# Appendix M Noise-Vibration



# West Campus Upper Plateau

NOISE AND VIBRATION ANALYSIS MARCH JOINT POWERS AUTHORITY (MARCH JPA)

PREPARED BY:

Bill Lawson, PE, INCE blawson@urbanxroads.com (949) 336-5979

JANUARY 3, 2023

14064-14 Noise Study



# **TABLE OF CONTENTS**

TA	BLE OI	F CONTENTS	. 111
		CES	
		XHIBITS	
		ABLES ABBREVIATED TERMS	
		VE SUMMARY	
1		RODUCTION	
-	1.1	Site Location	
	1.1 1.2	Project Description	-
2		NDAMENTALS	
Z			
	2.1	Range of Noise	
	2.2 2.3	Noise Descriptors	
	2.3 2.4	Sound Propagation Noise Control	
	2.4	Noise Barrier Attenuation	
	2.6	Land Use Compatibility With Noise	
	2.7	Community Response to Noise	
	2.8	Vibration	
3	REC	GULATORY SETTING	13
	3.1	Federal Regulations	13
	3.2	State of California Noise Requirements	
	3.3	March JPA Noise/Air Quality Element	
	3.4	Operational Noise Standards	15
	3.5	Construction Noise Standards	16
	3.6	Construction Vibration Standards	
	3.7	March Air Reserve Base/Inland Port Airport Land Use Compatibility	
4	SIG	NIFICANCE CRITERIA	-
	4.1	Noise Level Increases (Threshold A)	
	4.2	Vibration (Threshold B)	
	4.3	CEQA Guidelines Not Further Analyzed (Threshold C)	
	4.4	Significance Criteria Summary	
5	EXI	STING NOISE LEVEL MEASUREMENTS	27
	5.1	Measurement Procedure and Criteria	27
	5.2	Noise Measurement Locations	27
	5.3	Noise Measurement Results	28
6	TR	AFFIC NOISE METHODS AND PROCEDURES	31
	6.1	FHWA Traffic Noise Prediction Model	31
7	OF	F-SITE TRAFFIC NOISE ANALYSIS	39
	7.1	Traffic Noise Contours	
	7.2	Existing + Project Traffic Noise Level Increases	
	7.3	EA Traffic Noise Level Increases	
	7.4	OYC 2028 Traffic Noise Level Increases	47



	7.5	HY 2045 Traffic Noise Level Increases	. 48
	7.6	Off-Site Traffic Noise Impacts	50
	7.7	Cumulative Traffic Noise Level Increases	51
8	SEN	ISITIVE RECEIVER LOCATIONS	55
9	OP	ERATIONAL NOISE IMPACTS	59
	9.1	Operational Noise Sources	.59
	9.2	Reference Noise Levels	. 59
	9.3	CadnaA Noise Prediction Model	63
	9.4	Project Operational Noise Levels	64
	9.5	Project Operational Noise Level Compliance	65
	9.6	Project Operational Noise Level Increases	66
10	CO	NSTRUCTION ANALYSIS	69
	<b>CO</b> 10.1	NSTRUCTION ANALYSIS Construction Noise Standards	
			69
	10.1	Construction Noise Standards	. 69 . 69
	10.1 10.2	Construction Noise Standards Construction Noise Levels	. 69 . 69 . 69
	10.1 10.2 10.3	Construction Noise Standards Construction Noise Levels Construction Reference Noise Levels	. 69 . 69 . 69 . 71
	10.1 10.2 10.3 10.4	Construction Noise Standards Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis	. 69 . 69 . 69 . 71 . 73
	10.1 10.2 10.3 10.4 10.5	Construction Noise Standards Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis Construction Noise Level Compliance	. 69 . 69 . 69 . 71 . 73 . 73
	10.1 10.2 10.3 10.4 10.5 10.6	Construction Noise Standards Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis Construction Noise Level Compliance Temporary Construction Noise Level Increases	. 69 . 69 . 71 . 73 . 73 . 74
	10.1 10.2 10.3 10.4 10.5 10.6 10.7 10.8	Construction Noise Standards Construction Noise Levels Construction Reference Noise Levels Construction Noise Analysis Construction Noise Level Compliance Temporary Construction Noise Level Increases Construction Vibration Impacts	. 69 . 69 . 71 . 73 . 73 . 74 . 76

# **APPENDICES**

- APPENDIX 3.1: MARCH JPA DEVELOPMENT CODE
- APPENDIX 3.2: CITY OF RIVERSIDE MUNICIPAL CODE
- APPENDIX 3.3: COUNTY OF RIVERSIDE MUNICIPAL CODE
- **APPENDIX 5.1: STUDY AREA PHOTOS**
- APPENDIX 5.2: NOISE LEVEL MEASUREMENT WORKSHEETS
- APPENDIX 7.1: OFF-SITE TRAFFIC NOISE CONTOURS
- APPENDIX 9.1: CADNAA OPERATIONAL NOISE MODEL INPUTS
- APPENDIX 10.1: CADNAA CONSTRUCTION NOISE MODEL INPUTS

# **LIST OF EXHIBITS**

EXHIBIT 1-A:	LOCATION MAP	. 4
EXHIBIT 1-B:	SITE PLAN	. 5
EXHIBIT 2-A:	TYPICAL NOISE LEVELS	. 7
EXHIBIT 2-B:	NOISE LEVEL INCREASE PERCEPTION	10
EXHIBIT 2-C:	TYPICAL LEVELS OF GROUND-BORNE VIBRATION	12
EXHIBIT 3-B:	RC ALUCP SUPPORTING COMPATIBILITY CRITERIA: NOISE	21
EXHIBIT 3-C:	MARB/IPA FUTURE AIRPORT NOISE CONTOURS	22
EXHIBIT 5-A:	NOISE MEASUREMENT LOCATIONS	29
EXHIBIT 8-A:	RECEIVER LOCATIONS	57
EXHIBIT 9-A:	OPERATIONAL NOISE SOURCE LOCATIONS	5 <b>0</b>
EXHIBIT 10-A	: CONSTRUCTION NOISE SOURCE ACTIVITY	70

# LIST OF TABLES

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS	
TABLE 3-1: EXTERIOR NOISE STANDARDS 16	j
TABLE 3-2: CONSTRUCTION NOISE STANDARDS	5
TABLE 3-3: VIBRATION ANNOYANCE STANDARDS 19	)
TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY	
TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS	5
TABLE 6-1: OFF-SITE ROADWAY PARAMETERS	5
TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES	ļ
TABLE 6-3: TIME OF DAY VEHICLE SPLITS	j
TABLE 6-4: EXISTING VEHICLE MIX	
TABLE 6-5: EXISTING + PROJECT VEHICLE MIX	j
TABLE 6-6: EAP VEHICLE MIX	
TABLE 6-7: OYC 2028 WITH PROJECT VEHICLE MIX	,
TABLE 6-8: HY 2045 WITH PROJECT VEHICLE MIX 38	;
TABLE 7-1: EXISTING CONTOURS	
TABLE 7-2: EXISTING + PROJECT CONTOURS 40	)
TABLE 7-3: EA WITHOUT PROJECT CONTOURS 41	
TABLE 7-4: EAP CONTOURS	
TABLE 7-5: OYC 2028 WITHOUT PROJECT CONTOURS 42	
TABLE 7-6: OYC 2028 WITH PROJECT CONTOURS 43	
TABLE 7-7: HY 2045 WITHOUT PROJECT CONTOURS 44	
TABLE 7-8: HY 2045 WITH PROJECT CONTOURS 44	
TABLE 7-9: EXISTING + PROJECT TRAFFIC NOISE LEVEL INCREASES	
TABLE 7-10: EAP TRAFFIC NOISE LEVEL INCREASES 47	'
TABLE 7-11: OYC 2028 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES 48	
TABLE 7-12: HY 2045 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES	
TABLE 7-13: CUMULATIVE PROJECT TRAFFIC NOISE LEVEL INCREASES	
TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS	
TABLE 9-2: TRUCK MOVEMENTS BY LOCATION	
TABLE 9-3: DAYTIME PROJECT OPERATIONAL NOISE LEVELS	
TABLE 9-4: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS	
TABLE 9-5: OPERATIONAL NOISE LEVEL COMPLIANCE	
TABLE 9-6: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES	
TABLE 9-7: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES	'
TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS	
TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY	
TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE	
TABLE 10-4: DAYTIME TEMPORARY CONSTRUCTION NOISE LEVEL INCREASES	
TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT	
TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS	)

# LIST OF ABBREVIATED TERMS

(1)	Reference
ANSI	American National Standards Institute
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
I-215	Interstate 215
INCE	Institute of Noise Control Engineering
L <sub>eq</sub>	Equivalent continuous (average) sound level
L <sub>max</sub>	Maximum level measured over the time interval
L <sub>min</sub>	Minimum level measured over the time interval
MARB/IPA	March Air Reserve Base/Inland Port Airport
MJPA	March Joint Powers Authority
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak Particle Velocity
Project	West Campus Upper Plateau
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels
RMS	Root-mean-square

This page intentionally left blank



# **EXECUTIVE SUMMARY**

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the West Campus Upper Plateau Project ("Project"). This study has been prepared to satisfy applicable March Joint Powers Authority (March JPA) standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) The results of this West Campus Upper Plateau Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

Anglucia	Report	Significance Findings			
Analysis	Section	Unmitigated	Mitigated		
Off-Site Traffic	7	Potentially Significant	Significant and Unavoidable <sup>1</sup>		
Operational Noise	9	Less Than Significant	-		
Construction Noise	10	Less Than Significant	-		
Construction Vibration	10	Less Than Significant	-		

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

<sup>1</sup> The Significant and Unavoidable off-site traffic noise impact is limited to the non-noise sensitive land uses adjacent to the only one study area roadway segment, Cactus Avenue east of Meridian Parkway (Segment #13). This segment is in a developed industrial area and is not located immediately adjacent to any noise sensitive land uses. All other roadway segments will experience off-site traffic noise level impacts that are considered less than significant.

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 West Campus Upper Plateau Project ("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 Project site is located on either side of Barton Street and Cactus Avenue in the jurisdiction of the March Joint Powers Authority (March JPA) and unincorporated Riverside County, as shown on Exhibit 1-A. Interstate 215 (I-215) is located approximately 2.5 miles east of the Project site via Cactus Avenue, Alessandro Boulevard, and Van Buren Boulevard.

## **1.2 PROJECT DESCRIPTION**

The proposed Project (as shown on Exhibit 1-B) consists of the following uses:

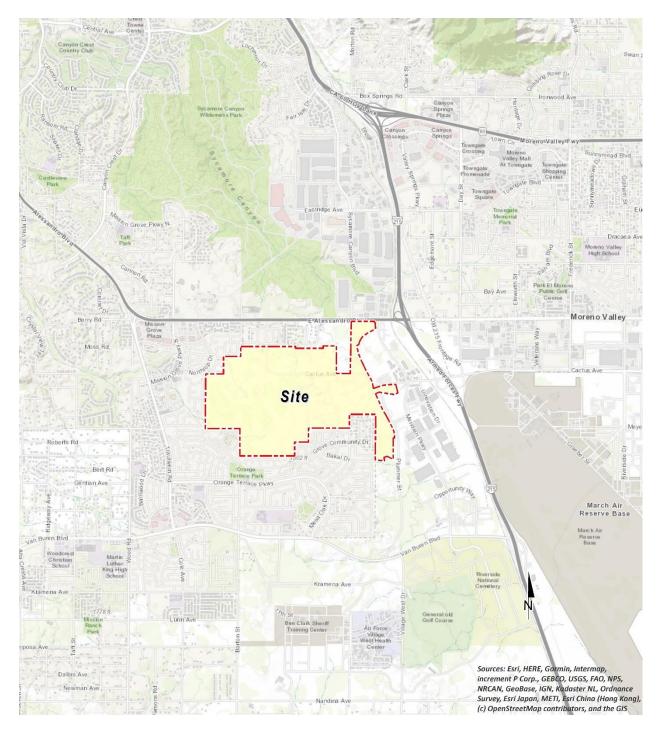
- Building B 1,250,000 square feet (SF) of high-cube fulfillment center warehouse use
- Building C 587,000 SF of high-cube fulfillment center warehouse use
- Industrial Area 725,561 SF of high-cube fulfillment center warehouse use
- Industrial Area 500,000 SF of high-cube cold storage warehouse use
- Business Park Area 1, 280,403 SF of business park use (30% Office use)
- Mixed Use Area 160,921 SF of retail use (25%)
- Mixed Use Area 482,765 SF of business park use (75%)
- 42.2-acre Active Park (with sports fields)
- 35.8 acres of Park/Open Space use
- Public Facilities 2.84 acres for future sewer lift station and electrical substation

The proposed Project also includes the establishment of a 445.43-acre Conservation Easement in compliance with the Center for Biological Diversity (CBD) Settlement Agreement. According to the *West Campus Upper Plateau Traffic Analysis*, the proposed Project is anticipated to generate a total of 35,314 trip-ends per day including 2,054 truck trips (in actual vehicles). The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning, trash enclosure activity, parking lot vehicle movements, truck movements and park activities. This noise analysis is intended to describe the noise level impacts associated with the expected typical operational activities at the Project site.

It is expected that the noise generated by the Project construction equipment will include a combination of crawler tractors, excavators, graders, dozers, scrapers, forklifts, generator sets, welders, paving equipment, and air compressors that when combined can reach high levels. In



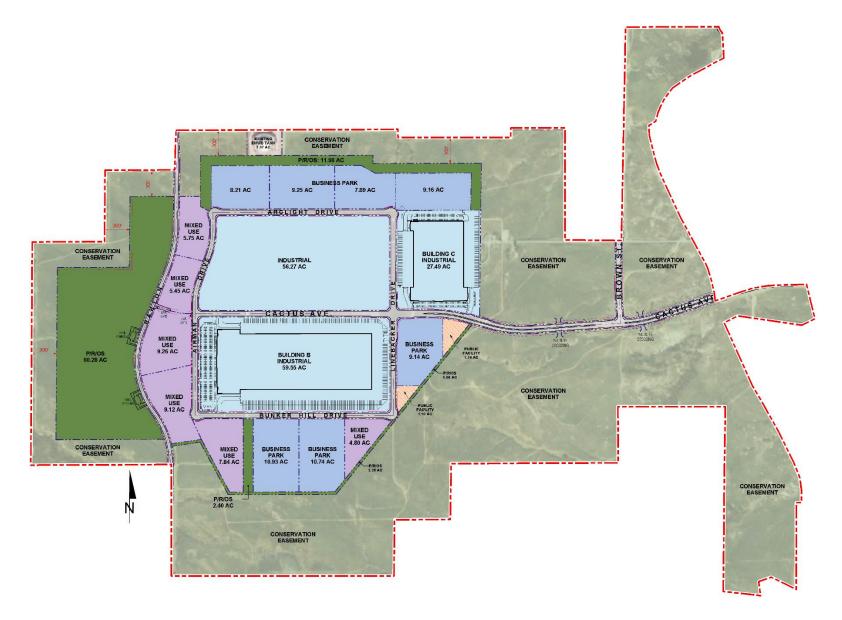
addition, rock blasting may be required during grading operations to support Project construction, therefore, this analysis considers the potential blasting noise and vibration levels at the nearest noise sensitive receiver locations.



**EXHIBIT 1-A: LOCATION MAP** 



#### EXHIBIT 1-B: SITE PLAN





This page intentionally left blank



# 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	$\mathbf{X}$		
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		SPEECH INTERFERENCE	
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD		
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60			
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP	
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		DISTURBANCE	
QUIET SUBURBAN NIGHTTIME	LIBRARY	30			
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	NO EFFECT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0			

### EXHIBIT 2-A: TYPICAL NOISE LEVELS

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 Day-Night Noise level (Ldn) or Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The Ldn or CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA L<sub>eq</sub> sound levels in the evening from 7:00 p.m. to 10:00 p.m. for CNEL, and the addition of 10 decibels to dBA L<sub>eq</sub> sound levels at night between 10:00 p.m. and 7:00 a.m. for Ldn and CNEL. These additions are made to account for the noise sensitive time periods during the evening and night hours when noise can become more intrusive. Ldn or CNEL do not represent the actual sound level heard at any time, but rather represents the total sound exposure. The March JPA relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

# 2.3 SOUND PROPAGATION

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

# 2.3.1 GEOMETRIC SPREADING

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

# 2.3.2 GROUND ABSORPTION

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



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

### 2.3.3 ATMOSPHERIC EFFECTS

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

### 2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to 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.



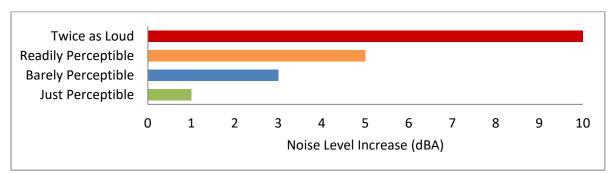
# 2.6 LAND USE COMPATIBILITY WITH NOISE

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.



+			
	100	•	Blasting from construction projects
•	90	•	Bulldozers and other heavy tracked construction equipment
	Ш	-	Commuter rail, upper range
+	80	•	Rapid transit, upper range
		-	Commuter rail, typical
+		←	Bus or truck over bump
	70	-	Rapid transit, typical
•	60	•	Bus or truck, typical
	50	-	Typical background vibration
	→ → →	→ 80 → 70 → 60	+ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$

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

\* RMS Vibration Velocity Level in VdB relative to 10<sup>-6</sup> inches/second

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



# **3 REGULATORY SETTING**

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

# 3.1 FEDERAL REGULATIONS

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under Title 40 of the Code of Federal Regulations, Part 205, Subpart B. (10) The federal truck pass-by noise standard is 80 dBA at 50 feet from the vehicle pathway centerline, under specified test procedures. These controls are implemented through regulatory controls on truck manufacturers. There are no comparable standards for vibration, which tend to be specific to the roadway surface, the vehicle load, and other factors.

In 1972, the Noise Control Act (42 U.S.C. Section 4901 et seq.) was passed by Congress to promote noise environments in support of public health and welfare. It also established the U.S. Environmental Protection Agency (USEPA) Office of Noise Abatement and Control to coordinate federal noise control activities. The USEPA established guidelines for noise levels that would be considered safe for community exposure without the risk of adverse health or welfare effects. The USEPA found that to prevent hearing loss over the lifetime of a receiver, the yearly average L<sub>eq</sub> should not exceed 70 dBA, and the Ldn should not exceed 55 dBA in outdoor activity areas or 45 dBA indoors to prevent interference and annoyance. However, in 1982, the USEPA phased out the office's funding as part of a shift in federal noise control policy to transfer the primary responsibility of regulating noise to state and local governments.

### **3.2** 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). (11) 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.



### 3.3 MARCH JPA NOISE/AIR QUALITY ELEMENT

The adopted March JPA General Plan Noise/Air Quality Element identifies several goals and policies to protect and enhance the quality of life for those who live and work in the March JPA jurisdiction. (12) The Noise Element provides policy guidance which addresses the generation, mitigation, avoidance, and the control of excessive noise. The adopted March JPA General Plan includes the following goals in the Noise/Air Quality Element:

- *1 Ensure that land uses are protected from excessive and unwanted noise.*
- 2 Minimize incompatible noise level exposures throughout the Planning Area, and where possible, mitigate the effect of noise incompatibilities to provide a safe and health environment.
- 3 Work toward the reduction of noise impacts from vehicular traffic, and aviation and rail operations.

The noise policies specified in the March JPA Noise/Air Quality Element provide the guidelines necessary to satisfy these goals. The policies are provided below:

- Policy 1.1 Establish acceptable limits of noise for various land uses throughout the March JPA Planning Area. Future development that could increase ambient noise levels shall be required to mitigate the anticipated noise increase, to the extent possible.
- Policy 1.2 Noise sensitive uses (such as schools, libraries, hospitals, medical facilities, residential uses, etc.) shall be discouraged in areas where noise levels exceed acceptable limits.
- Policy 1.3 Encourage good acoustical design in new construction.
- Policy 1.4 Provide buffer areas between noise sources and other developments, where practical.
- Policy 2.1 Avoid placing noise sensitive land uses in proximity to areas devoted to noise generating facilities such as areas of aviation related activities, industrial parks, transportation facilities, and other noise generating land uses.
- Policy 2.2 Noise generating facilities shall be located in areas with compatible noise generating land uses (i.e., airport noise contour areas) to minimize land use incompatibilities, noise abatement and mitigation measures needed.
- Policy 2.3 Noise sensitive land uses shall not be located in areas influenced by noise generating land uses, in particular the noise contours associated with the joint use airfield, unless appropriate mitigation is utilized.
- Policy 2.4 March JPA shall evaluate noise sensitivity and noise generation when considering land use Projects and transportation improvement Projects, and where appropriate mitigation measures shall be employed.
- Policy 2.5 March JPA shall utilize and comply with the CALTRANS standards for noise compatibility for aviation generated noise to proposed land use development.
- Policy 3.1 Include mitigating measures such as landscaping, berming and site orientation, in the design of Projects located near noise generating sources such as arterial roadways.
- Policy 3.2 Coordinate with adjacent cities and county agencies for noise abatement.
- Policy 3.3 Adhere to the adopted AICUZ and Comprehensive Land Use Plan standards and promote the use of newer and quieter aircraft and support equipment.
- Policy 3.4 Where appropriate, noise mitigation measures shall be incorporated in the design and approval of development on property located adjacent to aviation and rail facilities.
- Policy 3.5 Where appropriate, development in areas adjacent to freeways, arterial streets, and other noise source shall be designed to reduce the potential for noise impacts.



- *Policy 3.6 Regulate the use of local streets by trucks, trailers, and construction vehicles, to the extent possible.*
- Policy 3.7 Limit trucking operations to appropriate routes, times and speeds.
- Policy 3.8 Appropriate muffling systems for construction equipment and operations shall be required, as necessary.
- Policy 3.9 March JPA shall encourage and facilitate the use of mass transit services and alternative transportation systems to minimize dependence of the automobile within the Planning Area, thereby minimizing the level of noise generated by surface transportation.

