	2352828 73	5.00
POINTSOURCE2		CAR073	81.1	81.1	81.1	Lw	81.1					5.00	a	6038719.01	2352841.48	5.00
POINTSOURCE2		CAR074	81.1	81.1	81.1	Lw	81.1					5.00	a	6038725.39	2352876.21	5.00
POINTSOURCE2		CAR075	81.1	81.1	81.1	Lw	81.1					5.00	a	6038765.07	2352888.25	5.00
POINTSOURCE2		CAR076	81.1	81.1	81.1	Lw	81.1					5.00	а	6038777.12	2352931.48	5.00
POINTSOURCE2		CAR077	81.1	81.1	81.1	Lw	81.1					5.00	а	6038816.80	2352935.02	5.00
POINTSOURCE2		CAR078	81.1	81.1	81.1	Lw	81.1					5.00	а	6038820.34	2352976.83	5.00
POINTSOURCE2		CAR079	81.1	81.1	81.1	Lw	81.1					5.00	а	6038668.70	2352888.96	5.00
POINTSOURCE2		CAR080	81.1	81.1	81.1	Lw	81.1					5.00	а	6038698.46	2352913.05	5.00
POINTSOURCE2		CAR081	81.1	81.1	81.1	Lw	81.1					5.00	а	6038708.39	2352955.57	5.00
POINTSOURCE2		CAR082	81.1	81.1	81.1	Lw	81.1					5.00	а	6038750.90	2352963.36	5.00
POINTSOURCE2		CAR083	81.1	81.1	81.1	Lw	81.1					5.00	a	6038754.44	2352999.50	5.00
POINTSOURCE2		CAR084	81.1	81.1	81.1	Lw	81.1					5.00	a	6038792.00	2353005.17	5.00
Name	М.	ID	R	esult. PW	/L		Lw/L	i	Op	erating T	ime	Heigh	t	C	oordinates	
--------------	----	---------	-------	-----------	-------	------	-------	-------	--------	-----------	--------	-------	---	------------	------------	------
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE2		CAR085	81.1	81.1	81.1	Lw	81.1					5.00	а	6038938.68	2352962.66	5.00
POINTSOURCE2		CAR086	81.1	81.1	81.1	Lw	81.1					5.00	а	6038906.79	2352991.71	5.00
POINTSOURCE2		CAR087	81.1	81.1	81.1	Lw	81.1					5.00	а	6038870.66	2353027.85	5.00
POINTSOURCE2		CAR088	81.1	81.1	81.1	Lw	81.1					5.00	а	6038839.48	2353056.19	5.00
POINTSOURCE2		CAR089	81.1	81.1	81.1	Lw	81.1					5.00	а	6038814.68	2353178.07	5.00
POINTSOURCE2		CAR090	81.1	81.1	81.1	Lw	81.1					5.00	а	6038787.04	2353149.73	5.00
POINTSOURCE2		CAR091	81.1	81.1	81.1	Lw	81.1					5.00	а	6038782.79	2353206.42	5.00
POINTSOURCE2		CAR092	81.1	81.1	81.1	Lw	81.1					5.00	а	6038796.25	2353250.35	5.00
POINTSOURCE2		CAR093	81.1	81.1	81.1	Lw	81.1					5.00	а	6038847.98	2353239.72	5.00
POINTSOURCE2		CAR094	81.1	81.1	81.1	Lw	81.1					5.00	а	6038833.81	2353288.61	5.00
POINTSOURCE2		CAR095	81.1	81.1	81.1	Lw	81.1					5.00	а	6038884.12	2353275.86	5.00
POINTSOURCE2		CAR096	81.1	81.1	81.1	Lw	81.1					5.00	а	6039220.71	2353335.38	5.00
POINTSOURCE2		CAR097	81.1	81.1	81.1	Lw	81.1					5.00	а	6039232.75	2353385.69	5.00
POINTSOURCE2		CAR098	81.1	81.1	81.1	Lw	81.1					5.00	а	6039185.28	2353366.56	5.00
POINTSOURCE2		CAR099	81.1	81.1	81.1	Lw	81.1					5.00	а	6039193.07	2353421.83	5.00
POINTSOURCE2		CAR100	81.1	81.1	81.1	Lw	81.1					5.00	а	6039151.97	2353400.57	5.00
POINTSOURCE2		CAR101	81.1	81.1	81.1	Lw	81.1					5.00	а	6039165.44	2353447.34	5.00
POINTSOURCE2		CAR102	81.1	81.1	81.1	Lw	81.1					5.00	а	6039118.67	2353434.59	5.00
POINTSOURCE2		CAR103	81.1	81.1	81.1	Lw	81.1					5.00	а	6039092.45	2353489.15	5.00
POINTSOURCE2		TRASH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6038463.77	2352311.17	5.00
POINTSOURCE2		TRASH02	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6039092.53	2351661.73	5.00
POINTSOURCE2		TRASH03	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6038824.89	2353128.77	5.00
POINTSOURCE2		TRASH04	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6039646.48	2352317.50	5.00
POINTSOURCE2		TRASH05	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	а	6039113.89	2352868.67	5.00