### **3.4 OPERATIONAL NOISE STANDARDS**

To analyze noise impacts originating from a designated fixed location or private property such as the West Campus Upper Plateau Project, stationary-source (operational) noise such as the expected loading dock activity, roof-top air conditioning, trash enclosure activity, parking lot vehicle movements, truck movements and park activities are typically evaluated against standards established under a jurisdiction's Municipal Code. Although the Project site is located within the March JPA, noise-sensitive receivers potentially impacted by operational noise activities are also located in the City of Riverside. Therefore, to accurately describe the potential Project-related operational noise level contributions, this analysis presents the appropriate operational noise standards for each jurisdiction adjacent to the Project site. The March JPA, and the City of Riverside operational noise level standards are shown on Table 3-1.

### 3.4.1 MARCH JPA OPERATIONAL NOISE STANDARDS

The March JPA Development Code, Chapter 9.10 *Performance Standards*, Section 9.10.140 identifies the exterior stationary-source noise level standards for ALL commercial and industrial land uses. Based on Section 9.10.140 of the Development Code, the exterior noise level shall not exceed 55 dBA  $L_{eq}$  at any time beyond the boundaries of the property. (13) Chapter 9.10 of the March JPA Development Code is included in Appendix 3.1.

### 3.4.2 CITY OF RIVERSIDE OPERATIONAL NOISE STANDARDS

To control unnecessary, excessive and/or annoying noise, the City of Riverside has adopted exterior sound level limits in the Noise Control section (Title 7) of the Municipal Code. Title 7 outlines exterior and interior noise level standards for affected land uses. Title 7 relies on the use of percentile noise descriptors to ensure that the duration of the noise source is fully considered. However, due to the relatively constant intensity of the Project noise activities, the  $L_{50}$  or average  $L_{eq}$  noise level metrics best describe the Project related operational noise source activities. The  $L_{eq}$  noise level metric accounts for noise fluctuations over time by averaging the louder and quieter events and giving more weight to the louder events. In addition, due to the mathematical relationship between the median ( $L_{50}$ ) and the mean ( $L_{eq}$ ), the  $L_{eq}$  will always be larger than or equal to the  $L_{50}$ . The more variable the noise becomes, the larger the  $L_{eq}$  becomes in comparison to the  $L_{50}$ . Therefore, this noise study conservatively relies on the average  $L_{eq}$  sound level limits to describe the Project noise levels.



For noise-sensitive residential properties, Table 7.25.010A identifies exterior noise standards for the daytime (7:00 a.m. to 10:00 p.m.) hours of 55 dBA  $L_{50}$  and 45 dBA  $L_{50}$  during the nighttime (10:00 p.m. to 7:00 a.m.) hours as shown on Table 3-1. The City of Riverside Municipal Code Title 7 Noise Control section is included in Appendix 3.2.

			lards (dBA) <sup>1</sup>	s (dBA) <sup>1</sup>		
Land Use	Time Period	L <sub>50</sub> (30 mins)	L <sub>25</sub> (15 mins)	L <sub>8</sub> (5 mins)	L <sub>2</sub> (1 min)	L <sub>max</sub> (0 min)
Decidential	Daytime	55	60	65	70	75
Residential	Nighttime	45	50	55	60	65

#### TABLE 3-1: EXTERIOR NOISE STANDARDS

<sup>1</sup> City of Riverside Municipal Code, Title 7 Noise Control, Section 7.25.010 (A). Section 7.25.010 (B) indicates that if the existing ambient noise level already exceeds any of the exterior noise level limit categories, then the standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. The percent noise level is the level exceeded "n" percent of the time during the measurement period.  $L_{50}$  is the noise level exceeded 50% of the time. "Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Section 7.25.010(A) indicates that it is unlawful for any person to cause or allow the creation of any noise which exceeds the following:

- 1. The exterior noise standard of the applicable land use category up to 5 dBA for a cumulative period of 30 minutes in any hour ( $L_{50}$ ); or
- 2. The exterior noise standard of the applicable land use category, plus 5 dBA, for a cumulative period of more than 15 minutes in any hour  $(L_{25})$ ; or
- 3. The exterior noise standard of the applicable land use category, plus 10 dBA, for a cumulative period of more than 5 minutes in any hour ( $L_8$ ); or
- 4. The exterior noise standard of the applicable land use category, plus 15 dBA, for a cumulative period of more than 1 minute in any hour  $(L_2)$ .
- 5. The exterior noise standard for the applicable land use category, plus 20 dBA or the maximum measured ambient noise level, for any period of time  $(L_{max})$ .

### **3.5 CONSTRUCTION NOISE STANDARDS**

To analyze noise impacts originating from the construction of the Project, noise from construction activities is typically limited to the hours of operation established under a jurisdiction's Code. To accurately describe the potential Project-related construction noise level contributions to the existing noise environment, this analysis presents the appropriate construction noise standards for each jurisdiction adjacent to the Project site including: the March JPA, and the City of Riverside. However, the permitted hours of construction for the March JPA are the only applicable hour restrictions for the Project since the construction activity will be within the March JPA jurisdiction.



### 3.5.1 MARCH JPA CONSTRUCTION NOISE STANDARDS

The March JPA Development Code, Section 9.10.140, states that outdoor construction and grading activities, including the operation of any tools or equipment associated with construction, drilling, repair, alteration, grading/grubbing or demolition work within 500 feet of the property line of a residential use, shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday and between 5:00 p.m. and 8:00 a.m. on Saturdays or at any time on Sunday or a Federal Holiday. The March JPA Development Code construction noise standards are shown on Table 3-2 and included in Appendix 3.1.

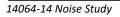
### 3.5.2 CITY OF RIVERSIDE CONSTRUCTION NOISE STANDARDS

The City of Riverside Municipal Code, Section 7.35.020[G], states that construction activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays, with no activities allowed on Sundays or federal holidays. (14) The land uses in the Project study area with the potential to be impacted by Project-related construction noise levels include noise-sensitive residential land use. Based on the City of Riverside Municipal Code, Table 7.25.010A *Exterior Noise Standards*, residential land uses have an anytime noise level standard of 75 dBA L<sub>max</sub> during the daytime hours, and 65 dBA L<sub>max</sub> during the nighttime hours for construction noise levels. The City of Riverside Municipal Code construction noise standards are shown on Table 3-2 and included in Appendix 3.2.

### 3.5.3 COUNTY OF RIVERSIDE CONSTRUCTION NOISE STANDARDS

Section 9.52.020[I] of the County's Noise Regulation ordinance, provided in Appendix 3.3, indicates that noise associated with any private construction activity located within one-quarter of a mile from an inhabited dwelling is considered exempt between the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May. (15) Neither the County's General Plan nor County Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or periodic noise increase*.

To allow for a quantified determination of what the Noise Regulation Ordinance constitutes as noise that *may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life* due to Project construction activity, relevant quantified stationary source noise standards established in the General Plan, Policy N 4.1, are used in this analysis to assess the Project construction noise levels at nearby sensitive receivers. Therefore, the daytime noise level standard of 65 dBA L<sub>eq</sub> and nighttime noise level standard of 45 dBA L<sub>eq</sub> are used to evaluate the potential Project-related construction noise impacts. (16)





Jurisdiction	Land Use	Permitted Hours of Construction Activity	Noise Level ceiving Use <sup>1</sup>	
	030		Daytime	Nighttime
March JPA <sup>2</sup>	n/a	7:00 a.m. to 7:00 p.m.	n,	/a
City of Riverside <sup>3</sup>	Residential	7:00 a.m. to 7:00 p.m. on weekdays; 8:00 a.m. to 5:00 p.m. on Saturdays; no work on Sundays or federal holidays	75 dBA L <sub>max</sub>	65 dBA L <sub>max</sub>
County of Riverside <sup>4</sup>	Residential	6:00 a.m. to 6:00 p.m. June to September; 7:00 a.m. to 6:00 p.m. October to May	65 dBA L <sub>eq</sub>	45 dBA L <sub>eq</sub>

#### TABLE 3-2: CONSTRUCTION NOISE STANDARDS

<sup>1</sup> Thresholds based on the City of Riverside and County of Riverside noise level standard for non-transportation noise sources (Table 3-1).

<sup>2</sup> March Joint Powers Authority, Development Code, Chapter 9.10 Performance Standards, Section 9.10.030 (Appendix 3.1).

<sup>3</sup> City of Riverside Municipal Code, Section 7.35.010[B][5] (Appendix 3.2).

<sup>4</sup> County of Riverside Municipal Code, Section 9.52.020[I] (Appendix 3.3).

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

### **3.6 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. (8) 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. Occasionally large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity.

The March JPA and the City of Riverside General Plans, Development Code, and Municipal Code do not identify specific vibration level standards. Therefore, the impacts due to vibration are assessed based on vibration level limits identified in the County of Riverside General Plan Noise Element. Vibration levels with peak particle velocity (PPV) of 0.0787 inches per second are considered readily perceptible and PPV above 0.1968 in/sec are considered annoying to people in buildings. Further, County of Riverside General Plan Policy 16.3 identifies a motion velocity perception threshold for vibration due to passing trains of 0.01 inches per second (in/sec) over the range of one to 100 Hz (16). For the purposes of this analysis, the perception threshold of 0.01 in/sec shall be used to assess the potential impacts due to Project construction at nearby sensitive receiver locations. The vibration standards are shown on Table 3-3.

Typically, the human response at the perception threshold for vibration includes annoyance in residential areas as previously shown on Exhibit 2-B, when vibration levels expressed in vibration decibels (VdB) approach 75 VdB. The County of Riverside, however, identifies a vibration perception threshold of 0.01 in/sec. For vibration levels expressed in velocity, the human body responds to the average vibration amplitude often described as the root-mean-square (RMS). The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a one-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to reduce the range of numbers used to describe human response to vibration. Therefore, the vibration standard of 0.01 in/sec in RMS



velocity levels is used in this analysis to assess the human perception of vibration levels due to Project-related construction activities. The County of Riverside General Plan Policy 16.3 vibration perception threshold of 0.01 RMS in/sec was intended to control perceptible ground vibration for very low range of noise frequency (0 to 100 Hertz) due to passing trains. This policy is more restrictive than the vibration thresholds outlined by the FTA to control construction vibration levels. (8)

Jurisdiction	Root-Mean-Square (RMS) Velocity (in/sec)
March JPA	n/a
City of Riverside	n/a
County of Riverside <sup>1</sup>	0.01

TABLE 3-3: VIBRATION ANNOYANCE STANDARDS

<sup>1</sup> Source: County of Riverside General Plan Noise Element, Policy N 16.3.

"n/a" = The General Plan, Development, and Municipal Codes do not identify specific vibration level standards.

### 3.7 MARCH AIR RESERVE BASE/INLAND PORT AIRPORT LAND USE COMPATIBILITY

The March Air Reserve Base/Inland Port Airport (MARB/IPA) is located less than one mile east of the Project site. The *Riverside County Airport Land Use Compatibility Plan Policy Document* (RC ALUCP) includes the policies for determining the land use compatibility of the Project. Policy 4.1.5 *Noise Exposure for Other Land Uses* of the RC ALUCP requires that land uses, demonstrate compatibility with the acceptable noise levels on Table 2B. The Table 2B *Supporting Compatibility Criteria: Noise* matrix is shown on Exhibit 3-B and indicates that the Project's mixed use, business park and industrial land uses (service commercial, wholesale trade, warehousing, light industrial) experience *clearly acceptable* exterior noise levels below 60 dBA CNEL. *Normally acceptable* noise levels at industrial land uses range from 65 to 70 dBA CNEL. (17)

According to the Supporting Compatibility Criteria: Noise matrix, the Project's Park use will experience clearly acceptable exterior noise levels below 55 dBA CNEL, normally acceptable noise levels from 55 to 65 dBA CNEL and marginally acceptable noise levels above 65 dBA CNEL. For marginally acceptable noise levels: the indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the conditions that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged. (17)

The noise contour boundaries used to determine the potential aircraft-related noise impacts at the Project site are found on Figure 6-9 of the March Air Reserve Base 2018 Final Air Installations Compatible Uses Zones Study and are presented on Exhibit 3-C of this report. Based on the 2018 noise level contours for the MARB/IPA, the Project development area is located mostly between the 60 to 65 dBA CNEL noise level contour boundaries and is considered *normally acceptable*. In addition, the outdoor activities at the business park and mixed-use land uses within the Project



site are expected to be minimal and include employees traveling from their vehicles to the office buildings within the site. Therefore, based on the RC ALUCP compatibility criteria, *conventional construction methods will eliminate noise intrusions upon indoor activities and thus is allowed under the RC ALUCP*. (17)



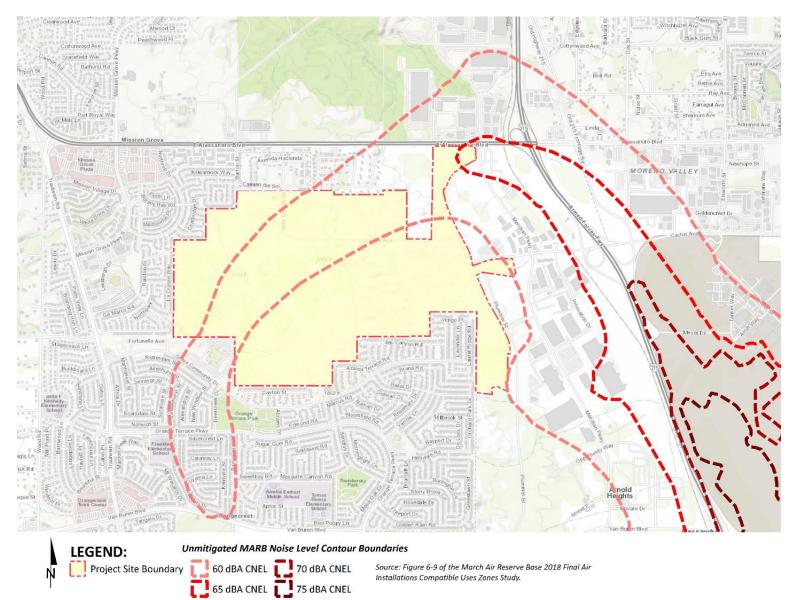
	CNEL (dB)				
Land Use Category	50–55	55–60	60–65	65–70	70–75
Residential *					
single-family, nursing homes, mobile homes	++	0	_		
multi-family, apartments, condominiums	++	+	0		
Public					
schools, libraries, hospitals	+	о	_		
churches, auditoriums, concert halls	+	ο	0	_	
transportation, parking, cemeteries	++	++	++	+	0
Commercial and Industrial					
offices, retail trade	++	+	0	0	_
service commercial, wholesale trade, warehousing, light industrial	++	++	+	ο	0
general manufacturing, utilities, extractive industry	++	++	++	+	+
Agricultural and Recreational					
cropland	++	++	++	++	+
livestock breeding	++	+	0	0	-
parks, playgrounds, zoos	++	+	+	0	_
golf courses, riding stables, water recreation	++	++	+	0	0
outdoor spectator sports	++	+	+	0	-
amphitheaters	+	0	_		

#### EXHIBIT 3-B: RC ALUCP SUPPORTING COMPATIBILITY CRITERIA: NOISE

Land Use Acceptability		Interpretation/Comments		
++	Clearly Acceptable	The activities associated with the specified land use can be carried out with essentially no interference from the noise exposure.		
+	Normally Acceptable	Noise is a factor to be considered in that slight interference with outdoor activities may occur. Conventional construction methods will eliminate most noise intrusions upon indoor activities.		
0	Marginally Acceptable	The indicated noise exposure will cause moderate interference with outdoor activities and with indoor activities when windows are open. The land use is acceptable on the conditions that outdoor activities are minimal and construction features which provide sufficient noise attenuation are used (e.g., installation of air conditioning so that windows can be kept closed). Under other circumstances, the land use should be discouraged.		
-	Normally Unacceptable	Noise will create substantial interference with both outdoor and indoor activities. Noise intrusion upon indoor activities can be mitigated by requiring special noise insulation construction. Land uses which have conventionally constructed structures and/or involve outdoor activities which would be disrupted by noise should generally be avoided.		
	Clearly Unacceptable	Unacceptable noise intrusion upon land use activities will occur. Adequate structural noise insulation is not practical under most circumstances. The indicated land use should be avoided unless strong overriding factors prevail and it should be prohibited if outdoor activities are involved.		

\* Subtract 5 dB for low-activity outlying airports (Chiriaco Summit and Desert Center) Source: Riverside County Airport Land Use Compatibility Plan, Table 2B.





#### EXHIBIT 3-C: MARB/IPA FUTURE AIRPORT NOISE CONTOURS



# 4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

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

### 4.1 Noise Level Increases (Threshold A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (18) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment.

### 4.1.1 SUBSTANTIAL PERMANENT NOISE LEVEL INCREASES

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (19) 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 ( $L_{eq}$ ).

The FICON guidance provides an established source of criteria to assess the impacts of substantial permanent increase in ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived



acceptance are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (20 p. 2\_48).

### 4.1.2 SUBSTANTIAL TEMPORARY OF PERIODIC NOISE LEVEL INCREASES

To control the noise-generating construction activities, the temporary noise level increases over the existing ambient conditions must be considered under CEQA Significance Threshold A. Therefore, the Caltrans *Traffic Noise Analysis Protocol* 12 dBA  $L_{eq}$  *substantial* noise level increase threshold is used in this analysis to assess temporary noise level increases. (21) In California a substantial noise increase is considered to occur when the project's predicted noise level exceeds the existing noise level by 12 dBA or more. The use of 12 dB was established in California many years ago and is based on the concept that a 10 dB increase generally is perceived as a doubling of loudness. (2 pp. 3-2)

If the Project-related construction noise levels generate a temporary noise level increase above the existing ambient noise levels of up to 12 dBA  $L_{eq}$ , then the Project construction noise level increases will be considered a potentially significant impact. Although the Caltrans recommendations were specifically developed to assess traffic noise impacts, the 12 dBA  $L_{eq}$ substantial noise level increase threshold is used in California to address the temporary noise level increases with the potential to exceed existing conditions. (21) However, the construction activities associated with the West Campus Upper Plateau Project are likely to take several years and cannot reasonably be considered as a short-term temporary noise impact. Therefore, due to the expected duration of construction, a "barely-perceptible" 5 dBA noise level increase threshold has been used to assess the potential impacts associated with the construction related noise level increases.

# 4.2 VIBRATION (THRESHOLD B)

As described in Section 3.6, the vibration impacts originating from the construction of the West Campus Upper Plateau Project are appropriately evaluated against the thresholds of significance outlined in the County of Riverside General Plan (16). These guidelines identify a motion velocity perception threshold for vibration due to passing trains of 0.01 inches per second (in/sec) over the range of one to 100 Hz, which is used in this noise study to assess potential human response (annoyance) due to Project construction vibration levels.

# 4.3 CEQA Guidelines Not Further Analyzed (Threshold C)

The closest airport which would require additional noise analysis under CEQA Significance Criteria C is the March Air Reserve Base/Inland Port Airport (MARB/IPA) which is located less than one mile east of the Project site. As previously indicated in Section 3.7, the noise contour boundaries of MARB/IPA are presented on Exhibit 3-C of this report and shows that the Project's mixed use, business park, industrial and park land uses are considered *normally acceptable* land use since the development area is located mostly between the 60 to 65 dBA CNEL contour. Therefore, the Project impacts are considered *less than significant*, and no further noise analysis is provided under CEQA Significance Criteria 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.

Australia	Land Use	Jurisdiction	Condition(s)	Significance Criteria	
Analysis				Daytime	Nighttime
		All	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
	Noise- Sensitive <sup>1</sup>		If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
Off-Site Traffic	Sensitive		If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
Traffic	Non-Noise- Sensitive <sup>1</sup>	All	If ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase	
			If ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase	
	Noise-	March JPA <sup>2</sup>	Noise Level Threshold	55 dBA Leq	
Onevetienel		City of Riverside <sup>3</sup>	Exterior Noise Level Standard	55 dBA L <sub>eq</sub>	45 dBA L <sub>eq</sub>
Operational	Sensitive		If ambient is < 60 dBA $L_{eq}$	≥ 5 dBA L <sub>eq</sub> Project increase	
		All <sup>1</sup>	If ambient is 60 - 65 dBA $L_{eq}$	≥ 3 dBA L <sub>eq</sub> Project increase	
			If ambient is > 65 dBA $L_{eq}$	$\geq$ 1.5 dBA L <sub>eq</sub> Project increase	
		March JPA	Permitted hours between 7:00 a.m. to 7:00 p.m. <sup>4</sup>		
	on Noise- Sensitive	City of Riverside <sup>5</sup>	Exempt from the exterior noise level standards between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday.		
Construction		City of Riverside	Noise Level Threshold <sup>6</sup>	75 dBA L <sub>max</sub>	65 dBA L <sub>max</sub>
		County of Riverside	Noise Level Threshold <sup>7</sup>	65 dBA L <sub>eq</sub>	45 dBA L <sub>eq</sub>
		All	Noise Level Increase <sup>8</sup>	5 dBA L <sub>eq</sub>	n/a
			Vibration Annoyance Threshold <sup>9</sup>	0.01 RMS (in/sec)	

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

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

<sup>2</sup> March Joint Powers Authority, Development Code, Chapter 9.10 Performance Standards, Section 9.10.140 (Appendix 3.1).

<sup>3</sup> City of Riverside Municipal Code, Title 7 Noise Control, Table 7.25.010A Exterior Noise Standards (Appendix 3.2).

<sup>4</sup> March Joint Powers Authority, Development Code, Chapter 9.10 Performance Standards, Section 9.10.140 (Appendix 3.1).

<sup>5</sup> City of Riverside Municipal Code Section 7.35.020(G).

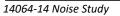
<sup>6</sup> City of Riverside Municipal Code, Section 7.35.010[B][5] (Appendix 3.2).

<sup>7</sup> Threshold based on the County of Riverside noise level standard for non-transportation noise sources (Table 3-1).

<sup>8</sup> FHWA - Highway Traffic Noise Analysis and Abatement Policy and Guidance

<sup>9</sup> County of Riverside General Plan Noise Element, Policy N 16.3.

"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 eight locations within the public right-of-way throughout 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 Thursday July 22<sup>nd</sup>, 2021. Appendix 5.1 includes study area photos.

# 5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (22)

# 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. Therefore, the noise level measurement locations accurately describe the background ambient noise levels necessary to assess the projects incremental noise contributions.

## 5.3 NOISE MEASUREMENT RESULTS

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

Location <sup>1</sup>	Description	Noise	Average Level L <sub>eq</sub> ) <sup>2</sup>	
		Daytime	Nighttime	
L1	Located north of the Project site near single-family residence at 7602 Greenock Way.	52.7	50.3	
L2	Located north of the Project site near single-family residence at 14210 Rancho Vista Road.	51.8	49.0	
L3	Located north of the Project site near single-family residence at 20630 Camino Del Sol.	50.0	46.5	
L4	Located south of the Project site near single-family residence at 20870 Indigo Point.	48.4	45.0	
L5	Located south of the Project site near single-family residence at 8256 Gardenia Vista Drive.	49.0	45.6	
L6	Located south of the Project site near single-family residence at 8360 Clover Creek Road.	61.5	56.6	
L7	Located south of the Project site near The Grove Community Church at 19900 Grove Community Drive.	51.6	47.5	
L8	Located west of the Project site near single-family residence at 8079 La Crosse Way.	47.3	43.9	

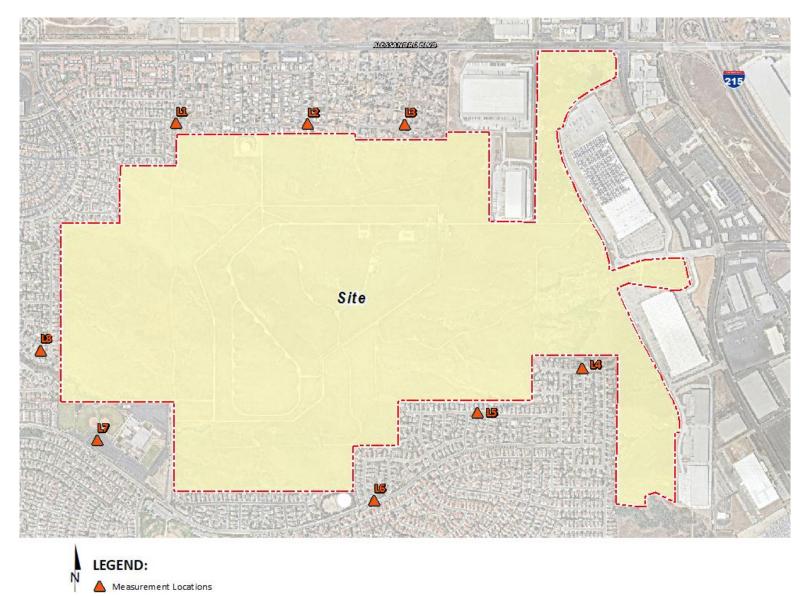
### TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

<sup>1</sup> See Exhibit 5-A for the noise level measurement locations.

<sup>2</sup> Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2. "Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour.





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



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 the *State Land Use Compatibility Guidelines*, all transportation related noise levels are presented in terms of the 24-hour CNELs.

### 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. (23) This methodology is commonly used to describe the off-site traffic noise levels throughout California and is consistent with the March JPA General Plan Noise Element.

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. (24) 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. (25)

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

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 19 off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the Moreno Valley, City of Riverside and March JPA General Plan, and the posted vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on *West Campus Upper Plateau Traffic Analysis by Urban Crossroads, Inc.* for the following traffic scenarios. (26)

- 1. Existing (2021) Conditions (E)
- 2. Existing + Project (E+P) Conditions
- 3. Existing plus Ambient Growth (EA)
- 4. Existing plus Ambient Growth plus Project (EAP)
- 5. Opening Year Cumulative (2028) Without Project Conditions (OYC)
- 6. Opening Year Cumulative (2028) With Project Conditions (OYCP)
- 7. Horizon Year (2045) Without Project Conditions
- 8. Horizon Year (2045) With Project Conditions



The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent land use, without and with project ADT traffic volumes from the Project traffic study. To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix.

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-8 show the vehicle mixes used for the with Project traffic scenarios. 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.



ID	Roadway	Segment	Classification <sup>1</sup>	Receiving Land Use <sup>2</sup>	Distance from Centerline to Receiving Land Use (Feet) <sup>3</sup>	Vehicle Speed (mph)
1	Alessandro Blvd.	s/o Arlington Av.	Arterial	Sensitive	60'	50
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Arterial	Sensitive	60'	50
3	Trautwein Rd.	n/o Van Buren Blvd.	Arterial	Sensitive	44'	50
4	Barton St.	n/o Van Buren Blvd.	Local	Sensitive	33'	30
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Arterial	Non-Sensitive	55'	45
6	Meridian Pkwy.	n/o Van Buren Blvd.	Secondary Highway	Non-Sensitive	56'	45
7	Day St.	n/o Alessandro Blvd.	Minor Arterial	Sensitive	44'	25
8	Frederick St.	n/o Cactus Av.	Minor Arterial	Non-Sensitive	44'	40
9	Alessandro Blvd.	w/o Barton St.	Arterial	Sensitive	60'	55
10	Alessandro Blvd.	e/o Barton St.	Arterial	Sensitive	60'	55
11	Alessandro Blvd.	e/o Meridian Pkwy.	Arterial	Non-Sensitive	60'	45
12	Alessandro Blvd.	w/o Day St.	Divided Major Arterial	Sensitive	67'	45
13	Cactus Av.	e/o Meridian Pkwy.	Arterial/Urban Arterial Highway	Non-Sensitive	60'	45
14	Cactus Av.	w/o Elsworth St.	Divided Major Arterial	Non-Sensitive	67'	45
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Arterial	Sensitive	55'	45
16	Van Buren Blvd.	w/o Wood Rd.	Arterial	Sensitive	60'	50
17	Van Buren Blvd.	e/o Wood Rd.	Arterial	Sensitive	60'	50
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Arterial	Sensitive	60'	50
19	Van Buren Blvd.	e/o Meridian Pkwy.	Arterial	Non-Sensitive	60'	50

#### TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

<sup>1</sup> West Campus Upper Plateau Traffic Analysis, Urban Crossroads, Inc.

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

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

					Ave	erage Daily T	raffic Volum	es <sup>1</sup>		
ID	Roadway	Segment	Existing	; (2021)	Existing plus Ambient		Opening Year Cumulative (2028)		Horizon Year (2045)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Alessandro Blvd.	s/o Arlington Av.	51,552	53,547	59,217	61,212	62,119	64,114	72,525	74,521
2	Alessandro Blvd.	s/o Canyon Crest Dr.	48,548	51,541	55,767	58,760	62,261	65,254	72,851	75,845
3	Trautwein Rd.	n/o Van Buren Blvd.	19,731	20,064	22,665	22,998	33,567	33,900	39,015	39,348
4	Barton St.	n/o Van Buren Blvd.	3,375	4,040	3,877	4,542	5,685	6,350	6,716	7,381
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	13,087	13,855	15,033	15,801	16,647	17,415	19,473	20,241
6	Meridian Pkwy.	n/o Van Buren Blvd.	12,903	20,093	14,821	22,011	15,703	22,893	19,422	26,612
7	Day St.	n/o Alessandro Blvd.	9,913	10,579	11,387	12,053	12,893	13,559	15,094	15,759
8	Frederick St.	n/o Cactus Av.	10,147	10,812	11,656	12,321	12,508	13,173	14,646	15,311
9	Alessandro Blvd.	w/o Barton St.	42,275	46,599	48,561	52,885	49,805	54,129	58,590	62,914
10	Alessandro Blvd.	e/o Barton St.	42,360	46,351	48,659	52,650	50,399	54,390	59,226	63,217
11	Alessandro Blvd.	e/o Meridian Pkwy.	44,072	50,059	50,625	56,612	52,834	58,821	62,393	68,380
12	Alessandro Blvd.	w/o Day St.	26,874	28,205	30,870	32,201	36,990	38,321	43,210	44,540
13	Cactus Av.	e/o Meridian Pkwy.	19,011	35,724	21,838	38,551	21,888	38,601	28,137	44,850
14	Cactus Av.	w/o Elsworth St.	26,874	28,932	30,870	32,928	36,990	39,048	43,210	45,267
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	8,884	8,884	10,205	10,205	10,277	10,277	18,352	18,352
16	Van Buren Blvd.	w/o Wood Rd.	32,691	34,686	37,552	39,547	46,276	48,271	54,110	56,106
17	Van Buren Blvd.	e/o Wood Rd.	30,101	32,762	34,577	37,237	44,791	47,451	52,492	55,153
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	30,048	34,704	34,516	39,172	51,616	56,272	60,749	65,405
19	Van Buren Blvd.	e/o Meridian Pkwy.	33,413	35,281	38,381	40,249	81,701	83,569	95,267	97,135

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

<sup>1</sup> West Campus Upper Plateau Traffic Analysis, Urban Crossroads, Inc.



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

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

<sup>1</sup> Typical Southern California vehicle mix. 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 6-4: EXISTING VEHICLE MIX

Clossification		<b>Total % Traffic Flow</b>		Total
Classification	Autos	Medium Trucks	Heavy Trucks	TOLAI
All Segments	94.08%	2.20%	3.73%	100.00%

Based on an existing vehicle count taken at Meridian Parkway and Cactus Avenue (West Campus Upper Plateau Traffic Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth.

#### TABLE 6-5: EXISTING + PROJECT VEHICLE MIX

				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>
1	Alessandro Blvd.	s/o Arlington Av.	94.30%	2.11%	3.59%	100.00%
2	Alessandro Blvd.	s/o Canyon Crest Dr.	94.42%	2.07%	3.51%	100.00%
3	Trautwein Rd.	n/o Van Buren Blvd.	94.18%	2.16%	3.66%	100.00%
4	Barton St.	n/o Van Buren Blvd.	95.05%	1.84%	3.11%	100.00%
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	93.66%	2.08%	4.26%	100.00%
6	Meridian Pkwy.	n/o Van Buren Blvd.	95.17%	1.41%	3.41%	100.00%
7	Day St.	n/o Alessandro Blvd.	94.45%	2.06%	3.49%	100.00%
8	Frederick St.	n/o Cactus Av.	94.44%	2.06%	3.50%	100.00%
9	Alessandro Blvd.	w/o Barton St.	94.63%	1.99%	3.38%	100.00%
10	Alessandro Blvd.	e/o Barton St.	94.59%	2.01%	3.41%	100.00%
11	Alessandro Blvd.	e/o Meridian Pkwy.	94.79%	1.93%	3.28%	100.00%
12	Alessandro Blvd.	w/o Day St.	94.36%	2.09%	3.55%	100.00%
13	Cactus Av.	e/o Meridian Pkwy.	91.96%	1.17%	6.87%	100.00%
14	Cactus Av.	w/o Elsworth St.	94.29%	2.04%	3.67%	100.00%
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	94.08%	2.20%	3.73%	100.00%
16	Van Buren Blvd.	w/o Wood Rd.	94.42%	2.07%	3.51%	100.00%
17	Van Buren Blvd.	e/o Wood Rd.	94.56%	2.02%	3.42%	100.00%
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	94.87%	1.90%	3.23%	100.00%
19	Van Buren Blvd.	e/o Meridian Pkwy.	93.81%	2.08%	4.11%	100.00%



				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>
1	Alessandro Blvd.	s/o Arlington Av.	94.27%	2.13%	3.60%	100.00%
2	Alessandro Blvd.	s/o Canyon Crest Dr.	94.38%	2.08%	3.54%	100.00%
3	Trautwein Rd.	n/o Van Buren Blvd.	94.16%	2.17%	3.67%	100.00%
4	Barton St.	n/o Van Buren Blvd.	94.94%	1.88%	3.18%	100.00%
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	93.72%	2.09%	4.19%	100.00%
6	Meridian Pkwy.	n/o Van Buren Blvd.	95.08%	1.48%	3.44%	100.00%
7	Day St.	n/o Alessandro Blvd.	94.40%	2.08%	3.52%	100.00%
8	Frederick St.	n/o Cactus Av.	94.40%	2.08%	3.52%	100.00%
9	Alessandro Blvd.	w/o Barton St.	94.56%	2.02%	3.42%	100.00%
10	Alessandro Blvd.	e/o Barton St.	94.53%	2.03%	3.44%	100.00%
11	Alessandro Blvd.	e/o Meridian Pkwy.	94.70%	1.96%	3.33%	100.00%
12	Alessandro Blvd.	w/o Day St.	94.32%	2.11%	3.57%	100.00%
13	Cactus Av.	e/o Meridian Pkwy.	92.12%	1.24%	6.64%	100.00%
14	Cactus Av.	w/o Elsworth St.	94.26%	2.06%	3.68%	100.00%
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	94.08%	2.20%	3.73%	100.00%
16	Van Buren Blvd.	w/o Wood Rd.	94.38%	2.09%	3.54%	100.00%
17	Van Buren Blvd.	e/o Wood Rd.	94.50%	2.04%	3.46%	100.00%
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	94.78%	1.94%	3.28%	100.00%
19	Van Buren Blvd.	e/o Meridian Pkwy.	93.84%	2.09%	4.06%	100.00%

#### TABLE 6-6: EAP VEHICLE MIX



				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>
1	Alessandro Blvd.	s/o Arlington Av.	94.26%	2.13%	3.61%	100.00%
2	Alessandro Blvd.	s/o Canyon Crest Dr.	94.35%	2.10%	3.55%	100.00%
3	Trautwein Rd.	n/o Van Buren Blvd.	94.14%	2.18%	3.69%	100.00%
4	Barton St.	n/o Van Buren Blvd.	94.70%	1.97%	3.34%	100.00%
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	93.75%	2.10%	4.15%	100.00%
6	Meridian Pkwy.	n/o Van Buren Blvd.	95.04%	1.51%	3.45%	100.00%
7	Day St.	n/o Alessandro Blvd.	94.37%	2.09%	3.54%	100.00%
8	Frederick St.	n/o Cactus Av.	94.38%	2.09%	3.54%	100.00%
9	Alessandro Blvd.	w/o Barton St.	94.55%	2.02%	3.43%	100.00%
10	Alessandro Blvd.	e/o Barton St.	94.51%	2.04%	3.45%	100.00%
11	Alessandro Blvd.	e/o Meridian Pkwy.	94.68%	1.97%	3.35%	100.00%
12	Alessandro Blvd.	w/o Day St.	94.28%	2.12%	3.60%	100.00%
13	Cactus Av.	e/o Meridian Pkwy.	92.12%	1.25%	6.64%	100.00%
14	Cactus Av.	w/o Elsworth St.	94.23%	2.08%	3.69%	100.00%
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	94.08%	2.20%	3.73%	100.00%
16	Van Buren Blvd.	w/o Wood Rd.	94.32%	2.11%	3.57%	100.00%
17	Van Buren Blvd.	e/o Wood Rd.	94.41%	2.07%	3.52%	100.00%
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	94.57%	2.02%	3.42%	100.00%
19	Van Buren Blvd.	e/o Meridian Pkwy.	93.96%	2.15%	3.89%	100.00%

TABLE 6-7: OYC 2028 WITH PROJECT VEHICLE MIX



				With P	roject <sup>1</sup>	
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total <sup>2</sup>
1	Alessandro Blvd.	s/o Arlington Av.	94.24%	2.14%	3.63%	100.00%
2	Alessandro Blvd.	s/o Canyon Crest Dr.	94.31%	2.11%	3.58%	100.00%
3	Trautwein Rd.	n/o Van Buren Blvd.	94.13%	2.18%	3.69%	100.00%
4	Barton St.	n/o Van Buren Blvd.	94.61%	2.00%	3.39%	100.00%
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	93.79%	2.11%	4.09%	100.00%
6	Meridian Pkwy.	n/o Van Buren Blvd.	94.91%	1.60%	3.49%	100.00%
7	Day St.	n/o Alessandro Blvd.	94.33%	2.10%	3.57%	100.00%
8	Frederick St.	n/o Cactus Av.	94.33%	2.10%	3.56%	100.00%
9	Alessandro Blvd.	w/o Barton St.	94.48%	2.05%	3.47%	100.00%
10	Alessandro Blvd.	e/o Barton St.	94.45%	2.06%	3.49%	100.00%
11	Alessandro Blvd.	e/o Meridian Pkwy.	94.60%	2.00%	3.40%	100.00%
12	Alessandro Blvd.	w/o Day St.	94.25%	2.13%	3.61%	100.00%
13	Cactus Av.	e/o Meridian Pkwy.	92.39%	1.38%	6.23%	100.00%
14	Cactus Av.	w/o Elsworth St.	94.21%	2.10%	3.69%	100.00%
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	94.08%	2.20%	3.73%	100.00%
16	Van Buren Blvd.	w/o Wood Rd.	94.29%	2.12%	3.59%	100.00%
17	Van Buren Blvd.	e/o Wood Rd.	94.36%	2.09%	3.55%	100.00%
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	94.50%	2.04%	3.46%	100.00%
19	Van Buren Blvd.	e/o Meridian Pkwy.	93.98%	2.15%	3.87%	100.00%

TABLE 6-8: HY 2045 WITH PROJECT VEHICLE MIX



# 7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the West Campus Upper Plateau *Traffic Analysis* (26). Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

## 7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 to 7-8 present a summary of the exterior traffic noise levels for each traffic condition. Appendix 7.1 includes the traffic noise level contours worksheets.

ID	Deed	Road Segment		CNEL at Receiving	Distance to Contour from Centerline (Feet)		
	Road	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.1	208	448	966
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	77.8	200	431	928
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	75.8	107	230	495
4	Barton St.	n/o Van Buren Blvd.	Sensitive	65.8	RW	RW	80
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	72.9	86	186	401
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	71.9	75	162	350
7	Day St.	n/o Alessandro Blvd.	Sensitive	67.5	RW	65	140
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	71.3	RW	116	251
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.1	207	446	961
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.1	207	446	962
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.5	163	352	758
12	Alessandro Blvd.	w/o Day St.	Sensitive	74.8	139	300	645
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	72.9	93	201	433
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	74.8	139	300	645
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.3	67	144	310
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	76.1	154	331	713
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	75.8	145	313	675
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	75.8	145	313	674

### TABLE 7-1: EXISTING CONTOURS



ID Road	Baad	Sogmont	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)		
	коаа	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.2	155	335	721

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

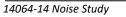
#### TABLE 7-2: EXISTING + PROJECT CONTOURS

ID	Road	Cognert	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
	Koau	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.2	210	452	974	
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	77.9	203	437	941	
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	75.8	107	231	497	
4	Barton St.	n/o Van Buren Blvd.	Sensitive	65.9	RW	RW	82	
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	73.5	95	204	440	
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	73.5	96	206	444	
7	Day St.	n/o Alessandro Blvd.	Sensitive	67.6	RW	65	141	
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	71.4	55	118	254	
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.2	212	457	985	
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.2	212	457	984	
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.7	168	362	779	
12	Alessandro Blvd.	w/o Day St.	Sensitive	74.8	140	303	652	
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	77.3	184	396	853	
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	75.0	145	312	671	
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.3	67	144	310	
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	76.2	156	335	723	
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	75.9	148	319	688	
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	76.0	150	324	697	
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.7	167	359	774	

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

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.



5	Road Segment Receiving		CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	Road	segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.7	228	492	1059
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	Sensitive 78.4		472	1017
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	76.4	117	252	543
4	Barton St.	n/o Van Buren Blvd.	Sensitive	66.4	RW	RW	88
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	73.6	95	204	440
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	72.5	83	178	383
7	Day St.	n/o Alessandro Blvd.	Sensitive	68.1	RW	71	153
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	71.9	59	128	275
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.7	227	489	1054
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.7	227	490	1055
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	77.1	179	386	831
12	Alessandro Blvd.	w/o Day St.	Sensitive	75.4	152	329	708
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	73.5	102	220	475
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	75.4	152	329	708
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.9	73	158	340
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	76.7	168	363	782
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	76.4	159	343	740
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	76.4	159	343	739
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.8	170	367	791

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

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

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

#### TABLE 7-4: EAP CONTOURS

ID	Road Segment Receiving		CNEL at Receiving	Distance to Contour from Centerline (Feet)			
	Road	segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.8	230	495	1067
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	78.5	222	478	1030
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	76.4	117	253	544
4	Barton St.	n/o Van Buren Blvd.	Sensitive	66.5	RW	RW	90
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	74.1	103	221	477
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	73.9	102	220	475
7	Day St.	n/o Alessandro Blvd.	Sensitive	68.2	RW	72	154



ID	Road Segment		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
	KUdu	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	72.0	60	129	278	
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.8	232	500	1077	
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.8	232	500	1076	
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	77.3	183	395	852	
12	Alessandro Blvd.	w/o Day St.	Sensitive	75.4	154	331	714	
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	77.5	190	410	883	
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	75.6	158	340	733	
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.9	73	158	340	
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	76.8	170	367	791	
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	76.5	162	349	753	
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	76.6	164	353	762	
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	77.2	181	391	842	

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

#### TABLE 7-5: OYC 2028 WITHOUT PROJECT CONTOURS

15	Road Segment Receiving		CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	Sensitive 78.9		507	1093
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	78.9	236	508	1095
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	78.1	152	327	705
4	Barton St.	n/o Van Buren Blvd.	Sensitive	68.0	RW	RW	113
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	74.0	102	219	471
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	72.8	86	185	399
7	Day St.	n/o Alessandro Blvd.	Sensitive	68.7	RW	77	167
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	72.2	62	134	288
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.8	231	497	1071
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.8	233	501	1080
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	77.3	184	397	855
12	Alessandro Blvd.	w/o Day St.	Sensitive	76.1	172	371	798
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	73.5	102	221	475
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	76.1	172	371	798
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.9	74	159	342
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	77.6	194	417	898



ID	Receiving		CNEL at Receiving	Distance to Contour from Centerline (Feet)			
U	Road	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	77.5	189	408	879
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	78.1	208	449	966
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	80.1	282	607	1308

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

#### TABLE 7-6: OYC 2028 WITH PROJECT CONTOURS

ID	Road Segment Receiving		CNEL at Receiving	Distance to Contour from Centerline (Feet)			
	коас	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	79.0	237	511	1101
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive 79.0		238	514	1107
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	78.1	152	328	707
4	Barton St.	n/o Van Buren Blvd.	Sensitive	68.1	RW	RW	115
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	74.5	109	235	507
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	74.1	105	227	488
7	Day St.	n/o Alessandro Blvd.	Sensitive	68.7	RW	78	168
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	72.3	63	135	291
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.9	236	508	1094
10	Alessandro Blvd.	e/o Barton St.	Sensitive	79.0	237	511	1101
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	77.5	189	406	875
12	Alessandro Blvd.	w/o Day St.	Sensitive	76.2	173	373	804
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	77.5	190	410	884
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	76.3	177	382	822
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.9	74	159	342
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	77.7	195	421	907
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	77.6	192	414	891
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	78.2	212	458	986
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	80.3	291	626	1348

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

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.