Line Source(s)

-	-								_											
Name	М.	ID	R	esult. PW	Ľ	R	esult. PW	L'		Lw/L	i	Op	erating Ti	me		Moving	Pt. Src		Heigh	nt
			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)	
LINESOURCE2		TRUCK01	93.2	93.2	93.2	76.9	76.9	76.9	Lw	93.2									8	а
LINESOURCE2		TRUCK02	93.2	93.2	93.2	71.3	71.3	71.3	Lw	93.2									8	а
LINESOURCE2		TRUCK03	93.2	93.2	93.2	80.6	80.6	80.6	Lw	93.2									8	а
LINESOURCE2		TRUCK04	93.2	93.2	93.2	67.8	67.8	67.8	Lw	93.2									8	а
LINESOURCE2		TRUCK05	93.2	93.2	93.2	74.7	74.7	74.7	Lw	93.2									8	а

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE2	TRUCK01	8.00	а		6039731.34	2352343.83	8.00	0.00
					6039830.42	2352243.52	8.00	0.00
LINESOURCE2	TRUCK02	8.00	а		6039344.30	2353251.20	8.00	0.00
					6038989.95	2352880.83	8.00	0.00
LINESOURCE2	TRUCK03	8.00	а		6039049.11	2353028.27	8.00	0.00
					6039091.77	2352987.24	8.00	0.00
LINESOURCE2	TRUCK04	8.00	а		6039036.07	2352833.84	8.00	0.00
					6038989.95	2352880.83	8.00	0.00
					6038831.10	2353031.87	8.00	0.00
					6038822.49	2353037.56	8.00	0.00
					6038813.10	2353041.83	8.00	0.00
					6038803.15	2353044.57	8.00	0.00
					6038792.89	2353045.73	8.00	0.00
					6038782.59	2353045.27	8.00	0.00
					6038772.48	2353043.20	8.00	0.00
					6038762.82	2353039.57	8.00	0.00
					6038753.84	2353034.47	8.00	0.00
					6038634.05	2352923.36	8.00	0.00
					6038625.37	2352893.85	8.00	0.00
					6038471.52	2352434.99	8.00	0.00
					6038469.28	2352420.92	8.00	0.00
					6038468.92	2352406.67	8.00	0.00
					6038470.44	2352392.50	8.00	0.00
					6038473.83	2352378.66	8.00	0.00
					6038479.01	2352365.39	8.00	0.00
					6038485.90	2352352.91	8.00	0.00
LINESOURCE2	TRUCK05	8.00	а		6039129.51	2351679.84	8.00	0.00
					6039287.07	2351509.18	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	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)		
AREASOURCE2		DOCK01	111.5	111.5	111.5	75.1	75.1	75.1	Lw	111.5					8	a
AREASOURCE2		DOCK02	111.5	111.5	111.5	66.9	66.9	66.9	Lw	111.5					8	a
AREASOURCE2		DOCK03	111.5	111.5	111.5	70.7	70.7	70.7	Lw	111.5					8	a
AREASOURCE2		BESS01	82.2	82.2	82.2	40.1	40.1	40.1	Lw	82.2					8	a