	Road Segment Receiving		CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	коао	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	79.6	261	563	1212
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	79.6	262	564	1216
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	78.7	168	362	779
4	Barton St.	n/o Van Buren Blvd.	Sensitive	68.8	RW	59	127
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	74.7	113	243	523
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	73.7	99	213	459
7	Day St.	n/o Alessandro Blvd.	Sensitive	69.4	RW	86	185
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	72.9	69	149	320
9	Alessandro Blvd.	w/o Barton St.	Sensitive	79.5	257	554	1194
10	Alessandro Blvd.	e/o Barton St.	Sensitive	79.5	259	558	1203
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	78.0	206	444	956
12	Alessandro Blvd.	w/o Day St.	Sensitive	76.8	191	411	886
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	74.6	121	261	562
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	76.8	191	411	886
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	74.4	108	233	503
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	78.3	215	463	997
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	78.2	211	454	977
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	78.8	232	500	1077
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	80.7	312	673	1449

TABLE 7-7: HY 2045 WITHOUT PROJECT CONTOURS

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

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

#### TABLE 7-8: HY 2045 WITH PROJECT CONTOURS

	Road Segment Receiving		CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	коао	Segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	79.6	263	566	1220
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	79.7	264	570	1227
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	78.7	168	362	781
4	Barton St.	n/o Van Buren Blvd.	Sensitive	68.8	RW	60	128
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	75.1	120	258	557
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	74.8	117	252	544
7	Day St.	n/o Alessandro Blvd.	Sensitive	69.4	RW	86	186



ID	Road Segment		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
	Road	segment	Land Use <sup>1</sup>	Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	73.0	70	150	323	
9	Alessandro Blvd.	w/o Barton St.	Sensitive	79.6	262	564	1216	
10	Alessandro Blvd.	e/o Barton St.	Sensitive	79.6	263	567	1223	
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	78.2	210	452	975	
12	Alessandro Blvd.	w/o Day St.	Sensitive	76.9	192	414	891	
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	78.0	204	440	949	
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	77.0	196	421	908	
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	74.4	108	233	503	
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	78.4	217	467	1006	
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	78.3	213	459	989	
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	78.9	236	509	1096	
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	80.9	320	690	1488	

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

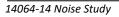
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

### 7.2 EXISTING + PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report to fully analyze all the existing traffic scenarios identified in the *West Campus Upper Plateau Traffic Analysis*. This scenario is analyzed to show the potential impacts of the Project using the existing baseline consistent with the Project Traffic Analysis. Table 7-1 shows the Existing conditions CNEL noise levels. The Existing exterior noise levels are expected to range from 65.8 to 78.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing + Project conditions will range from 65.9 to 78.2 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level impacts will range from 0.0 to 4.4 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, one of the study area roadway segments is shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project conditions. The segment is described below.

• Cactus Avenue east of Meridian Parkway (Segment #13).

Section 7.9 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience noise level increases under Existing + Project conditions that would exceed the established thresholds of significance.





ID	Road Segment	Receiving	CNEL at Receiving Land Use (dBA) <sup>1</sup>			Incremental Noise Level Increase Threshold <sup>2</sup>		
			Land Use <sup>1</sup>	No Project	With Project	Project Addition	Limit	Exceeded?
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.1	78.2	0.1	1.5	No
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	77.8	77.9	0.1	1.5	No
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	75.8	75.8	0.0	1.5	No
4	Barton St.	n/o Van Buren Blvd.	Sensitive	65.8	65.9	0.1	1.5	No
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	72.9	73.5	0.6	3.0	No
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	71.9	73.5	1.6	3.0	No
7	Day St.	n/o Alessandro Blvd.	Sensitive	67.5	67.6	0.1	1.5	No
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	71.3	71.4	0.1	3.0	No
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.1	78.2	0.1	1.5	No
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.1	78.2	0.1	1.5	No
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.5	76.7	0.2	3.0	No
12	Alessandro Blvd.	w/o Day St.	Sensitive	74.8	74.8	0.0	1.5	No
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	72.9	77.3	4.4	3.0	Yes
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	74.8	75.0	0.2	3.0	No
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.3	71.3	0.0	1.5	No
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	76.1	76.2	0.1	1.5	No
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	75.8	75.9	0.1	1.5	No
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	75.8	76.0	0.2	1.5	No
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.2	76.7	0.5	3.0	No

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

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

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

### 7.3 EA TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Existing plus Ambient Growth without Project conditions CNEL noise levels. The Existing plus Ambient Growth without Project exterior noise levels are expected to range from 66.4 to 78.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the EAP conditions will range from 66.5 to 78.8 dBA CNEL. Table 7-10 shows that the Project off-site traffic noise level increases will range from 0.0 to 4.0 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, one of the study area roadway segments is shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project conditions. The segment is described below.

• Cactus Avenue east of Meridian Parkway (Segment #13).



Section 7.9 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience noise level increases under the EAP conditions that would exceed the established thresholds of significance.

ID	D Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) <sup>1</sup>			Incremental Noise Level Increase Threshold <sup>2</sup>	
			Land Use <sup>1</sup>	No Project	With Project	Project Addition	Limit	Exceeded?
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.7	78.8	0.1	1.5	No
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	78.4	78.5	0.1	1.5	No
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	76.4	76.4	0.0	1.5	No
4	Barton St.	n/o Van Buren Blvd.	Sensitive	66.4	66.5	0.1	1.5	No
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	73.6	74.1	0.5	3.0	No
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	72.5	73.9	1.4	3.0	No
7	Day St.	n/o Alessandro Blvd.	Sensitive	68.1	68.2	0.1	1.5	No
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	71.9	72.0	0.1	3.0	No
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.7	78.8	0.1	1.5	No
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.7	78.8	0.1	1.5	No
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	77.1	77.3	0.2	3.0	No
12	Alessandro Blvd.	w/o Day St.	Sensitive	75.4	75.4	0.0	1.5	No
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	73.5	77.5	4.0	3.0	Yes
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	75.4	75.6	0.2	3.0	No
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.9	71.9	0.0	1.5	No
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	76.7	76.8	0.1	1.5	No
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	76.4	76.5	0.1	1.5	No
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	76.4	76.6	0.2	1.5	No
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.8	77.2	0.4	3.0	No

<b>TABLE 7-10:</b>	EAP TRAFFIC NOISE LEVEL INCREASES

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

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

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

### 7.4 OYC 2028 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the Opening Year Cumulative (2028) without Project conditions CNEL noise levels. The Opening Year Cumulative (2028) without Project exterior noise levels are expected to range from 68.0 to 80.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the Opening Year Cumulative (2028) with Project conditions will range from 68.1 to 80.3 dBA CNEL. Table 7-11 shows that the Project off-site traffic noise level increases will range from 0.0 to 4.0 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, one of the study area roadway segments



is shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project conditions. The segment is described below.

• Cactus Avenue east of Meridian Parkway (Segment #13).

Section 7.9 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience noise level increases under Opening Year Cumulative (2028) with Project conditions that would exceed the established thresholds of significance.

ID	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) <sup>1</sup>			Incremental Noise Level Increase Threshold <sup>2</sup>	
			Land Use <sup>1</sup>	No Project	With Project	Project Addition	Limit	Exceeded?
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.9	79.0	0.1	1.5	No
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	78.9	79.0	0.1	1.5	No
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	78.1	78.1	0.0	1.5	No
4	Barton St.	n/o Van Buren Blvd.	Sensitive	68.0	68.1	0.1	1.5	No
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	74.0	74.5	0.5	3.0	No
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	72.8	74.1	1.3	3.0	No
7	Day St.	n/o Alessandro Blvd.	Sensitive	68.7	68.7	0.0	1.5	No
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	72.2	72.3	0.1	3.0	No
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.8	78.9	0.1	1.5	No
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.8	79.0	0.2	1.5	No
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	77.3	77.5	0.2	3.0	No
12	Alessandro Blvd.	w/o Day St.	Sensitive	76.1	76.2	0.1	1.5	No
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	73.5	77.5	4.0	3.0	Yes
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	76.1	76.3	0.2	3.0	No
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.9	71.9	0.0	1.5	No
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	77.6	77.7	0.1	1.5	No
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	77.5	77.6	0.1	1.5	No
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	78.1	78.2	0.1	1.5	No
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	80.1	80.3	0.2	3.0	No

### TABLE 7-11: OYC 2028 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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

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

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

### 7.5 HY 2045 TRAFFIC NOISE LEVEL INCREASES

Table 7-7 presents the Horizon Year (2045) without Project conditions CNEL noise levels. The Horizon Year (2045) without Project exterior noise levels are expected to range from 68.8 to 80.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or

topography. Table 7-8 shows the Horizon Year (2045) with Project conditions will range from 68.8 to 80.9 dBA CNEL. Table 7-12 shows that the Project off-site traffic noise level increases will range from 0.0 to 3.4 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, one of the study area roadway segments is shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project conditions. The segment is described below.

• Cactus Avenue east of Meridian Parkway (Segment #13).

Section 7.9 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience noise level increases under Horizon Year (2045) with Project conditions that would exceed the established thresholds of significance.

ID	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) <sup>1</sup>			Incremental Noise Level Increase Threshold <sup>2</sup>	
			Land Use <sup>1</sup>	No Project	With Project	Project Addition	Limit	Exceeded?
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	79.6	79.6	0.0	1.5	No
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	79.6	79.7	0.1	1.5	No
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	78.7	78.7	0.0	1.5	No
4	Barton St.	n/o Van Buren Blvd.	Sensitive	68.8	68.8	0.0	1.5	No
5	Sycamore Canyon Blvd.	ycamore Canyon Blvd. n/o Cottonwood Av. N		74.7	75.1	0.4	3.0	No
6	Meridian Pkwy.	Meridian Pkwy. n/o Van Buren Blvd.		73.7	74.8	1.1	3.0	No
7	Day St.	n/o Alessandro Blvd.	Sensitive	69.4	69.4	0.0	1.5	No
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	72.9	73.0	0.1	3.0	No
9	Alessandro Blvd.	w/o Barton St.	Sensitive	79.5	79.6	0.1	1.5	No
10	Alessandro Blvd.	e/o Barton St.	Sensitive	79.5	79.6	0.1	1.5	No
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	78.0	78.2	0.2	3.0	No
12	Alessandro Blvd.	w/o Day St.	Sensitive	76.8	76.9	0.1	1.5	No
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	74.6	78.0	3.4	3.0	Yes
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	76.8	77.0	0.2	3.0	No
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	74.4	74.4	0.0	1.5	No
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	78.3	78.4	0.1	1.5	No
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	78.2	78.3	0.1	1.5	No
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	78.8	78.9	0.1	1.5	No
19	Van Buren Blvd. e/o Meridian Pkwy. N		Non-Sensitive	80.7	80.9	0.2	3.0	No

### TABLE 7-12: HY 2045 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

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

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

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

# 7.6 OFF-SITE TRAFFIC NOISE IMPACTS

The study area roadway segment that would exceed the established thresholds of significance criteria outlined on Table 4-1 is limited to the non-noise sensitive land uses adjacent to Cactus Avenue east of Meridian Parkway (Segment #13). All other roadway segments will experience off-site traffic noise level impacts that are considered less than significant. The off-site Traffic Noise Analysis shows that Project traffic noise level increases on one non-sensitive study area roadway segment #13 will exceed the incremental noise level increase thresholds outlined on Table 4-1 for the following traffic conditions.

- Existing (2021) Conditions (E)
- Existing plus Project (E+P) Conditions
- Existing plus Ambient Growth (EA)
- Existing plus Ambient Growth plus Project (EAP)
- Opening Year Cumulative (2028) Without Project Conditions (OYC)
- Opening Year Cumulative (2028) With Project Conditions (OYCP)
- Horizon Year (2045) Without Project Conditions
- Horizon Year (2045) With Project Conditions

It should be noted that significant off-site traffic noise level increases identified under Existing + Project Conditions do not have the potential to occur, since the Project will not be fully developed and occupied under existing conditions, but rather under future conditions. Additionally, Segment #13 is in a developed industrial area and is not located immediately adjacent to any noise sensitive land uses. To reduce the *potentially significant* Project traffic noise level increases on the study area roadway segment (Segment #13) for the traffic conditions mentioned above, potential noise mitigation measures are identified in this analysis. Potential mitigation measures discussed below include rubberized asphalt hot mix pavement.

### 7.6.1 RUBBERIZED ASPHALT

Due to the potential noise attenuation benefits, rubberized asphalt is considered as a mitigation measure for the off-site Project-related traffic noise level increases. To reduce traffic noise levels at the noise source, Caltrans research has shown that rubberized asphalt can provide noise attenuation of approximately 4 dBA for automobile traffic noise levels (27). Changing the pavement type of a roadway has been shown to reduce the amount of tire/pavement noise produced at the source under both near-term and long-term conditions. Traffic noise is generated primarily by the interaction of the tires and pavement, the engine, and exhaust systems. For automobile noise, as much as 75 to 90-percent of traffic noise is generated by the interaction of the tires and pavement, the engine is generated by the interaction of the tires and pavement noise is generated by the interaction of the tires and pavement, especially when traveling at higher and constant speeds. (2) According to research conducted by Caltrans (27) and the Canadian Ministry of Transportation and Highways (28), a 4 dBA reduction in tire/pavement noise is attainable using rubberized asphalt under typical operating conditions.

The effectiveness of reducing traffic noise levels on roadways with high percentages of heavy trucks is limited, since the heavy truck engine and exhaust noise is not affected by rubberized alternative pavement due to the truck engine and exhaust stack height above the pavement



itself. (27) Per Caltrans guidance, a truck stack height is modeled using a height of 11.5 feet above the road. (29) With the primary off-site traffic noise source for the Project consisting of heavy trucks with a stack height of 11.5 feet off the ground, the tire/pavement noise reduction benefits associated rubberized asphalt will be primarily limited to autos.

While the off-site Project-related traffic noise level increases could theoretically be reduced with the 4 dBA reduction provided by rubberized asphalt, the reduction would not provide reliable benefits for the noise levels generated by heavy truck traffic. This is, as previously stated, due to the noise source height difference between automobiles and trucks. While rubberized asphalt will provide some noise reduction, this noise study recognizes that this is only effective for tire-on-pavement noise at higher speeds and would not reduce truck-related off-site traffic noise levels associated with truck engine and exhaust stacks to less than significant levels. Since the use of rubberized asphalt would not lower the off-site traffic noise levels below a level of significance, rubberized asphalt is not proposed as mitigation for the Project and the off-site Project-related traffic noise level increases at adjacent land uses would remain *potentially significant*.

### 7.6.2 SIGNIFICANT OFF-SITE TRAFFIC NOISE IMPACTS

Rubberized asphalt was considered as a potential noise mitigation measure to reduce the *potentially significant* off-site traffic noise level increases shown on Tables 7-9 to 7-12. However, the use of rubberized asphalt would not eliminate the off-site traffic noise level increases to the non-noise sensitive land uses adjacent to Cactus Avenue east of Meridian Parkway (Segment #13). This segment is in a developed industrial area and is not located immediately adjacent to any noise sensitive land uses. Therefore, the Project-related off-site traffic noise level increases are considered a *significant and unavoidable* impact for the non-noise sensitive land uses adjacent to Cactus Avenue east of Meridian Parkway (Segment #13). All other roadway segments will experience off-site traffic noise level impacts that are considered less than significant.

## 7.7 CUMULATIVE TRAFFIC NOISE LEVEL INCREASES

Table 7-13 presents a summary of the cumulative and project incremental noise level increases for each of the study area roadway segments. The cumulative traffic noise level increase increment describes the difference between the HY 2045 with Project conditions and the Existing (baseline) conditions. Based on the significance criteria for off-site traffic noise presented in Table 4-1, twelve of the study area roadway segments are shown to experience *potentially significant* off-site traffic noise level increases due to cumulative conditions. These segments are listed below will experience this *potentially significant* off-site traffic noise level increase without the Project.

- Alessandro Blvd. south of Canyon Crest Drive (Segment #2)
- Trautwein Rd. north of Van Buren Blvd. (Segment #3)
- Barton St. north of Van Buren Blvd. (Segment #4)
- Meridian Pkwy. north of Van Buren Blvd. (Segment #6)
- Day St. north of Alessandro Blvd. (Segment #7)
- Alessandro Blvd. west of Day St. (Segment #12)



- Cactus Avenue east of Meridian Parkway (Segment #13)
- Orange Terrace Pkwy. east of Trautwein Rd. (Segment #15)
- Van Buren Blvd. west of Wood Rd. (Segment #16)
- Van Buren Blvd. east of Wood Rd. (Segment #17)
- Van Buren Blvd. east of Orange Terrace Pkwy. (Segment #18)
- Van Buren Blvd. east of Meridian Pkwy. (Segment #19)

The Project increment shown on Table 7-13 represents the difference between the existing without Project and the existing with Project conditions. Based on the significance criteria for off-site traffic noise presented in Table 4-1, one of the study area roadway segments is shown to experience *cumulatively considerable* off-site traffic noise level increase due to the added Project traffic. The segment is described below.

• Cactus Avenue east of Meridian Parkway (Segment #13).

Section 7.6 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience project-related cumulatively considerable off-site traffic noise level increases that would exceed the established thresholds of significance.



	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Receiving Land Use (dBA) <sup>2</sup>		Cumulative Conditions			Cumulatively Considerable Project Contribution			
ID				Existing No Project (a)	Existing With Project (b)	HY 2045 With Project	Cumulative Increase (c-a)	Cumulative Limit	Cumulative Impact? <sup>3</sup>	Project Increment (c-b)	Project Limit	Project Impact? <sup>3</sup>
1	Alessandro Blvd.	s/o Arlington Av.	Sensitive	78.1	78.2	79.6	1.5	1.5	Yes	0.1	1.5	No
2	Alessandro Blvd.	s/o Canyon Crest Dr.	Sensitive	77.8	77.9	79.7	1.9	1.5	Yes	0.1	1.5	No
3	Trautwein Rd.	n/o Van Buren Blvd.	Sensitive	75.8	75.8	78.7	2.9	1.5	Yes	0.0	1.5	No
4	Barton St.	n/o Van Buren Blvd.	Sensitive	65.8	65.9	68.8	3.0	1.5	Yes	0.1	1.5	No
5	Sycamore Canyon Blvd.	n/o Cottonwood Av.	Non-Sensitive	72.9	73.5	75.1	2.2	3.0	No	0.6	3.0	No
6	Meridian Pkwy.	n/o Van Buren Blvd.	Non-Sensitive	71.9	73.5	74.8	2.9	3.0	No	1.6	3.0	No
7	Day St.	n/o Alessandro Blvd.	Sensitive	67.5	67.6	69.4	1.9	1.5	Yes	0.1	1.5	No
8	Frederick St.	n/o Cactus Av.	Non-Sensitive	71.3	71.4	73.0	1.7	3.0	No	0.1	3.0	No
9	Alessandro Blvd.	w/o Barton St.	Sensitive	78.1	78.2	79.6	1.5	1.5	Yes	0.1	1.5	No
10	Alessandro Blvd.	e/o Barton St.	Sensitive	78.1	78.2	79.6	1.5	1.5	Yes	0.1	1.5	No
11	Alessandro Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.5	76.7	78.2	1.7	3.0	No	0.2	3.0	No
12	Alessandro Blvd.	w/o Day St.	Sensitive	74.8	74.8	76.9	2.1	1.5	Yes	0.0	1.5	No
13	Cactus Av.	e/o Meridian Pkwy.	Non-Sensitive	72.9	77.3	78.0	5.1	3.0	Yes	4.4	3.0	Yes
14	Cactus Av.	w/o Elsworth St.	Non-Sensitive	74.8	75.0	77.0	2.2	3.0	No	0.2	3.0	No
15	Orange Terrace Pkwy.	e/o Trautwein Rd.	Sensitive	71.3	71.3	74.4	3.1	1.5	Yes	0.0	1.5	No
16	Van Buren Blvd.	w/o Wood Rd.	Sensitive	76.1	76.2	78.4	2.3	1.5	Yes	0.1	1.5	No
17	Van Buren Blvd.	e/o Wood Rd.	Sensitive	75.8	75.9	78.3	2.5	1.5	Yes	0.1	1.5	No
18	Van Buren Blvd.	e/o Orange Terrace Pkwy.	Sensitive	75.8	76.0	78.9	3.1	1.5	Yes	0.2	1.5	No
19	Van Buren Blvd.	e/o Meridian Pkwy.	Non-Sensitive	76.2	76.7	80.9	4.7	3.0	Yes	0.5	3.0	No

#### TABLE 7-13: CUMULATIVE PROJECT TRAFFIC NOISE LEVEL INCREASES

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

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

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



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, ten receiver locations in the vicinity of the Project site were identified. All distances are measured from the Project site boundary to the outdoor living areas (e.g., private backyards) or at the building façade, whichever is closer to the Project site. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

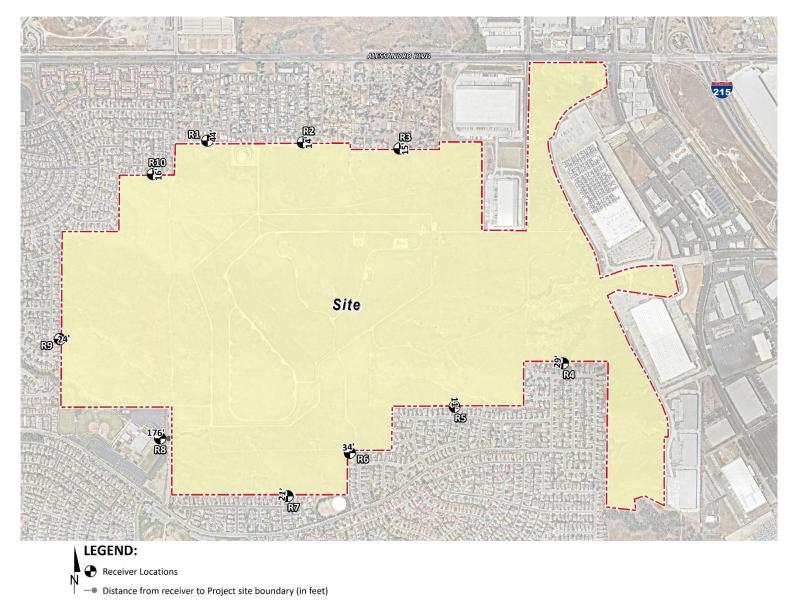
- R1: Location R1 represents the existing noise sensitive residence at 20081 Camino Del Sol, approximately 44 feet north of the Project site in the unincorporated area of Riverside County. R1 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing noise sensitive residence at 20351 Camino Del Sol, approximately 14 feet north of the Project site in the unincorporated area of Riverside County. R2 is placed in the private outdoor living areas (backyard) facing the Project site. 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 20635 Camino Del Sol, approximately 15 feet north of the Project site in the unincorporated area of Riverside County. R3 is placed in the private outdoor living areas (backyard) facing the Project site. 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 20852 Indigo Point, approximately 29 feet south of the Project site in the City of Riverside. R4 is placed in the private outdoor living areas (backyard) 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 existing noise sensitive residence at 20698 Iris Canyon Road, approximately 11 feet south of the Project site in the City of Riverside. R5 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.
- R6: Location R6 represents the existing noise sensitive residence at 8301 Clover Creek Road, approximately 34 feet south of the Project site in the City of Riverside. R6 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.
- R7: Location R7 represents the existing noise sensitive residence at 20304 Dayton Street, approximately 21 feet south of the Project site in the City of Riverside. R7 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.
- R8: Location R8 represents the existing noise sensitive Grove Community Church and preschool at 19900 Grove Community Drive, approximately 176 feet south of the Project site in the City of Riverside. R8 is placed on the Church's building façade facing the Project site. A 24-hour noise measurement was taken near this location, L7, to describe the existing ambient noise environment.
- R9: Location R9 represents the existing noise sensitive residence at 8044 La Crosse Way, approximately 24 feet west of the Project site in the City of Riverside. R9 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L8, to describe the existing ambient noise environment.
- R10: Location R10 represents the existing noise sensitive residence at 941 Saltcoats Drive, approximately 16 feet north of the Project site in the City of Riverside. R10 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.





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

14064-14 Noise Study



This page intentionally left blank



# 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 West Campus Upper Plateau Project. Exhibit 9-A identifies the noise source locations used to assess the operational noise levels.

## 9.1 **OPERATIONAL NOISE SOURCES**

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

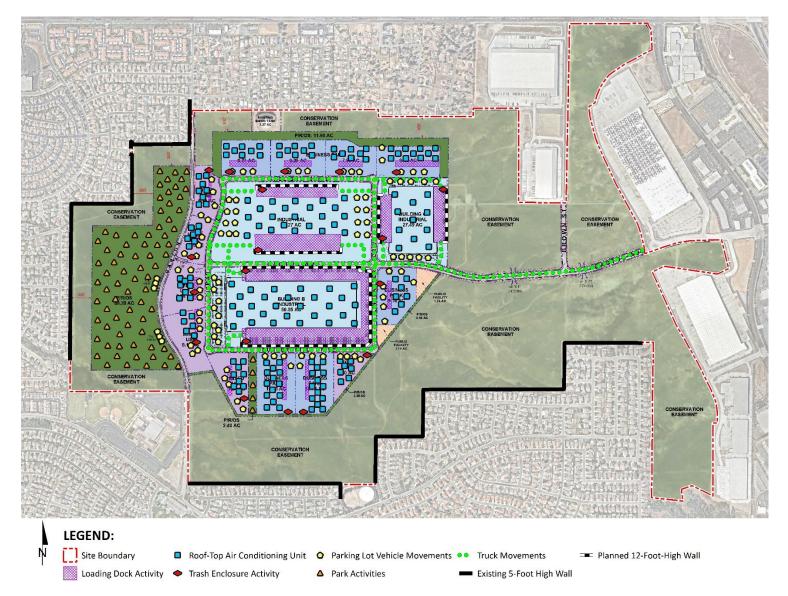
# 9.2 **REFERENCE NOISE LEVELS**

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

### 9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (22)





#### EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

Noise Source <sup>1</sup>	Noise Source	Mi Ho	n./ ur²	Reference Noise Level	Sound Power	
Noise Source	Height (Feet)	Day	Night	(dBA L <sub>eq</sub> ) @ 50 Feet	Level (dBA) <sup>3</sup>	
Loading Dock Activity	8'	60	60	65.7	111.5	
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9	
Trash Enclosure Activity	5'	10	10	57.3	89.0	
Parking Lot Vehicle Movements	5'	60	60	56.1	87.8	
Truck Movements	8'	_4	_4	59.8	93.2	
Park Activities	5'	60'	0'	49.4	81.1	

TABLE 9-1: REFE	RENCE NOISE LEVEL	MEASUREMENTS
-----------------	-------------------	--------------

<sup>1</sup> As measured by Urban Crossroads, Inc.

<sup>2</sup>Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

<sup>3</sup> Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings.

<sup>4</sup> Truck Movements are calculated based on the number of events by time of day (See Table 9-2).

### 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. 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<sub>eq</sub> 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 ROOF-TOP AIR CONDITIONING UNITS

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

96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings.

### 9.2.4 TRASH ENCLOSURE ACTIVITY

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

### 9.2.5 PARKING LOT VEHICLE MOVEMENTS

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

### 9.2.6 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represents multiple heavy trucks entering and exiting the outdoor loading dock area producing a reference noise level of 59.8 dBA L<sub>eq</sub> 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. Consistent with the *West Campus Upper Plateau Traffic Analysis* prepared by Urban Crossroads, Inc., the Project is expected to generate a total of approximately 2,054 two-way truck trips per day (26). Using the estimated number of truck trips in combination with time-of-day vehicle splits, the number of truck movements were calculated. As shown on Table 9-2, this information is then used to calculate the truck movements operational noise source activity based on the number of events by time of day.



_	Total		Truck	Time of	Day Vehicle	e Splits <sup>3</sup>	Truc	k Moveme	ents <sup>4</sup>
Truck Movements Location	Project Truck Trips <sup>1</sup>	Trip Dist.	Trips by Location <sup>2</sup>	Day	Evening	Night	Day	Evening	Night
All Driveways	2,054	100%	2,054	86.50%	2.70%	10.80%	1,777	55	222

## TABLE 9-2: TRUCK MOVEMENTS BY LOCATION

<sup>1</sup> Total Project truck trips according to Table 4-2 of the West Campus Upper Plateau Traffic Analysis.

<sup>2</sup> Calculated trip trucks per location represents the product of the total project truck trips and the trip distribution.

<sup>3</sup> Typical Southern California vehicle mix. Values rounded to the nearest one-hundredth.

<sup>4</sup> Calculated time of day truck movements by location.

"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.

### 9.2.7 PARK ACTIVITIES

To represent the potential noise level impacts associated with the Project's Park activities, a reference noise level measurement was collected at the Founders Park in the unincorporated community of Ladera Ranch in the County of Orange. The reference noise levels collected at the Founders Park are expected to reflect the noise level activities within the open space-recreation land use areas of the Project site, since the reference noise level measurement includes girls' youth soccer games, coaches shouting instructions, and parents speaking on cell phones at five feet from the noise level measurement location, and background noise levels from kids playing on swing sets and people cheering and clapping at 50 feet, the reference park activity noise level is 49.4 dBA L<sub>eq</sub>. The playground activities are estimated to occur for 60 minutes during the peak hour conditions.

# 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<sub>w</sub>) to describe individual noise sources.

While sound pressure levels (e.g.,  $L_{eq}$ ) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels ( $L_w$ ) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment. The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly



outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the CadnaA noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

# 9.4 **PROJECT OPERATIONAL NOISE LEVELS**

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning, trash enclosure activity, parking lot vehicle movements, truck movements and park activities, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-3 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 33.9 to 47.7 dBA  $L_{eq}$ .

Noise Source <sup>1</sup>	Operational Noise Levels by Receiver Location (dBA Leq)										
Noise Source	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	
Loading Dock Activity	45.3	42.0	36.5	37.4	29.4	43.2	39.4	41.6	33.1	36.8	
Roof-Top Air Conditioning Units	36.2	35.2	33.2	27.6	25.9	34.7	31.3	35.9	29.2	31.7	
Trash Enclosure Activity	13.6	9.8	5.8	6.4	0.0	14.7	12.7	20.9	5.6	12.1	
Parking Lot Vehicle Movements	27.1	22.7	19.0	20.4	12.3	26.1	22.2	34.1	24.1	19.9	
Truck Movements	43.0	38.6	36.1	41.9	30.8	43.5	35.8	45.3	35.4	36.7	
Park Activities	22.3	13.6	5.7	3.6	2.0	14.8	15.7	27.6	27.3	20.8	
Total (All Noise Sources)	47.7	44.3	40.3	43.4	33.9	46.7	41.5	47.4	38.5	40.5	

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

Table 9-4 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 31.0 to 45.9 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 and Appendix 9.1.



Naina Coursel	Operational Noise Levels by Receiver Location (dBA Leq)										
Noise Source <sup>1</sup>	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	
Loading Dock Activity	45.3	42.0	36.5	37.4	29.4	43.2	39.4	41.6	33.1	36.8	
Roof-Top Air Conditioning Units	33.8	32.8	30.8	25.2	23.5	32.2	28.9	33.5	26.8	29.3	
Trash Enclosure Activity	12.7	8.8	4.8	5.5	0.0	13.7	11.7	20.0	4.6	11.2	
Parking Lot Vehicle Movements	27.1	22.7	19.0	20.4	12.3	26.1	22.2	34.1	24.1	19.9	
Truck Movements	34.0	29.6	27.1	32.9	21.8	34.5	26.8	36.2	26.3	27.7	
Park Activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total (All Noise Sources)	45.9	42.8	38.0	39.0	31.0	44.1	40.1	43.7	35.1	38.0	

### TABLE 9-4: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

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

## 9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the March JPA and City of Riverside exterior noise level standards at the nearest noise-sensitive receiver locations. Table 9-5 shows the operational noise levels associated with West Campus Upper Plateau Project will not exceed the daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

Receiver Location <sup>1</sup>	Jurisdiction		perational s (dBA Leq) <sup>2</sup>		l Standards Leq) <sup>3</sup>	Noise Level Standards Exceeded? <sup>4</sup>		
Location		Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
R1	_	47.7	45.9	55	55	No	No	
R2	County of Riverside	44.3	42.8	55	45	No	No	
R3	Niverside	40.3	38.0	55	55	No	No	
R4		43.4	39.0	55	45	No	No	
R5		33.9	31.0	55	45	No	No	
R6		46.7	44.1	55	45	No	No	
R7	City of Riverside	41.5	40.1	55	45	No	No	
R8	Riverside	47.4	43.7	55	45	No	No	
R9		38.5	35.1	55	45	No	No	
R10		40.5	38.0	55	45	No	No	

### TABLE 9-5: OPERATIONAL NOISE LEVEL COMPLIANCE

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

<sup>2</sup> Proposed Project operational noise levels as shown on Tables 9-3 and 9-4.

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

<sup>4</sup> Do the estimated Project operational noise source activities exceed the noise level standards?

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



# 9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

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

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. As indicated on Tables 9-6, the Project will generate a daytime operational noise level increases ranging from 0.1 to 2.0 dBA L<sub>eq</sub> at the nearest receiver locations. Table 9-7 shows that the Project will generate a nighttime operational noise level increases ranging from 0.1 to 2.3 dBA L<sub>eq</sub> at the nearest receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented in Table 4-1. Therefore, the increases at the sensitive receiver locations will be *less than significant*.

Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels⁴	Combined Project and Ambient <sup>5</sup>	Project Increase <sup>6</sup>	Increase Criteria <sup>7</sup>	Increase Criteria Exceeded?
R1	47.7	L1	52.7	53.9	1.2	5.0	No
R2	44.3	L2	51.8	52.5	0.7	5.0	No
R3	40.3	L3	50.0	50.4	0.4	5.0	No
R4	43.4	L4	48.4	49.6	1.2	5.0	No
R5	33.9	L5	49.0	49.1	0.1	5.0	No
R6	46.7	L5	49.0	51.0	2.0	5.0	No
R7	41.5	L5	49.0	49.7	0.7	5.0	No
R8	47.4	L7	51.6	53.0	1.4	5.0	No
R9	38.5	L8	47.3	47.8	0.5	5.0	No
R10	40.5	L1	52.7	53.0	0.3	5.0	No

### TABLE 9-6: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

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

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

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

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

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

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

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

Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Ambient		Project Increase <sup>6</sup>	Increase Criteria <sup>7</sup>	Increase Criteria Exceeded?
R1	45.9	L1	50.3	51.7	1.4	5.0	No
R2	42.8	L2	49.0	49.9	0.9	5.0	No
R3	38.0	L3	46.5	47.1	0.6	5.0	No
R4	39.0	L4	45.0	46.0	1.0	5.0	No
R5	31.0	L5	45.6	45.7	0.1	5.0	No
R6	44.1	L5	45.6	47.9	2.3	5.0	No
R7	40.1	L5	45.6	46.7	1.1	5.0	No
R8	43.7	L7	47.5	49.0	1.5	5.0	No
R9	35.1	L8	43.9	44.4	0.5	5.0	No
R10	38.0	L1	50.3	50.5	0.2	5.0	No

TABLE 9-7: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

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

<sup>2</sup> Total Project nighttime operational noise levels as shown on Table 9-4.

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

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

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

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

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





This page intentionally left blank



# **10 CONSTRUCTION ANALYSIS**

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the limits of construction noise source activity in relation to the nearest sensitive receiver locations previously described in Section 8.

# **10.1** CONSTRUCTION NOISE STANDARDS

To analyze noise impacts originating from the construction of the West Campus Upper Plateau Project, noise from construction activities is typically limited to the hours of operation established under a jurisdiction's Code. To accurately describe the potential Project-related construction noise level contributions to the existing noise environment, this analysis presents the appropriate construction noise standards for each jurisdiction adjacent to the Project site including: the March JPA, City of Riverside, and the County of Riverside.

# **10.2** 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:

- Mass Grading
- Blasting
- Remedial Grading
- Building Construction
- Architectural Coating
- Paving

# **10.3** 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. (30) 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.



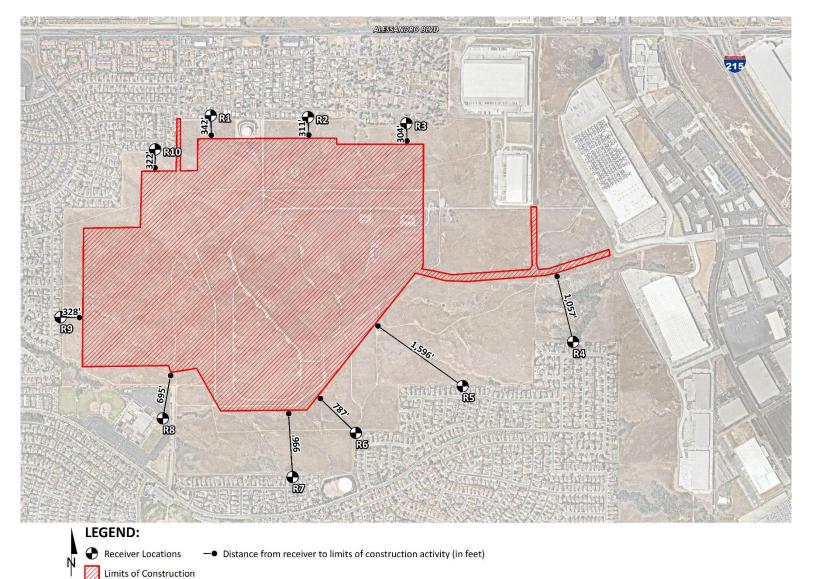


EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE ACTIVITY



# **10.4** CONSTRUCTION NOISE ANALYSIS

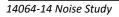
Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming they operate at the same time. As shown on Table 10-2, the highest construction noise levels are expected to range from 39.7 to 48.0 dBA  $L_{eq}$  and 44.7 to 53.0 dBA  $L_{max}$  at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

Construction Stage	Reference Construction		ice Noise 50 Feet <sup>1</sup>		ed/Max Level <sup>2</sup>
Slage	Activity	Leq	Lmax	Leq	Lmax
	Graders	81	85		
Mass Grading	Excavators	77	81	83	85
Grading	Compactors	76	83		
	Drilling Rig	72	79		
Blasting	Warning Horn	70	83	82	94
	Blasting	81	94		
	Graders	81	85		
Remedial Grading	Excavators	77	81	83	85
Grading	Compactors	76	83		
<b>D</b>	Cranes	73	81		
Building Construction	Tractors	80	84	81	84
construction	Welders	70	74		
	Cranes	73	81		
Architectural Coating	Air Compressors	74	78	77	81
Coating	Generator Sets	70	73		
	Pavers	74	77		
Paving	Paving Equipment	82	85	83	85
	Rollers	73	80		

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

<sup>1</sup> FHWA Roadway Construction Noise Model (RCNM).

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





	Construction Noise Levels (dBA L <sub>eq</sub> )								Construction Noise Levels (dBA Lmax)						
Receiver Location <sup>1</sup>	Mass Grading	Blasting	Remedial Grading	Building Cons.	Arch. Coating	Paving	Highest Levels <sup>2</sup>	Mass Grading	Blasting	Remedial Grading	Building Cons.	Arch. Coating	Paving	Highest Levels <sup>2</sup>	
R1	47.2	46.2	47.2	45.2	41.2	47.2	47.2	49.2	58.2	49.2	48.2	45.2	49.2	58.2	
R2	48.0	47.0	48.0	46.0	42.0	48.0	48.0	50.0	59.0	50.0	49.0	46.0	50.0	59.0	
R3	46.8	45.8	46.8	44.8	40.8	46.8	46.8	48.8	57.8	48.8	47.8	44.8	48.8	57.8	
R4	39.7	38.7	39.7	37.7	33.7	39.7	39.7	41.7	50.7	41.7	40.7	37.7	41.7	50.7	
R5	42.3	41.3	42.3	40.3	36.3	42.3	42.3	44.3	53.3	44.3	43.3	40.3	44.3	53.3	
R6	44.7	43.7	44.7	42.7	38.7	44.7	44.7	46.7	55.7	46.7	45.7	42.7	46.7	55.7	
R7	43.5	42.5	43.5	41.5	37.5	43.5	43.5	45.5	54.5	45.5	44.5	41.5	45.5	54.5	
R8	46.0	45.0	46.0	44.0	40.0	46.0	46.0	48.0	57.0	48.0	47.0	44.0	48.0	57.0	
R9	47.2	46.2	47.2	45.2	41.2	47.2	47.2	49.2	58.2	49.2	48.2	45.2	49.2	58.2	
R10	47.8	46.8	47.8	45.8	41.8	47.8	47.8	49.8	58.8	49.8	48.8	45.8	49.8	58.8	

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

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

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

# 10.5 CONSTRUCTION NOISE LEVEL COMPLIANCE

The construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the edge of the Project site. Table 10-3 shows the unmitigated peak daytime construction noise levels at the nearby sensitive receiver locations will range from 46.8 to 47.2 dBA  $L_{eq}$  and 50.7 to 59.0 dBA  $L_{max}$  and will not exceed the daytime construction noise level thresholds for each jurisdiction at the nearby sensitive receiver locations. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

Receiver Location <sup>1</sup>	Jurisdiction	Peak Con Activity No	struction bise Levels <sup>2</sup>	Thres	shold <sup>3</sup>	Threshold Exceeded? <sup>4</sup>		
Location		Leq	Lmax	Leq	Lmax	Leq	Lmax	
R1		47.2	-	65	-	No	-	
R2	County of Riverside	48.0	-	65	-	No	-	
R3	Riverside	46.8	-	65	-	No	-	
R4		-	50.7	-	75	-	No	
R5		-	53.3	-	75	-	No	
R6		-	55.7	-	75	-	No	
R7	City of Riverside	-	54.5	-	75	-	No	
R8	Riverside	-	57.0	-	75	-	No	
R9		-	58.2	-	75	-	No	
R10		-	58.8	-	75	-	No	

TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

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

<sup>2</sup> Estimated construction noise levels during peak operating conditions, as shown on Table 10-2.

<sup>3</sup> Construction noise standards as shown on Table 3-2.

<sup>4</sup> Do the estimated Project operational noise source activities exceed the noise level standards? "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

# **10.6** TEMPORARY CONSTRUCTION NOISE LEVEL INCREASES

To describe the temporary Project construction noise level contributions to the existing ambient noise environment, the Project construction noise levels were combined with the existing ambient noise levels measurements at the off-site receiver locations. The difference between the combined Project-construction and ambient noise levels are used to describe the construction noise level contributions. Temporary noise level increases that would be experienced at sensitive receiver locations when Project construction-source noise is added to the ambient daytime conditions are presented on Table 10-4. A temporary noise level increase of 12 dBA is considered a potentially significant impact based on the Caltrans substantial noise level increase criteria which is used to assess the Project-construction noise level increases. (21) However, the construction activities associated with the West Campus Upper Plateau Project are likely to take several years and cannot reasonably be considered as a short-term temporary noise



impact. Therefore, due to the expected duration of construction, a "barely-perceptible" 5 dBA noise level increase threshold has been used to assess the potential impacts associated with the construction related noise level increases.

As indicated in Table 10-4, the Project will contribute construction noise level increases ranging from 0.5 to 3.0 dBA  $L_{eq}$  during the daytime hours at the closest sensitive receiver locations. Since the worst-case temporary noise level increases of up to 3.0 dBA  $L_{eq}$  during Project construction will not exceed the 5 dBA  $L_{eq}$  noise level increase significance threshold, the construction noise level increases are considered *less than significant* temporary noise impacts.