Name	M.	ID	R	esult. PW	'L	Re	esult. PW	L''		Lw/L	i	Op	erating Ti	ime	Height	:
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE2		BESS02	82.2	82.2	82.2	50.4	50.4	50.4	Lw	82.2					8	а
AREASOURCE2		BESS03	82.2	82.2	82.2	47.1	47.1	47.1	Lw	82.2					8	а
AREASOURCE2		BESS04	82.2	82.2	82.2	45.7	45.7	45.7	Lw	82.2					8	а
AREASOURCE2		BESS05	82.2	82.2	82.2	46.6	46.6	46.6	Lw	82.2					8	а
AREASOURCE2		BESS06	82.2	82.2	82.2	51.7	51.7	51.7	Lw	82.2					8	а

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE2	DOCK01	8.00	а		6038921.96	2353259.30	8.00	0.00
					6039103.78	2353085.54	8.00	0.00
					6038976.21	2352951.90	8.00	0.00
					6038786.48	2353134.16	8.00	0.00
AREASOURCE2	DOCK02	8.00	а		6038959.44	2352763.72	8.00	0.00
					6039002.41	2352801.48	8.00	0.00
					6039225.70	2353016.14	8.00	0.00
					6039811.04	2352422.71	8.00	0.00
					6039544.67	2352159.11	8.00	0.00
AREASOURCE2	DOCK03	8.00	а		6038512.17	2352438.04	8.00	0.00
					6039193.57	2351740.02	8.00	0.00
					6039146.94	2351698.61	8.00	0.00
					6039095.61	2351643.35	8.00	0.00
					6038466.61	2352290.39	8.00	0.00
AREASOURCE2	BESS01	8.00	а		6038397.36	2352030.13	8.00	0.00
					6038535.16	2352151.66	8.00	0.00
					6039182.95	2351471.32	8.00	0.00
					6039042.98	2351348.71	8.00	0.00
AREASOURCE2	BESS02	8.00	а		6038370.23	2351987.82	8.00	0.00
					6038491.76	2351867.37	8.00	0.00
					6038457.04	2351770.80	8.00	0.00
					6038336.60	2351881.48	8.00	0.00
AREASOURCE2	BESS03	8.00	а		6038537.33	2351813.12	8.00	0.00
					6038689.24	2351657.95	8.00	0.00
					6038639.33	2351480.00	8.00	0.00
					6038484.16	2351641.68	8.00	0.00
AREASOURCE2	BESS04	8.00	а		6038723.97	2351613.47	8.00	0.00
					6038946.40	2351388.86	8.00	0.00
					6038919.28	2351293.37	8.00	0.00
					6038883.47	2351307.48	8.00	0.00
					6038863.94	2351247.80	8.00	0.00
					6038671.88	2351437.69	8.00	0.00
AREASOURCE2	BESS05	8.00	а		6038453.78	2351549.45	8.00	0.00
					6038625.22	2351472.41	8.00	0.00
					6038567.72	2351262.99	8.00	0.00
					6038402.78	2351342.20	8.00	0.00
AREASOURCE2	BESS06	8.00	а		6038653.44	2351374.75	8.00	0.00
					6038752.18	2351332.43	8.00	0.00
					6038715.28	2351223.93	8.00	0.00
					6038620.88	2351265.16	8.00	0.00

Building(s)

Name	Sel.	М.	ID	RB	Residents	Absorption	Height	:		Coordinat	es	
							Begin		х	У	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING2			BUILDING200001	x	0		45.00	а	6038903.12	2353277.32	45.00	0.00
									6039071.30	2353452.01	45.00	0.00
									6039288.32	2353243.68	45.00	0.00
									6039123.38	2353066.81	45.00	0.00
BUILDING2			BUILDING200002	x	0		45.00	а	6038527.15	2352482.47	45.00	0.00
									6038933.40	2352875.69	45.00	0.00
									6039002.41	2352801.48	45.00	0.00
									6038959.44	2352763.72	45.00	0.00
									6039549.29	2352154.34	45.00	0.00
									6039609.18	2352003.30	45.00	0.00
									6039218.32	2351625.31	45.00	0.00
									6039146.94	2351698.61	45.00	0.00
									6039193.57	2351740.02	45.00	0.00
									6038512.17	2352438.04	45.00	0.00

APPENDIX 10.1:

PROJECT CONSTRUCTION NOISE MODEL INPUTS



This page intentionally left blank



15410 - Irwindale Gateway SP

CadnaA Noise Prediction Model: 15410-02_construction.cna Date: 27.06.23 Analyst: B. Lawson

Calculation Configuration

Configurat	ion
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	
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	Use	Height	:	C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	44.5	44.5	51.1	50.0	45.0	0.0				5.00	a	6034263.20	2354758.95	5.00
RECEIVERS		R2	59.9	59.9	66.5	50.0	45.0	0.0				5.00	а	6039427.88	2353832.05	5.00
RECEIVERS		R3	50.9	50.9	57.6	50.0	45.0	0.0				5.00	а	6041246.41	2350129.14	5.00
RECEIVERS		R4	51.1	51.1	57.8	50.0	45.0	0.0				5.00	a	6039950.36	2349281.36	5.00
RECEIVERS		R5	48.8	48.8	55.5	50.0	45.0	0.0				5.00	a	6038883.31	2348423.93	5.00

Point Source(s)

Name	М.	ID	R	esult. PW	/L		Lw / L	.i	Op	erating Ti	ime	Heigh	t	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
		CONS01	115.0	115.0	115.0	Lw	115					8.00	а	6039187.89	2353326.87	8.00
		CONS02	115.0	115.0	115.0	Lw	115					8.00	а	6039722.01	2352147.18	8.00
		CONS03	115.0	115.0	115.0	Lw	115					8.00	а	6039266.85	2351636.29	8.00
		CONS04	115.0	115.0	115.0	Lw	115					8.00	а	6038700.23	2351269.38	8.00
		CONS05	115.0	115.0	115.0	Lw	115					8.00	а	6038189.34	2352439.78	8.00

Area Source(s)

																_
Name	М.	ID	R	esult. PW	Ľ	Re	esult. PW	L"		Lw/L	i	Op	erating Ti	ime	Height	;
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
SITEBOUNDARY		CONSTRUCTION	115.0	115.0	115.0	61.0	61.0	61.0	Lw	115					8	а