Reference Combined **Total Project** Increase Receiver Measurement Ambient Project Project Increase Construction Criteria Location<sup>1</sup> Location<sup>3</sup> Noise and Increase<sup>6</sup> Criteria<sup>7</sup> Noise Level<sup>2</sup> Exceeded? Levels<sup>4</sup> **Ambient**<sup>5</sup> 47.2 52.7 R1 L1 53.8 1.1 5 No R2 48.0 L2 51.8 53.3 1.5 5 No 46.8 L3 50.0 51.7 1.7 5 R3 No 5 R4 39.7 L4 48.4 48.9 0.5 No R5 42.3 L5 49.0 49.8 0.8 5 No 1.4 44.7 L5 49.0 50.4 5 R6 No 43.5 L5 49.0 50.1 1.1 5 R7 No 46.0 L7 51.6 52.7 1.1 5 R8 No R9 47.2 L8 47.3 50.3 3.0 5 No R10 47.8 L1 52.7 53.9 1.2 5 No

TABLE 10-4: DAYTIME TEMPORARY CONSTRUCTION NOISE LEVEL INCREASES

<sup>1</sup> See Exhibit 10-A for the receiver locations.

<sup>2</sup> Total Project daytime construction noise levels as shown on Table 10-2.

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

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

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

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

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

## **10.7** CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. Ground-borne vibration levels resulting from typical construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA). (8) However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-6. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration



assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation:  $PPV_{equip} = PPV_{ref} x (25/D)^{1.5}$ 

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

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Using the vibration source level of construction equipment provided on Table 10-5 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 10-6 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 304 to 1,596 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.001 in/sec RMS and will remain below the County of Riverside threshold of 0.01 in/sec RMS at all receiver locations, as shown on Table 10-6. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.

	Distance		Receiver	Levels (in/s	sec) RMS <sup>2</sup>		Threshold	
Receiver <sup>1</sup>	to Const. Activity (Feet)	Small Bulldozer	Jack- hammer	Loaded Trucks	Large Bulldozer	Peak Vibration	(in/sec) RMS⁴	Threshold Exceeded? <sup>5</sup>
R1	342'	0.000	0.000	0.001	0.001	0.001	0.01	No
R2	311'	0.000	0.001	0.001	0.001	0.001	0.01	No
R3	304'	0.000	0.001	0.001	0.001	0.001	0.01	No
R4	1,057'	0.000	0.000	0.000	0.000	0.000	0.01	No
R5	1,596'	0.000	0.000	0.000	0.000	0.000	0.01	No
R6	787'	0.000	0.000	0.000	0.000	0.000	0.01	No
R7	996'	0.000	0.000	0.000	0.000	0.000	0.01	No
R8	695'	0.000	0.000	0.000	0.000	0.000	0.01	No
R9	328'	0.000	0.001	0.001	0.001	0.001	0.01	No
R10	322'	0.000	0.001	0.001	0.001	0.001	0.01	No

TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

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

<sup>2</sup> Based on the Vibration Source Levels of Construction Equipment included on Table 10-7. Vibration levels in PPV are converted to RMS

velocity using a 0.71 conversion factor identified in the Caltrans Transportation and Construction Vibration Guidance Manual, September 2013. <sup>3</sup> County of Riverside General Plan Noise Element, Policy N 16.3.

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



Moreover, the impacts at the site of the nearest 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.

# **10.8 BLASTING IMPACTS**

If blasting is determined to be required during excavation and grading, the blasting contractor is required to obtain blasting permit(s) from the State, and to notify Riverside County Sheriff's Department within 24 hours of planned blasting events. All blasting activities shall be designed to meet the regulatory construction noise and vibration thresholds outlined on Table 4-1. These construction thresholds may be satisfied by modifying the blast design and/or through the use alternative rock breaking methods. Alternative rock breaking methods may include the use of non-explosive techniques such as expanding chemical agents (epoxy resin). Even though the epoxy resin is capable of breaking rock overtime without explosive blasting, these activities still require drilling and other construction equipment to complete. In addition, while these alternative methods are effective in breaking rock without the use of explosives, they are typically more costly and time intensive.



# **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. International Society of Explosives Engineer's. Blasters' Handbook, 18th Edition. 2014.
- 10. U.S. Government Publishing Office. Code of Federal Regulations, Title 40, Part 205, Subpart B.
- 11. Office of Planning and Research. State of California General Plan Guidelines. October 2017.
- 12. March Joint Powers Authority. General Plan Noise/Air Quality Element. 1999.
- 13. —. Development Code, Chapter 9.10 Performance Standards.
- 14. City of Riverside. Municipal Code, Title 7 Noise Control.
- 15. **County of Riverside.** *Municipal Code, Title 9 Public, Peace, Morals and Welfare, Chapter 9.52 Noise Regulation.*
- 16. —. *General Plan Noise Element*. December 2015.
- 17. —. Airport Land Use Compatibility Plan. October 2004.
- 18. California Court of Appeal. Gray v. County of Madera, F053661. 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.
- 19. Federal Interagency Committee on Noise. Federal Agency Review of Selected Airport Noise Analysis Issues. August 1992.
- 20. California Department of Transportation. *Technical Noise Supplement*. November 2009.
- 21. —. Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects. May 2011.
- 22. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.



- 23. U.S. Department of Transportation, Federal Highway Administration. FHWA Highway Traffic Noise Prediction Model. December 1978. FHWA-RD-77-108.
- 24. 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.
- 25. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
- 26. Urban Crossroads, Inc. West Campus Upper Plateau Traffic Analysis. October 2022.
- 27. California Department of Transportation Environmental Program. *I-80 Davis OGAC Pavement Noise Study.* September 2001.
- 28. Canadian Ministry of Transportation and Highways, Highway Environment Branch. Open-Graded Asphalt 'Quiet Pavement' Assessment of Traffic Noise Reduction Performance. November 1995.
- 29. California Department of Transportation. *Highway Design Manual, Chapter 1100 Highway Traffic Noise Abatement*. November 2017.
- 30. 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 West Campus Upper Plateau 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:

MARCH JPA DEVELOPMENT CODE



This page intentionally left blank



## **CHAPTER 9.10**

# PERFORMANCE STANDARDS

### Sections:

- 9.10.010 Purpose and Intent
- 9.10.020 Applicability
- 9.10.030 Exemptions
- 9.10.040 Administration
- 9.10.050 Air Quality
- 9.10.060 Electrical or Electronic Interference
- 9.10.070 Fire and Explosive Hazards
- 9.10.080 Liquid and Solid Wastes
- 9.10.090 Radioactive Wastes
- 9.10.100 Heat and Cold
- 9.10.110 Light and Glare
- 9.10.120 Maintenance of Open Areas
- 9.10.130 Mechanical and Electrical Equipment
- 9.10.140 Noise and Sound
- 9.10.150 Odors
- 9.10.160 Outdoor Storage, Trash Areas, and Service Areas
- 9.10.170 Vibration

### Section 9.10.010 Purpose and Intent

The purpose and intent of this Chapter is to explicitly describe the location, configuration, design, amenities, operation, and other standards for proposed development projects that may impact the surrounding neighborhood. The performance standards set maximum tolerance limits on certain adverse effects created by any use or development of land.

### Section 9.10.020 Applicability

### Applicability

These performance standards shall apply to all land uses, in all districts, unless specifically stated otherwise in this Title. All uses shall be subject to these performance standards, the General Development Standards of Chapter 9.08, the Specific Use Development Standards of Chapter 9.09, the requirements of the underlying district, and all other requirements of this Title.

### Section 9.10.030 Exemptions

### **Exemptions**

The following uses or activities are exempt from the provisions of this Chapter.

- 1. Emergency equipment, vehicles, devices, and activities.
- 2. Temporary construction, maintenance, or demolition activities between the hours of 7:00 a.m. and 7:00 p.m.

### Section 9.10.040 Administration

The standards of this Chapter shall be enforced by the department or agency having enforcement authority over the subject matter. Upon discovery of any potential violation of these standards, the appropriate department or agency shall investigate and initiate corrective action as deemed necessary.

### Section 9.10.050 Air Quality

No operation or activity otherwise permitted under this Title shall cause the emission of any smoke, fly ash, dust, fumes, vapors, gases or other forms of air pollution which exceeds the requirements of the South Coast Air Quality Management District or the requirements of any Air Quality Plan or General Plan Air Quality Element adopted by the March JPA.

### Section 9.10.060 Electrical or Electronic Interference

No operation or activity otherwise permitted under this Title shall cause any source of electrical or electronic disturbance that adversely affects persons or the operation of equipment on other property and is not in conformance with the regulations of the Federal Communication Commission.

### Section 9.10.070 Fire and Explosive Hazards

An operation or activity otherwise permitted under this Title involving the storage of flammable or explosive materials shall be provided with adequate safety devices against the hazard of fire and explosion and adequate fire-fighting and fire suppression equipment and devices in accordance with the requirements of the Uniform Fire Code. Open fire burning of waste material is prohibited. Closed system incineration of waste material, where such activity is otherwise permitted under this Title and is required for research, medical or similar uses, may be permitted subject to the requirements of the California Department of Health and South Coast Air Quality Management District or other requirements of any Air Quality Plan or General Plan Air Quality Element adopted by the March JPA.

# Section 9.10.080 Liquid and Solid Wastes

No operation or action otherwise permitted under this Title shall discharge at any point into any public street, public sewer, private sewage disposal system, stream, body of water or into the ground, any materials which can contaminate any water supply, interfere with bacterial processes in sewage treatment, or otherwise cause the emission of dangerous or offensive elements, except in accordance with standards approved by the California Department of Public Health or other governmental agency having jurisdiction over liquid and solid waste.

## Section 9.10.090 Radioactive Wastes

No operation or activities otherwise permitted under this Title shall be permitted which result at any time in the release or emission of any fissionable or radioactive materials into the atmosphere, the ground, groundwater or sewage systems except as provided by and in accordance with State law. Any such operation or activity which handles, tests, transports, stores or in any way uses fissionable or radioactive material shall prepare a study addressing the probability of the release of such material and implement all recommendations identified by the study.

## Section 9.10.100 Heat and Cold

No operation or activity otherwise permitted under this Title shall emit heat or cold which would cause a temperature increase or decrease on any adjacent property in excess of 10 degrees Fahrenheit, whether the change is in the air, on the ground, or in any structure, or in any body of water.

## Section 9.10.110 Light and Glare

No operation, activity, sign, or lighting fixture shall create illumination which exceeds 0.5 foot-candles minimum maintained on any adjacent property, whether the illumination is direct or indirect light from the source. All lighting shall be designed to project downward and shall not create glare on adjacent properties.

# Section 9.10.120 Maintenance of Open Areas

Except as otherwise provided in this Title, all open areas shall be landscaped, surfaced, or treated and maintained permanently in a dust-free, weed-free condition.

## Section 9.10.130 Mechanical and Electrical Equipment

All mechanical and electrical equipment, including air conditioners, antennas, pumps, transformers, and heating and ventilating equipment shall be located, operated and screened in a manner that does not disturb adjacent uses and activities. In addition, all central building electrical controlling equipment and switching facilities shall be located within the building for all commercial, industrial and business facilities.

## Section 9.10.140 Noise and Sound

Unless otherwise specified in Chapter 9.08, General Development Standards, or Chapter 9.09, Specific Use Development Standards, all commercial and industrial uses shall be operated so that noise created by any loudspeaker, bells, gongs, buzzers, or other noise attention or attracting devices shall not exceed 55 dBA at any one time beyond the boundaries of the property. <u>Sounds emitting from any of the aforementioned devices, including or live or recorded music, shall cease between the hours of 10:00 p.m. and 7:00 a.m. if the sound therefrom creates a noise disturbance across the property line of a residential use.</u>

Additionally, outdoor construction and grading activities, including the operation of any tools or equipment associated with construction, drilling, repair, alteration, grading/grubbing or demolition work within 500 feet of the property line of a residential use, shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday and between 5:00 p.m. and 8:00 a.m. on Saturdays or at any time on Sunday or a Federal Holiday.

The following activities are exempt from the provisions of this Section:

1. Emergency Work. This Section does not apply to the emission of sound for the purpose of alerting persons to the existence of an emergency or in the performance of emergency work if the work is necessary to address immediate public health and safety related issues as deemed necessary by the March JPA Building Official or Engineer.

2. Federal or State Highway/Freeway Projects or preempted activities. This Section does not apply to roadwork on federal or state highways or any other activity the noise level of which is regulated by state or federal law.

3. Right-of-way construction. This Section does not prohibit work performed within the rights-of-way when it is deemed by the March JPA Engineer that such work will create traffic congestion and/or

hazardous or unsafe conditions.

4. Public health, welfare and safety activities. This Section does not apply to construction maintenance and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public and to protect the public health, welfare and safety, including but not limited to, trash collection, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers or storm drains, vacuuming catch basins, repairing of damaged poles, removal of abandoned vehicles, repairing of water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, sidewalks, etc.

# Section 9.10.150 Odors

No operation or activity shall be permitted which emits odorous gases or other odorous matter in such quantities as to be dangerous, injurious, noxious, or otherwise objectionable to a level that is detectable with or without the aid of instruments at or beyond the lot line of the property containing said operation or activity.

## Section 9.10.160 Outdoor Storage, Trash Areas, and Service Areas

All storage areas for storage of maintenance equipment or vehicles or refuse, and all collection areas and service areas, shall be enclosed or effectively screened from public view with a fence, wall, landscaping, berming or a combination thereof. Doors to trash enclosures shall be closed at all times except when the enclosure is being accessed for refuse disposal or pick-up. The screening requirements of Section 9.08.150 are also referenced and not intended to be superseded hereby.

## Section 9.10.170 Vibration

No vibration shall be permitted which can be felt at or beyond the property line.

This page intentionally left blank



APPENDIX 3.2:

CITY OF RIVERSIDE MUNICIPAL CODE



This page intentionally left blank



Title 7 - NOISE CONTROL

Chapter 7.05 - POLICY AND INTENT

#### 7.05.010 - Policy and intent.

It shall be the policy of the City to maintain and preserve the quiet atmosphere of the City, to implement programs aimed at retaining ambient noise levels throughout the City, and to mitigate noise conflicts.

It is determined that certain noise levels are detrimental to the public health, safety and welfare and are contrary to the public interest. Therefore, the City Council declares that creating, maintaining, causing or allowing to create, maintain or cause any noise in a manner not in conformity with the provisions of this title, is a public nuisance and shall be punishable as such.

In order to control unnecessary, excessive and/or annoying noise in the City, it is declared to be the policy of the City to prohibit such noise generated by the sources specified in this title. It shall be the goal of the City to minimize noise levels and mitigate the effects of noise to provide a safe and healthy living environment.

( Ord. 7489 § 1, 2019; Ord. 6273 § 1 (part), 1996)

#### Chapter 7.10 - DEFINITIONS

### 7.10.010 - Definitions generally.

For the purposes of this title, the words and phrases defined in this chapter shall have the meanings respectively ascribed to them by this chapter.

### ( Ord. 7489 § 3, 2019)

### 7.10.015 - A-weighted sound level.

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

( <u>Ord. 7489</u> § 4, 2019; Ord. 6273 § 1(part), 1996)

### 7.10.020 - Agricultural property.

"Agricultural property" means a parcel of real property which is developed for agricultural and incidental residential purposes which is located within any permitted zone.

(Ord. 6273 § 1(part), 1996)

### 7.10.025 - Ambient noise level.

"Ambient noise level" means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding an alleged offensive noise, at the location and approximate time at which the comparison with the offensive noise is to be made. The ambient noise level constitutes the normal or existing level of environmental noise at a given location.

(Ord. 6273 § 1(part), 1996)

### 7.10.030 - Commercial purpose.

"Commercial purpose" means the use, operation or maintenance of any sound amplification equipment for the purpose of advertising any business, goods or services, or for the purposes of attracting the attention of the public, or soliciting patronage of customers to any performance, show, entertainment, exhibition or event, or for the purpose of demonstrating such sound equipment.

(Ord. 6273 § 1(part), 1996)

### 7.10.035 - Construction.

"Construction" means any site preparation including grading, building, fabricating, assembly, substantial repair, alteration, blasting, jack hammering, pile drivers and the like.

( Ord. 7489 § 5, 2019; Ord. 6273 § 1(part), 1996)

### 7.10.036 - Community & Economic Development Director.

"Community & Economic Development Director" means the duly appointed and acting head of the Community & Economic Development Department and/or his/her designee.

### ( Ord. 7489 § 6, 2019)

### 7.10.040 - Community support land use category.

"Community support land use category" means areas developed with schools, libraries, fire stations, hospitals and similar uses in any zone.

### (Ord. 6273 § 1(part), 1996)

### 7.10.045 - Cumulative period.

"Cumulative period" means a total period of time composed of time segments which may be continuous or discontinuous.

(Ord. 6273 § 1(part), 1996)

7.10.050 - Decibel (dB).

"Decibel (dB)" means a unit for measuring amplitude of a sound, equal to 20 times the logarithm to the base ten of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

( Ord. 7489 § 7, 2019; Ord. 6273 § 1(part), 1996)

7.10.055 - Demolition.

"Demolition" means any dismantling, intentional destruction or removal of structures, site improvements, landscaping or utilities.

(Ord. 6273 § 1(part), 1996)

#### 7.10.060 - Emergency.

"Emergency" means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage which demands immediate action.

(Ord. 6273 § 1(part), 1996)

#### 7.10.065 - Emergency work.

"Emergency work" means work made necessary to restore property to a safe condition following a physical trauma or property damage caused by an emergency or work necessary to prevent or minimize damage from a potential emergency.

(Ord. 6273 § 1(part), 1996)

### 7.10.070 - Fixed noise source.

"Fixed noise source" means a stationary device which creates sounds from a fixed location, including residential, agricultural, industrial and commercial machinery and equipment, pumps fans, compressors, air conditioners and refrigeration devices.

(Ord. 6273 § 1(part), 1996)

#### 7.10.075 - Grading.

"Grading" means any excavating and/or filling of earth material to prepare a site for construction or the placement of improvements.

(Ord. 6273 § 1(part), 1996)

#### 7.10.080 - Impulsive sound.

"Impulsive sound" means sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples include explosions, drum beats, drop-forge impacts, fire crackers, discharge of firearms and one object striking another. (Ord. 6273 § 1(part), 1996)

7.10.085 - Industrial land use category.

"Industrial land use category" means any area occupied by land uses whose primary operation involves warehousing, manufacturing, assembling, distributing, packaging or processing goods in the BMP, I, and AIR zones.

(Ord. 6273 § 1(part), 1996)

#### 7.10.090 - Intrusive noise.

"Intrusive noise" means a noise which intrudes over and above the existing ambient noise. The relative intrusiveness of the sound depends upon its amplitude, duration, frequency and time of occurrence, tonal or informational content as well as its relationship to the prevailing ambient noise level.

(Ord. 6273 § 1(part), 1996)

#### 7.10.095 - Minor maintenance.

"Minor maintenance" means work required to keep property used for residential purposes in an existing state.

(Ord. 6273 § 1(part), 1996)

#### 7.10.100 - Mobile noise source.

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

(Ord. 6273 § 1(part), 1996)

### 7.10.105 - Motor vehicle.

"Motor vehicle" means any self-propelled vehicle as defined in the California Vehicle Code, including all onhighway types of motor vehicles subject to registration under said code, and all off-highway type motor vehicles subject to identification under said code.

(Ord. 6273 § 1(part), 1996)

7.10.110 - Muffler or sound dissipative device.

"Muffler or sound dissipative device" means a device for abating the sound of escaping gases from an internal combustion engine.

( Ord. 7489 § 8, 2019; Ord. 6273 § 1(part), 1996)

7.10.115 - Noise.

"Noise" means any sound which exceeds the appropriate actual or presumed ambient noise level or which annoys or tends to disturb humans or which causes or tends to cause an adverse psychological or physiological effect on humans.

(Ord. 6273 § 1(part), 1996)

7.10.120 - Noise Control Officer.

"Noise Control Officer" means the City official(s) or duly authorized representative(s) with the responsibility to enforce the noise ordinance.

(Ord. 6273 § 1(part), 1996)

### 7.10.125 - Noise disturbance.

"Noise disturbance" means any sound which, as judged by a City police officer or code enforcement officer, annoys or disturbs a reasonable person of normal sensitivities or exceeds a standard set forth in this title.

( Ord. 7489 § 9, 2019; Ord. 6273 § 1(part), 1996)

### 7.10.130 - Noise source.

"Noise source" means a disturbance causing operation which originates from noise generating mechanism. An example of a noise source is the combination of a motor, pump and compressor.

### (Ord. 6273 § 1(part), 1996)

### 7.10.135 - Noise zone.

"Noise zone" means defined areas of generally consistent land use where the ambient noise levels are generally similar within a range of five decibels.

(Ord. 6273 § 1(part), 1996)

7.10.140 - Nonurban land use category.

"Nonurban land use category" means vacant land or land primarily for agricultural production containing ten acres or more.

(Ord. 6273 § 1(part), 1996)

7.10.145 - Office/commercial land use category.

"Office/commercial land use category" means areas developed with office and/or commercial uses in the O, CRC, CR-NC, CR, and CG zones.

(Ord. 6967 § 2, 2007; Ord. 6273 § 1(part), 1996)

7.10.150 - Person.

"Person" means any individual, association, partnership or corporation and includes any officer, employee, department, agency or instrumentality of a State or any political subdivision of a State.

(Ord. 6273 § 1(part), 1996)

7.10.155 - Powered model vehicle.

"Powered model vehicle" means airborne, waterborne or land-borne vehicles such as model airplanes, model boats, and model vehicles of any type or size which are not designed for carrying persons or property and which can be propelled in any form other than manpower or wind power.

(Ord. 6273 § 1(part), 1996)

7.10.160 - Public recreation facility land use category.

"Public recreation facility land use category" means areas developed with public parks and other public recreational facilities.

(Ord. 6273 § 1(part), 1996)

#### 7.10.165 - 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 government entity.

```
(Ord. 6273 § 1(part), 1996)
```

### 7.10.170 - Public space.

"Public space" means any real property or structures which are owned or controlled by a government entity.

(Ord. 6273 § 1(part), 1996)

#### 7.10.175 - Residential land use category.

"Residential land use category" means areas primarily used for residential purposes in the RE, RA-5, RR, RC, R-1-1-1/2 acre, R-1-13000, R-1-10500, R-1-8500, R-1-7000, R-3-2500, R-3-4000, R-3-3000, R-3-2000, R-3-1500, and R-4 zones.

(Ord. 6967, § 2, 2007; Ord. 6273 § 1(part), 1996)

```
7.10.180 - Sound.
```

"Sound" means an oscillation in pressure, particle displacement, particle velocity or other physical parameter, in a medium with internal forces that causes compression and rarefaction of that medium. The description of sound may include any characteristic of such sound, including duration, intensity and frequency.

(Ord. 6273 § 1(part), 1996)

7.10.185 - Sound amplifying equipment.

"Sound amplifying equipment" means any device for the amplification of the human voice, or music, or any other sound, excluding devices in motor vehicles when heard only by the occupants of the vehicle, excluding warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.

(Ord. 6273 § 1(part), 1996)

### 7.10.190 - Sound level.

"Sound level" means the weighted sound pressure level obtained by the use of a sound level meter and frequency weighing network, such as A, B or C, as specified in American National Standards Institute specifications for sound level meter ANSI S1.4-1971 or the latest approved revision thereof. If the frequency weighing method used is not stated, the A-weighing shall apply.

(Ord. 6273 § 1(part), 1996)

### 7.10.195 - Sound level meter.

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

(Ord. 6273 § 1(part), 1996)

### 7.10.200 - Sound pressure.

"Sound pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given point in space, as produced by sound energy.

(Ord. 6273 § 1(part), 1996)

### 7.10.205 - Sound pressure level.

"Sound pressure level" means 20 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.

( Ord. 7489 § 10, 2019; Ord. 6273 § 1(part), 1996)

7.10.210 - Supplementary definitions of technical terms.

Definitions of technical terms not defined herein shall be obtained from the American National Standard, "Acoustical Terminology" S1.1-1961 (R-1971) or the latest revision thereof.

(Ord. 6273 § 1 (part), 1996)

7.15.005 - Administration and enforcement.

- A. The noise regulation shall be enforced by the Code Enforcement Division of the Community & Economic Development Department and/or the Riverside Police Department.
- B. It shall be the responsibility of the Code Enforcement Division and/or the Riverside Police Department to enforce the provisions of this title and to perform all other functions required by this title. Such duties shall include, but not be limited to investigating potential violations, issuing warning notices and citations, and providing evidence to the City Attorney for legal action.
- C. A violation of these regulations may be prosecuted as a misdemeanor or as an infraction. Each day a violation occurs shall constitute a separate offense and shall be punishable as such. However, nothing in these regulations shall prevent any code compliance officer or his duly authorized representatives from efforts to obtain voluntary compliance by way of warning, notice or education.

( Ord. 7489 § 11, 2019; Ord. 7341 § 6, 2016; Ord. 6959 § 1, 2007; Ord. 6844 § 15, 2006; Ord. 6273 § 1 (part), 1996)

#### 7.15.010 - Fines and penalties.

- A. Any violation of this title shall be subject to fines as set forth in <u>Chapter 1.17</u> of the Riverside Municipal Code.
- B. The civil fines and criminal penalties imposed shall be in addition to any other fines and/or penalties imposed for violation of local, State, and/or Federal law.

```
( <u>Ord. 7489</u> § 13, 2019)
```

### 7.15.015 - Responsible parties.

Persons responsible for violations of this title shall include the person, persons, entity, or entities responsible for the noise disturbance including, but not limited to, the property owner, business operations, renters, or lessees on whose premises the noise originates.

( <u>Ord. 7489</u> § 14, 2019)

#### Chapter 7.20 - SOUND LEVEL MEASUREMENT

### 7.20.010 - Sound level measurement.

Except as provided by Chapter 17.35, General Noise Regulations, any sound or noise level measurement made to enforce this title shall be measured with a sound level meter using the A-weighting scale at slow response. The exterior noise level shall be measured at the position or positions along the complainant's property line closest to the noise source or where the noise level is highest. If the complaint concerns an interior source, noise measurements shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source with windows opened or closed as would be normal for the season.

( Ord. 7489 § 15, 2019; Ord. 6273 § 1 (part), 1996)

Chapter 7.23 - AMBIENT SOUND LEVELS

Footnotes:

Editor's note— Ord. 7489 § 16, adopted Nov. 5, 2019, amended the title of Ch. 7.23 from "Ambient Noise Levels" to "Ambient Sound Levels," as set out herein.

7.23.010 - Ambient sound levels.

<u>Title 7</u> - Noise Control of the Riverside Municipal Code shall be consistent with Title 24 of the California Code of Regulations as may be amended from time to time.

( Ord. 7489 § 17, 2019; Ord. 6967 § 3, 2007)

7.23.020 - Mixed use development.

Where a new development proposal includes a mix of residential and nonresidential uses within the same project, the interior ambient noise standard for the residential component of the project may be increased by five decibels.

( <u>Ord. 7489</u> § 18, 2019; Ord. 6967 § 3, 2007)

7.23.030 - Infill single-family residential development.

Where a new development proposal includes an infill single-family residential use, the interior ambient noise standard for the proposal may be increased by five decibels.

( Ord. 7489 § 19, 2019; Ord. 6967 § 3, 2007)

Chapter 7.25 - NUISANCE EXTERIOR SOUND LEVEL LIMITS

7.25.010 - Exterior sound level limits.

- A. Unless a variance has been granted as provided in this title, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:
  - 1. The exterior noise standard of the applicable land use category, up to five decibels, for a cumulative period of more than 30 minutes in any hour; or
  - 2. The exterior noise standard of the applicable land use category, plus five decibels, for a cumulative period of more than 15 minutes in any hour; or
  - 3. The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour; or
  - 4. The exterior noise standard of the applicable land use category, plus 15 decibels, for the cumulative period of more than one minute in any hour; or
  - 5. The exterior noise standard for the applicable land use category, plus 20 decibels or the maximum

measured ambient noise level, for any period of time.

- B. If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.
- C. If possible, the ambient noise level shall be measured at the same location along the property line with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, then the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance that the offending noise is inaudible. If the measurement location is on the boundary between two different districts, the noise shall be the arithmetic mean of the two districts.
- D. Where the intruding noise source is an air-conditioning unit or refrigeration system which was installed prior to the effective date of this title, the exterior noise level when measured at the property line shall not exceed 60 dBA for units installed before 1-1-80 and 55 dBA for units installed after 1-1-80.

	Exterior Noise Standards	
Land Use Category	Time Period	Noise Level
Residential	Night (10:00 p.m. to 7:00 a.m.)	45 dBA
	Day (7:00 a.m. to 10:00 p.m.)	55 dBA
Office/commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community support	Any time	60 dBA
Public recreation facility	Any time	65 dBA
Nonurban	Any time	70 dBA

## Table 7.25.010A

Land Use Catego	ory/Zoning Matrix
Land Use Category	Underlying Zone
Residential	RE, RA-5, RR, RC, R-1-1/2 acre, R-1-13000, R-1-10500,
	R-1-8500, R-1-7000, R-3-2500,
	R-3-4000, R-3-3000, R-3-2000, R-3-1500, R-4
Office/commercial	O, CRC, CR-NC, CR, CG
Industrial	BMP, I, AIR
Community support	Any permitted zone
Nonurban	Any permitted zone

( <u>Ord. 7489</u> § 20, 21(Exh. A), 2019; Ord. 6967 § 5, 2007; Ord. 6273 § 1 (part), 1996)

Chapter 7.30 - NUISANCE INTERIOR SOUND LEVEL LIMITS

7.30.015 - Interior sound level limits.

- A. No person shall operate or cause to be operated, any source of sound indoors which causes the noise level, when measured inside another dwelling unit, school or hospital, to exceed:
  - 1. The interior noise standard for the applicable land category area, up to five decibels, for a cumulative period of more than five minutes in any hour;
  - 2. The interior noise standard for the applicable land use category, plus five decibels, for a cumulative period of more than one minute in any hour;
  - 3. The interior noise standard for the applicable land use category, plus ten decibels or the maximum measured ambient noise level, for any period of time.
- B. If the measured interior ambient noise level exceeds that permissible within the first two noise limit categories in this section, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to reflect the interior ambient noise level. In the event the interior ambient noise level exceeds the third noise limit category, the maximum allowable interior noise level under said category shall be increased to reflect the maximum interior ambient noise level.
- C. The interior noise standard for various land use districts shall apply, unless otherwise specifically indicated, within structures located in designated zones with windows opened or closed as is typical of the season.

## Table <u>7.30.015</u>

	Interior Noise Standard		
Land Use Category	Time Period	Noise Level	
Residential	Night (10 p.m. to 7 a.m.)	35 dBA	
	Day (7 a.m. to 10 p.m.)	45 dBA	
School	7 a.m. to 10 p.m. (while schoc	l is in 45 dBA	
	session)		
Hospital	Any time	45 dBA	

( Ord. 7489 § 22, 23(Exh. B), 2019; Ord. 6273 § 1 (part), 1996)

Chapter 7.35 - GENERAL NOISE REGULATIONS

7.35.010 - General noise regulations.

- A. It is unlawful for any person to make, continue, or cause to be made or continued any noise disturbance. The factors which should be considered in determining whether a violation of this section exists, include the following:
  - 1. The sound level of the objectionable noise.
  - 2. The sound level of the ambient noise.
  - 3. The proximity of the noise to dwelling units, hospital, hotels and the like.
  - 4. The zoning of the area.
  - 5. The population density of the area.
  - 6. The time of day or night.

101

- 7. The duration of the noise.
- 8. Whether the noise is recurrent, intermittent, or constant.
- 9. Whether the noise is produced by a commercial or noncommercial activity.
- 10. Whether the nature of the noise is usual or unusual.
- 11. Whether the noise is natural or unnatural.
- B. It is unlawful for any person to make, continue, or cause to be made or continued any noise disturbance.
- C. Any noise plainly audible through partitions common to two dwelling units within a building shall be prohibited.

( Ord. 7489 § 24, 2019; Ord. 7341 §6, 2016; Ord. 6959 §2, 2007; Ord. 6328 § 1, 1996; Ord. 6273 § 1 (part), 1996)

#### 7.35.020 - Exemptions.

The following activities shall be exempt from the provisions of this title:

- A. *Emergency work*. The provisions of this title shall not apply to the emission of sound for the purpose of alerting persons to the existence of an emergency or in the performance of emergency work.
- B. *School events*. Sanctioned school activities conducted on public or private school grounds including but not limited to school athletic and entertainment events are exempted from the provisions of this chapter conducted between the hours of 7:00 a.m. and 11:00 p.m.
- C. *Federal or State preempted activities.* The provisions of this Chapter shall not apply to any other activity the noise level of which is regulated by state or federal law.
- D. *Minor maintenance to residential property*. The provisions of this title shall not apply to noise sources associated with minor maintenance to property used for residential purposes, provided the activities take place between the hours of 7:00 a.m. and 10:00 p.m.
- E. *Right-of-way construction*. The provisions of this title shall not apply to any work performed in the City right-of-ways when, in the opinion of the Public Works Director or his designee, such work will create traffic congestion and/or hazardous or unsafe conditions.
- F. *Public health, welfare and safety activities.* The provisions of this title shall not apply to construction maintenance and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public and to protect the public health, welfare and safety, including but not limited to, trash collection, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, vacuuming catch basins, repairing of damaged poles, removal of abandoned vehicles, repairing of water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, sidewalks, etc.
- G. *Construction*. Noise sources associated with construction, repair, remodeling, or grading of any real property; provided a permit has been obtained from the City as required; and provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, between the hours of 5:00 p.m. and 8:00 a.m. on Saturdays, or at any time on Sunday or a federal holiday.
- H. *Warning devices.* Warning devices necessary for the protection of public safety, as for example fire, police, and ambulance sirens, including the testing of such devices, are exempted from the provisions of this title.

#### Riverside, CA Code of Ordinances

I. *Agriculture.* Any agricultural activity, operation, or facility, or appurtenances thereof (e.g., wind machines), cc or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and as allowed under California Civil Code Section 3482 as amended from time to time.

( Ord. 7489 § 25, 2019; Ord. 7341 § 6, 2016; Ord. 6917 § 1, 2006; Ord. 6328 § 2, 1996; Ord. 6273 § 1 (part), 1996)

Chapter 7.40 - VARIANCE PROCEDURE

## 7.40.010 - Variance procedure.

- A. The Community & Economic Development Director is authorized to grant variances for exemption from any provision of this title, and may limit area of applicability, noise levels, time limits, and other terms and conditions determined appropriate to protect the public health, safety, and welfare. The provisions of this section shall in no way affect the duty to obtain any permit or license required by law for such activities.
- B. Any person seeking a variance pursuant to this section shall file an application with the Community & Economic Development Director. The application shall be signed by the property owner or owner's representative using forms supplied by the Community & Economic Development Department-Planning Division. The application shall contain information which demonstrates that bringing the source of the sound or activity into compliance with this title would constitute an unreasonable hardship to the applicant, the community, or other persons. The Community & Economic Development Director may require additional information if it is necessary to make a determination regarding the variance request. The application shall be accompanied by a fee established by resolution of the City Council.
- C. A separate application shall be filed for each noise source; provided, however, several mobile sources under common ownership or several fixed sources on a single property may be combined into one application. Any person who claims to be adversely affected by the allowance of the variance may file a statement with the Community & Economic Development Director containing any information to support his claim. If the Community & Economic Development Director determines that a sufficient controversy exists regarding a variance application, the variance may be set for public hearing before the Planning Commission.
- D. Public notice of the consideration of a proposed variance from the standards of this title shall be provided by the Community & Economic Development Director by mailing such notice to property owners within 300 feet of the exterior boundaries of the property under consideration. The notice shall invite interested persons to notify the Planning Division of any concerns or comments within ten days of the date of the notice.
- E. In determining whether to grant or deny the application, the Community & Economic Development Director or the Planning Commission shall consider comments received from property owners within 300 feet, hardship on the applicant, the community, or other persons affected and property affected and any other adverse impacts. The requested variance may be granted in whole or in part and upon such terms and conditions as it deems necessary if, from the facts presented on the application, the Community & Economic Development Director or the Planning Commission finds that:
  - The strict application of the provisions of this title would result in practical difficulties or unnecessary hardships inconsistent with the general purpose of this Title; 2. There are exceptional circumstances or conditions applicable to the property involved or to the intended use or development of the property that do not apply generally to other property in the same zone or neighborhood;

#### Riverside, CA Code of Ordinances

- 3. The granting of such variance will not be materially detrimental to the public welfare or injurious to the proprimprovements in the zone or neighborhood in which the property is located;
- 4. The granting of such variance will not be contrary to the objectives of any part of the adopted General Plan.
- F. A variance shall be granted by a notice to the applicant containing all the necessary conditions, including any time limits on the permitted activity. The variance shall not become effective until all the conditions are agreed to by the applicant. Noncompliance with any condition of the variance shall terminate the variance and subject the person holding it to those provisions of this title for which the variance was granted.
- G. A variance shall be valid for a period not exceeding one year after the date on which it was granted. Applications for extensions of the time limits specified in variances or for the modification of other substantial conditions shall be treated like applications for initial variances.
- H. In the event the Community & Economic Development Director does not approve an application for a variance within ten days after the application is filed it shall be placed on the agenda of the next regularly scheduled Planning Commission, unless the Commission refers the matter to the City Council.

( Ord. 7489 § 26, 2019; Ord. 7341 § 6, 2016; Ord. 6967 § 7, 2007; Ord. 6462 § 8-10, 1999; Ord. 6273 § 1 (part), 1996)

## 7.40.020 - Appeals.

Any person aggrieved by the approval or disapproval of a variance, may appeal the decision of the Community & Economic Development Director or Planning Commission to the City Council within ten days after the date of such approval or disapproval. The City Council shall hold a hearing thereon, upon notice to the applicant, considering the same criteria presented to the Community & Economic Development Director.

( Ord. 7489 § 27, 2019; Ord. 6462 § 11, 1999; Ord. 6273 § 1 (part), 1996)

Chapter 7.45 - SEVERABILITY

## 7.45.010 - Severability.

If any section, subsection, sentence, clause or phrase in this title is for any reason held to be invalid or unconstitutional by decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this title. The City Council hereby declares that it would have passed this title and each section, subsection, clause or phrase thereof irrespective of the fact that any one or more other sections, subsections, clauses or phrases may be declared invalid or unconstitutional.

(Ord. 6328 § 3, 1996)

APPENDIX 3.3:

COUNTY OF RIVERSIDE MUNICIPAL CODE

This page intentionally left blank



### Chapter 9.52 - NOISE REGULATION

#### Sections:

9.52.010 - Intent.

At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the board of supervisors declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish county-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.

(Ord. 847 § 1, 2006)

#### 9.52.020 - Exemptions.

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

- A. Facilities owned or operated by or for a governmental agency;
- B. Capital improvement projects of a governmental agency;
- C. The maintenance or repair of public properties;
- D. Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile;
- E. Public or private schools and school-sponsored activities;
- F. Agricultural operations on land designated "Agriculture" in the Riverside County general plan, or land zoned A-I (light agriculture), A-P (light agriculture with poultry), A-2 (heavy agriculture), A-D (agriculture-dairy) or C/V (citrus/vineyard), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile;
- G. Wind energy conversion systems (WECS), provided such systems comply with the WECS noise provisions of Riverside County Ordinance No. 348;
- H. Private construction projects located one-quarter of a mile or more from an inhabited dwelling;
- I. Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that:
  - 1. Construction does not occur between the hours of six p.m. and six a.m. during the months of June through September, and
  - 2. Construction does not occur between the hours of six p.m. and seven a.m. during the months of October through May;
- J. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of seven a.m. and eight p.m.;
- K. Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;
- L. Heating and air conditioning equipment;
- M. Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety, and welfare;

N. The discharge of firearms consistent with all state laws.

(Ord. 847 § 2, 2006)

#### 9.52.030 - Definitions.

As used in this chapter, the following terms shall have the following meanings:

"Audio equipment" means a television, stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.

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

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

"Governmental agency" means the United States, the state of California, Riverside County, any city within Riverside County, any special district within Riverside County or any combination of these agencies.

"Land use permit" means a discretionary permit issued by Riverside County pursuant to Riverside County Ordinance No. 348.

"Motor vehicle" means a vehicle that is self-propelled.

"Motor vehicle sound system" means a stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.

"Noise" means any loud, discordant or disagreeable sound.

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

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

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

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

"Sensitive receptor" means a land use that is identified as sensitive to noise in the noise element of the Riverside County general plan, including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries or public libraries.

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

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

(Ord. 847 § 3, 2006)

9.52.040 - General sound level standards.

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

GENERAL PLAN	GENERAL PLAN LAND	GENERAL PLAN LAND			MUM L LEVEL
FOUNDATION COMPONENT	USE DESIGNATION	USE DESIGNATION NAME	DENSITY	7 am— 10 pm	10 pm—7 am
	EDR	Estate Density Residential	2 AC	55	45
	VLDR	Very Low Density Residential	1 AC	55	45
	LDR	Low Density Residential	1/2 AC	55	45
	MDR	Medium Density Residential	2—5	55	45
Community	MHDR	Medium High Density Residential	5—8	55	45
Development	HDR	High Density Residential	8—14	55	45
	VHDR	Very High Density Residential	14—20	55	45
	H'TDR	Highest Density Residential	20+	55	45
	CR	Retail Commercial		65	55
	СО	Office Commercial		65	55
	СТ	Tourist Commercial		65	55

# TABLE 1

Sound Level Standards (Db L max)

	CC	Community Center		65	55
	LI	Light Industrial		75	55
	HI	Heavy Industrial		75	75
	BP	Business Park		65	45
-	PF	Public Facility		65	45
		Specific Plan-Residential		55	45
		Specific Plan-Commercial		65	55
	SP	Specific Plan-Light Industrial		75	55
		Specific Plan-Heavy Industrial		75	75
	EDR	Estate Density Residential	2 AC	55	45
Rural Community	VLDR	Very Low Density Residential	1 AC	55	45
_	LDR	Low Density Residential	1/2 AC	55	45
	RR	Rural Residential	5 AC	45	45
Rural	RM	Rural Mountainous	10 AC	45	45
	RD	Rural Desert	10 AC	45	45
Agriculture	AG	Agriculture	10 AC	45	45
Open Space	С	Conservation		45	45
Open Space	СН	Conservation Habitat		45	45

REC	Recreation		45	45
RUR	Rural	20 AC	45	45
W	Watershed		45	45
MR	Mineral Resources		75	45

## (Ord. 847 § 4, 2006)

9.52.050 - Sound level measurement methodology.

Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the enforcement officials identified in Section 9.52.080 of this chapter. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be re-verified. Sound level meters and calibration equipment shall be certified annually.

(Ord. 847 § 5, 2006)

9.52.060 - Special sound sources standards.

The general sound level standards set forth in Section 9.52.040 of this chapter apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards, the failure to comply with which constitutes separate violations of this chapter:

- A. Motor Vehicles.
  - 1. Off-Highway Vehicles.
    - a. No person shall operate an off-highway vehicle unless it is equipped with a USDAqualified spark arrester and a constantly operating and properly maintained muffler. A muffler is not considered constantly operating and properly maintained if it is equipped with a cutout, bypass or similar device.
    - b. No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than ninety-six (96) dBA if the vehicle was manufactured on or after January 1, 1986 or is not more than one hundred one (101) dBA if the vehicle was manufactured before January 1, 1986. For purposes of this subsection, emitted noise shall be measured a distance of twenty (20) inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.
  - 2. Sound Systems. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of ten p.m. and eight a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate

a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than one hundred (100) feet from the vehicle.