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	x	у	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	а		6038541.69	2353187.57	8.00	0.00
					6038567.56	2353254.82	8.00	0.00
					6038629.99	2353375.60	8.00	0.00
					6038692.50	2353375.10	8.00	0.00
					6038744.72	2353335.93	8.00	0.00
					6038741.87	2353168.54	8.00	0.00
					6038790.90	2353318.85	8.00	0.00
					6038812.64	2353314.97	8.00	0.00
					6038834.69	2353313.51	8.00	0.00
					6038856.76	2353314.49	8.00	0.00
					6038878.58	2353317.90	8.00	0.00
					6038899.90	2353323.70	8.00	0.00
					6038920.45	2353331.81	8.00	0.00
					6038939.98	2353342.14	8.00	0.00
					6038958.25	2353354.56	8.00	0.00
					6038975.04	2353368.92	8.00	0.00
					6038990.14	2353385.04	8.00	0.00
					6039003.37	2353402.73	8.00	0.00
					6039014.57	2353421.77	8.00	0.00
			Η		6030020.00	2222441.93	0.00	0.00
			Η		6030030.35	2333402.97	8.00	0.00
			\vdash	\vdash	6030034.74	2333484.02	0.00	0.00
			Η		6030036.72	2333500.02	8.00	0.00
			Η		6030030.25	2353528.71	8.00	0.00
			\vdash	+	6039033.30	2353550.01	8.00	0.00
			Η		6039020.00	2353592.00	8.00	0.00
					6039010 56	2353612 55	8.00	0.00
			Η		6039007 60	2353650 09	8.00	0.00
					6039046.28	2353563.69	8.00	0.00
					6039054 94	2353550 52	8.00	0.00
					6039065 19	2353538 54	8.00	0.00
					6039076.87	23535550.54	8.00	0.00
					6039089 78	2353518 91	8.00	0.00
					6039103.74	2353511.58	8.00	0.00
					6039118.50	2353506.05	8.00	0.00
					6039162.94	2353485.91	8.00	0.00
					6039211.56	2353449.11	8.00	0.00
					6039281.00	2353378.97	8.00	0.00
					6039290.83	2353357.90	8.00	0.00
					6039298.36	2353335.91	8.00	0.00
					6039316.42	2353281.05	8.00	0.00
					6039321.36	2353272.01	8.00	0.00
					6039327.79	2353263.96	8.00	0.00
					6039335.52	2353257.14	8.00	0.00
					6039344.30	2353251.75	8.00	0.00
					6039353.88	2353247.96	8.00	0.00
					6039363.97	2353245.87	8.00	0.00
					6039374.27	2353245.56	8.00	0.00
					6039384.47	2353247.02	8.00	0.00
					6039220.68	2353077.68	8.00	0.00
					6039261.82	2353059.59	8.00	0.00
					6039352.41	2352987.51	8.00	0.00
					6039403.15	2352924.72	8.00	0.00
					6039357.79	2352880.41	8.00	0.00
					6039846.73	2352387.27	8.00	0.00
					6039846.26	2352275.93	8.00	0.00
					6039870.58	2352260.22	8.00	0.00
					6039859.71	2352258.60	8.00	0.00
					6039849.23	2352255.31	8.00	0.00
					6039839.38	2352250.43	8.00	0.00
					6039830.42	2352244.07	8.00	0.00
					6039822.55	2352236.39	8.00	0.00
					6039815.98	2352227.58	8.00	0.00
					6039810.86	2352217.86	8.00	0.00
					6039812.94	2352163.00	8.00	0.00
					6039813.87	2352146.31	8.00	0.00
					6039812.90	2352129.64	8.00	0.00
					6039810.05	2352113.17	8.00	0.00
					6039805.36	2352097.14	8.00	0.00
					6039798.89	2352081.74	8.00	0.00
					6039790.72	2352067.16	8.00	0.00
					6039683.08	2351937.30	8.00	0.00
					6039500.44	2351735.22	8.00	0.00
					6039280.31	2351502.58	8.00	0.00
					6039158.08	2351392.86	8.00	0.00
					6039035.17	2351299.11	8.00	0.00

Name	ID	He	eight	Coordinates			
		Begin	End	х	У	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6038917.11	2351231.05	8.00	0.00
				6038817.81	2351219.25	8.00	0.00
				6038753.92	2351208.83	8.00	0.00
				6038747.31	2351207.43	8.00	0.00
				6038741.00	2351205.02	8.00	0.00
				6038735.15	2351201.64	8.00	0.00
				6038729.90	2351197.38	8.00	0.00
				6038725.39	2351192.36	8.00	0.00
				6038721.72	2351186.68	8.00	0.00
				6038718.99	2351180.51	8.00	0.00
				6038646.13	2351213.48	8.00	0.00
				6038633.58	2351186.22	8.00	0.00
				6038049.75	2351449.80	8.00	0.00
				6038061.56	2351485.22	8.00	0.00
				6038133.08	2351560.91	8.00	0.00
				6038172.67	2351742.16	8.00	0.00
				6038099.82	2351829.09	8.00	0.00
				6038015.35	2351856.29	8.00	0.00
				6037908.91	2351860.67	8.00	0.00
				6037980.12	2352019.54	8.00	0.00
				6038028.74	2352025.07	8.00	0.00
				6038100.46	2352184.66	8.00	0.00
				6038082.72	2352247.53	8.00	0.00
				6038286.56	2352693.55	8.00	0.00
				6038458.08	2353067.86	8.00	0.00
				6038513.78	2353201.40	8.00	0.00

This page intentionally left blank