- B. Power Tools and Equipment. No person shall operate any power tools or equipment between the hours of ten p.m. and eight a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a distance greater than one hundred (100) feet from the power tools or equipment.
- C. Audio Equipment. No person shall operate any audio equipment, whether portable or not, between the hours of ten p.m. and eight a.m. such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than one hundred (100) feet from the equipment.
- D. Sound-Amplifying Equipment and Live Music. No person shall install, use or operate soundamplifying equipment, or perform, or allow to be performed, live music unless such activities comply with the following requirements. To the extent that these requirements conflict with any conditions of approval attached to an underlying land use permit, these requirements shall control:
  - 1. Sound-amplifying equipment or live music is prohibited between the hours of ten p.m. and eight a.m.
  - 2. Sound emanating from sound-amplifying equipment or live music at any other time shall not be audible to the human ear at a distance greater than two hundred (200) feet from the equipment or music.

(Ord. 847 § 6, 2006)

9.52.070 - Exceptions.

Exceptions may be requested from the standards set forth in Section 9.52.040 or 9.52.060 of this chapter and may be characterized as construction-related, single-event or continuous-events exceptions.

- A. Application and Processing.
  - 1. Construction-Related Exceptions. An application for a construction-related exception shall be made to and considered by the director of building and safety on forms provided by the building and safety department and shall be accompanied by the appropriate filing fee. No public hearing is required.
  - 2. Single-Event Exceptions. An application for a single-event exception shall be made to and considered by the planning director on forms provided by the planning department and shall be accompanied by the appropriate filing fee. No public hearing is required.
  - 3. Continuous-Events Exceptions. An application for a continuous-events exception shall be made to the planning director on forms provided by the planning department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous-events exception, the planning director shall set the matter for public hearing before the planning commission, notice of which shall be given as provided in Section 18.26c of Riverside County Ordinance No. 348. Notwithstanding the above, an application for a continuous-events exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.

- B. Requirements for Approval. The appropriate decisionmaking body or officer shall not approve an exception application unless the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decisionmaking body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.
- C. Appeals. The director of building and safety's decision on an application for a constructionrelated exception is considered final. The planning director's decision on an application for a single-event exception is considered final. After making a decision on an application for a continuous-events exception, the appropriate decisionmaking body or officer shall mail notice of the decision to the applicant. Within ten (10) calendar days after the mailing of such notice, the applicant or an interested person may appeal the decision to the board of supervisors. Upon receipt of an appeal and payment of the appropriate appeal fee, the clerk of the board shall set the matter for hearing not less than five days nor more than thirty (30) days thereafter and shall give written notice of the hearing in the same manner as notice of the hearing was given by the appropriate hearing officer or body. The board of supervisors shall render its decision within thirty (30) days after the appeal hearing is closed.
- D. Effect of a Pending Continuous-Events Exception Application. For a period of one hundred eighty (180) days from the effective date of this chapter, no person creating any sound prohibited by this chapter shall be considered in violation of this chapter if the sound is related to a use that is operating pursuant to an approved land use permit, if an application for a continuous-events exception has been filed to sanction the sound and if a decision on the application is pending.

(Ord. 847 § 7, 2006)

### 9.52.080 - Enforcement.

The Riverside County sheriff and code enforcement shall have the primary responsibility for enforcing this chapter; provided, however, the sheriff and code enforcement may be assisted by the public health department. Violations shall be prosecuted as described in Section 9.52.100 of this chapter, but nothing in this chapter shall prevent the sheriff, code enforcement or the department of public health from engaging in efforts to obtain voluntary compliance by means of warnings, notices, or educational programs.

### (Ord. 847.1 § 1, 2007: Ord. 847 § 8, 2006)

9.52.090 - Duty to cooperate.

No person shall refuse to cooperate with, or obstruct, the enforcement officials identified in Section 9.52.080 of this chapter when they are engaged in the process of enforcing the provisions of this chapter. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this chapter.

(Ord. 847 § 9, 2006)

9.52.100 - Violations and penalties.

Any person who violates any provision of this chapter once or twice within a one hundred eighty (180) day period shall be guilty of an infraction. Any person who violates any provision of this chapter more than twice within a one hundred eighty (180) day period shall be guilty of a misdemeanor. Each day a violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. Penalties shall not exceed the following amounts:

- A. For the first violation within a one hundred eighty (180) day period, the minimum mandatory fine shall be five hundred dollars (\$500.00).
- B. For the second violation within a one hundred eighty (180) day period, the minimum mandatory fine shall be seven hundred fifty dollars (\$750.00).
- C. For any further violations within a one hundred eighty (180) day period, the minimum mandatory fine shall be one thousand dollars (\$1,000.00) or imprisonment in the county jail for a period not exceeding six months, or both.

(Ord. 847 § 10, 2006)

APPENDIX 5.1:

**STUDY AREA PHOTOS** 



This page intentionally left blank





L1-E 33, 54' 48.180000"117, 18' 49.890000"



L1-N 33, 54' 48.140000"117, 18' 50.050000"



L1-S 33, 54' 48.220000"117, 18' 49.830000"



L1-W 33, 54' 48.240000"117, 18' 49.940000"



L2-E 33, 54' 48.290000"117, 18' 26.570000"



L2-N 33, 54' 48.290000"117, 18' 26.570000"



L2-S 33, 54' 48.290000"117, 18' 26.570000"



L2-W 33, 54' 48.290000"117, 18' 26.570000"



L3-E 33, 54' 48.360000"117, 18' 9.490000"



L3-N 33, 54' 48.320000"117, 18' 9.460000"



L3-S 33, 54' 48.360000"117, 18' 9.490000"



L3-W 33, 54' 48.390000"117, 18' 9.490000"



L4-E 33, 54' 12.760000"117, 17' 37.870000"



L4-N 33, 54' 12.780000"117, 17' 37.870000"



L4-S 33, 54' 12.760000"117, 17' 37.870000"



L4-W 33, 54' 12.760000"117, 17' 37.900000"



L5-E 33, 54' 6.060000"117, 17' 56.080000"



L5-N 33, 54' 6.100000"117, 17' 56.140000"



L5-S 33, 54' 6.050000"117, 17' 56.110000"



L5-W 33, 54' 6.100000"117, 17' 56.110000"



L6-E 33, 53' 53.070000"117, 18' 14.210000"



L6-N 33, 53' 53.110000"117, 18' 14.210000"



L6-S 33, 53' 53.070000"117, 18' 14.210000"



L6-W 33, 53' 53.080000"117, 18' 14.210000"



L7-E 33, 54' 1.540000"117, 19' 3.130000"



L7-N 33, 54' 1.540000"117, 19' 3.130000"



L7-S 33, 54' 1.530000"117, 19' 3.150000"



L7-W 33, 54' 1.540000"117, 19' 3.130000"



L8-E 33, 54' 14.590000"117, 19' 13.150000"



L8-N 33, 54' 14.590000"117, 19' 13.180000"



L8-S 33, 54' 14.590000"117, 19' 13.180000"



L8-W 33, 54' 14.590000"117, 19' 13.180000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

This page intentionally left blank



						24-Ho	our Noise Le	evel Meas	urement S	Summary						
	Friday, July				Location	: L1-Located		,	ear single-fa	amily	Meter	: Piccolo II				: 14064
Project:	West Camp	ous Upper P	Plateau			residence at	7602 Greeno	ck Way.							Analyst:	: A. Khan
							Hourly L <sub>eq</sub> a	IBA Readings	(unadjusted)	)						
85.0	)															
<b>₹</b> 80.0																
(Vgp) 65.0 80.0 75.0 70.0	ξ <b> </b>															
60.0	ή IIII															
<u>≻</u> 55.0 1 50.0									- <u>m</u>	0 - N			<mark>∞                                    </mark>		-	
<b>AlunoH</b> 40.0		50.5	49.1	51.0 49.9	51.8	<mark>53.1</mark> 51.8	50.9	50.4	54.3	24.0	22.6	23.3 23.3	52.8 52.3	<b>23.2</b>	<b>50.0</b> 49.2	54.0
35.0	5 <b></b>		-												-	+
	0	1	2 3	4 5	6	7 8	91		12 1 eginning	.3 14	15 1	.6 17	18 19	20	21 22	23
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	1.8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	44.5	49.1	42.6	48.7	48.1	47.1	46.5	44.6	43.9	43.1	42.9	42.7	44.5	10.0	54.5
	1	50.5	61.4	41.8	61.2	61.0	59.3	55.0	46.5	44.8	42.3	42.1	41.9	50.5	10.0	60.5
Nicht	2	49.1	60.4	42.2	60.1	59.8	57.2	53.3	44.6	43.5	42.6	42.4	42.3	49.1	10.0	59.1
Night	3 4	45.4 51.0	52.3 60.2	42.1 43.5	52.0 60.0	51.6 59.7	50.2 58.8	49.2 57.0	45.2 49.9	43.6 45.0	42.5 44.0	42.4 43.8	42.2 43.6	45.4 51.0	10.0 10.0	55.4 61.0
	5	49.9	59.9	46.7	57.5	56.5	54.5	53.3	49.4	43.0	44.0	46.9	46.8	49.9	10.0	59.9
	6	51.8	59.8	47.3	59.5	59.0	57.3	55.7	51.9	49.4	47.8	47.6	47.4	51.8	10.0	61.8
	7	53.1	69.0	44.6	68.1	66.4	62.6	60.4	53.7	48.0	45.3	45.0	44.7	53.1	0.0	53.1
	8	51.8 50.9	74.4 71.1	45.3 43.4	74.1 70.5	73.9 69.7	73.3 66.9	72.5 64.6	66.3 57.8	58.1 51.1	46.7 44.7	46.0 44.2	45.6 43.6	51.8 50.9	0.0 0.0	51.8 50.9
	10	52.3	60.9	43.2	60.5	59.9	58.5	57.1	52.9	49.4	44.7	43.8	43.4	52.3	0.0	52.3
	11	50.4	58.9	41.5	58.6	58.3	56.8	55.2	50.9	46.6	42.3	42.0	41.7	50.4	0.0	50.4
	12	54.3	64.5	43.1	63.9	63.3	61.8	60.7	56.7	52.7	45.2	44.5	43.3	54.3	0.0	54.3
Day	13 14	54.0 54.2	64.7 67.3	45.1 46.6	64.3 67.0	63.7 66.7	62.2 64.2	60.2 61.2	54.7 54.7	50.5 50.6	46.2 47.4	45.7 47.1	45.2 46.7	54.0 54.2	0.0 0.0	54.0 54.2
Day	14	52.6	66.9	40.0	66.6	65.9	64.2	61.9	52.6	48.5	47.4	47.1	40.7	52.6	0.0	52.6
	16	52.9	62.0	46.4	61.3	60.4	58.6	57.1	53.3	50.0	47.3	47.0	46.5	52.9	0.0	52.9
	17	53.3	62.7	45.7	62.3	61.6	60.0	58.3	52.7	49.2	46.6	46.2	45.9	53.3	0.0	53.3
	18 19	52.8 52.3	62.9 67.8	44.0 43.2	62.3 67.3	61.7 66.5	59.4	57.7 61.9	52.3 53.9	48.5 48.8	44.9	44.5 43.7	44.1 43.3	52.8 52.3	0.0 5.0	52.8 57.3
	19 20	52.3 53.2	67.8 62.9	43.2 42.2	67.3 62.5	66.5 62.0	64.3 60.7	61.9 58.7	53.9 53.4	48.8 46.7	44.1 43.0	43.7 42.6	43.3 42.3	52.3 53.2	5.0	57.3 58.2
	20	50.0	60.3	41.7	59.9	59.3	56.6	54.6	49.3	45.0	42.4	42.1	41.8	50.0	5.0	55.0
Night	22	49.2	58.3	42.9	58.0	57.6	56.2	54.3	48.3	45.3	43.4	43.2	43.0	49.2	10.0	59.2
Ū	23	54.0	65.6	42.5	64.7 <b>L1%</b>	64.0 <b>L2%</b>	61.5 <b>L5%</b>	59.2 <b>L8%</b>	51.4 <b>L25%</b>	45.8 <b>L50%</b>	42.9 <b>L90%</b>	42.8 <b>L95%</b>	42.6 <b>L99%</b>	54.0	10.0 L <sub>eg</sub> (dBA)	64.0
Timeframe	Hour Min	L <sub>eq</sub> 50.0	L <sub>max</sub> 58.9	L <sub>min</sub> 41.5	58.6	58.3	56.6	<b>L8%</b> 54.6	49.3	45.0	42.3	42.0	41.7		Daytime	Nighttime
Day	Max	54.3	74.4	46.6	74.1	73.9	73.3	72.5	66.3	58.1	47.4	47.1	46.7	24-Hour	(7am-10pm)	
Energy /	Average	52.7		verage:	64.6	64.0	62.0	60.1	54.3	49.6	45.1	44.7	44.3	<b>FA A</b>	<b>F2 -</b>	<b>FO 3</b>
Night	Min Max	44.5 54.0	49.1 65.6	41.8 47.3	48.7 64.7	48.1 64.0	47.1 61.5	46.5 59.2	44.6 51.9	43.5 49.4	42.3 47.8	42.1 47.6	41.9 47.4	52.0	52.7	50.3
Energy /		50.3		/erage:	58.0	57.5	55.8	53.7	48.0	49.4	47.8	47.0	47.4			



						24-Ho	our Noise Lo	evel Meas	urement S	ummary						
	1.	luly 22, 2021 ous Upper Pla	ateau		Location	: L2 - Located residence at		,	0	mily	Meter	: Piccolo II			JN: Analyst:	14064 A. Khan
							Hourly L <sub>eq</sub> o	dBA Readings	(unadjusted)							
85.0									1		1 1					
(80.0 75.0 70.0	3															
<b>5</b> 70.0																
<b>_</b> " 60.0	3															
65.0 60.0 <b>1 / Juno 4</b> 5.0 40 0	<b>1</b>	6. x	46.0	47.7 52.5	54.8	52.8 51.7	2.2	50.6 50.6	50.7	51.6	5.3	50.4 49.3	50.7 53.5	54.5	<b>50.2</b> 45.4	
± 40.0 35.0	) — 4 —	44.	4	- <del>.</del>		52 51	52.	<u> </u>	- ŭ i	51 51	52	50. 49.	- <u>0</u> - <u>0</u> -		2	43
	0	1 2	3	4 5	6	7 8	9 1	.0 11	12 1	.3 14	15 2	16 17	18 19	20	21 22	23
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	eginning L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	41.4	49.6	38.7	49.3	48.9	46.5	44.3	40.4	39.8	39.1	39.0	38.8	41.4	10.0	51.4
	1	44.9	69.3	39.2	68.4	66.8	61.3	56.0	45.5	41.6	39.7	39.5	39.3	44.9	10.0	54.9
NIC - La	2	45.8	55.6	40.3	54.8	54.1	52.0	50.5	44.5	42.2	40.9	40.7	40.4	45.8	10.0	55.8
Night	3	46.0 47.7	54.4 58.1	43.1 44.4	54.1 57.9	53.2 57.4	50.0 55.6	48.1 54.4	45.6 49.7	44.7 46.0	43.7 44.9	43.5 44.7	43.3 44.5	46.0 47.7	10.0 10.0	56.0 57.7
	5	52.5	58.9	44.4	57.9	57.2	56.0	55.5	53.5	51.7	44.9	44.7	44.5	52.5	10.0	62.5
	6	54.8	65.4	45.9	64.9	64.1	61.5	59.5	55.8	53.1	48.5	47.6	46.4	54.8	10.0	64.8
	7	52.8	65.6	43.2	65.2	64.5	61.3	59.3	54.4	50.7	45.4	44.6	43.6	52.8	0.0	52.8
	8	51.7	69.1	46.2	68.7	68.5	67.8	67.2	61.7	57.9	52.2	50.4	47.3	51.7	0.0	51.7
	9	52.2	64.3	40.6	63.9	63.0	59.4	56.9	52.4	49.2	42.8	41.9	40.9	52.2	0.0	52.2
	10 11	50.4 50.6	59.3 62.3	41.0 41.5	58.9 61.8	58.3 61.2	56.1 58.3	54.5 55.7	51.0 51.1	47.8	43.1 43.5	42.1 42.7	41.3 41.9	50.4 50.6	0.0 0.0	50.4 50.6
	11	50.6	74.0	41.5	73.3	72.3	58.3 68.9	66.2	51.1	48.1 52.5	43.5	42.7	41.9	50.6	0.0	50.6
	13	52.7	66.2	41.8	65.5	64.7	62.8	61.5	57.0	50.5	43.5	42.7	42.0	52.7	0.0	52.7
Day	14	51.6	62.2	43.2	61.2	60.1	57.2	55.5	51.8	48.6	44.6	44.0	43.4	51.6	0.0	51.6
	15	52.3	62.6	45.2	61.9	60.7	57.5	55.7	52.2	49.6	46.7	46.1	45.4	52.3	0.0	52.3
	16	50.4	67.2	43.8	66.6	65.8	62.4	57.5	50.2	47.2	44.5	44.2	43.9	50.4	0.0	50.4
	17	49.3	62.5	43.9	61.9	60.8	56.6	53.4	46.9	45.4	44.3	44.1	43.9	49.3	0.0	49.3
	18 19	50.7 53.5	64.5 66.9	42.3 39.8	64.0 66.3	63.1 65.6	61.1 64.2	59.7 62.8	53.7 55.1	48.0 45.0	43.4 40.6	42.9 40.3	42.5 40.0	50.7 53.5	0.0 5.0	50.7 58.5
	20	54.5	65.8	37.9	65.4	64.5	61.7	59.8	53.1	45.4	39.3	38.5	38.1	54.5	5.0	59.5
	20	50.2	60.6	37.5	59.8	59.0	56.4	54.8	51.0	44.3	38.7	38.0	37.6	50.2	5.0	55.2
Night	22	45.4	58.1	37.9	57.4	56.1	52.1	48.5	43.1	40.1	38.5	38.2	38.1	45.4	10.0	55.4
-	23	43.2	55.2	38.0	54.7	53.5	49.6	46.2	39.9	39.2	38.4	38.3	38.1	43.2	10.0	53.2
Timeframe	Hour Min	L <sub>eq</sub> 49.3	L <sub>max</sub> 59.3	L <sub>min</sub> 37.5	L1%	<b>L2%</b> 58.3	<i>L5%</i> 56.1	<i>L8%</i> 53.4	<b>L25%</b>	44.3	L90% 38.7	<i>L95%</i> 38.0	<i>L99%</i> 37.6		L <sub>eq</sub> (dBA) Daytime	Nighttim
Day	Max	49.3 54.5	59.3 74.0	46.2	73.3	72.3	68.9	67.2	46.9 61.7	44.3 57.9	52.2	50.4	47.3	24-Hour	Daytime (7am-10pm)	NIGNTTIM (10pm-7ar
Energy	Average	51.8	-	erage:	64.3	63.5	60.8	58.7	53.3	48.7	43.8	43.0	42.2			
Night	Min	41.4	49.6	37.9	49.3	48.9	46.5	44.3	39.9	39.2	38.4	38.2	38.1	50.9	51.8	49.0
	Max	54.8	69.3	46.6	68.4	66.8	61.5	59.5	55.8	53.1	48.5	47.8	47.0			
Energy	Average	49.0	Av	erage:	57.7	56.8	53.8	51.4	46.4	44.3	42.5	42.1	41.8			



						24-He	our Noise L	evel Meas	urement S	Summary						
	11	luly 22, 2021 ous Upper Pla	ateau		Location	: L3 - Located residence at	north of the 20630 Cami	,	near single-f	amily	Meter	: Piccolo II				14064 A. Khan
-							Hourly L <sub>eq</sub>	dBA Readings	(unadjusted	)						
85.0	ו															
	j —															
( <b>80.0</b> 75.0 70.0																
65.0 - 60.0					_											
<b>A</b> 55.0 50.0 45.0 40.0		4 -	i m	.0 m		m L	2	ν ν			<u>ס</u>	9 7	<u>ο</u> , Γ.	<u>स्</u>	4 0	9
<b>∸</b> 40.0	0 - 4 -	43.4		46.6	50.8	50.3 48.7	48.	50.1	48.0	50.7 46.7	47.9	<b>51.</b>	52	21.	<mark>45</mark> .4 44.6	41.(
35.0		1 7		4 5		7 0		10 11	12	12 14	15	16 17	10 10	20	21 22	22
	0	1 2	. 3	4 5	6	7 8	9	10 11 Hour B	12 eginning	13 14	15 :	16 17	18 19	20	21 22	23
imeframe	Hour	L <sub>eq</sub>	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L
	0	45.9 43.4	61.6	39.2 38.7	61.1 50.5	60.8 49.8	59.5 48.5	58.4 47.7	49.3 43.9	41.9 40.8	39.9 39.4	39.6 39.2	39.3 38.8	45.9 43.4	10.0	55.9
	2	43.4	51.6 51.5	40.0	50.5	50.3	48.5	47.7	43.9	40.8	40.5	40.4	40.1	43.4	10.0 10.0	53.4
Night	3	43.3	50.8	40.2	50.6	50.2	48.3	46.3	42.6	41.7	40.8	40.6	40.3	43.3	10.0	53.3
	4	46.6	58.4	42.4	57.9	57.2	56.0	55.3	49.6	45.4	43.0	42.7	42.5	46.6	10.0	56.6
	5	49.8	63.7	44.1	62.8	62.0	60.2	58.8	53.6	50.1	44.7	44.5	44.2	49.8	10.0	59.8
	6	50.8 50.3	62.7 65.5	45.7	61.9 64.8	61.1 63.7	58.8 60.9	56.8	51.1 53.0	48.5	46.6	46.3	45.9	50.8 50.3	10.0	60.8 50.3
	8	48.7	66.4	45.3	65.7	65.2	63.8	63.0	59.1	54.1	42.5	46.1	45.5	48.7	0.0	48.7
	9	48.2	65.9	38.8	64.8	63.4	60.9	59.0	52.4	46.8	40.3	39.6	39.1	48.2	0.0	48.2
	10	51.7	62.2	39.9	61.5	60.9	59.1	57.9	52.5	46.8	41.4	40.7	40.1	51.7	0.0	51.7
	11	50.5	62.1	42.8	61.7	61.1	58.7	57.4	54.2	49.9	44.5	43.6	43.1	50.5	0.0	50.5
	12 13	48.0 50.7	65.1 67.1	38.5 41.2	64.8 66.7	64.4 66.2	63.1 64.2	61.3 62.2	48.9 55.8	45.1 46.6	39.9 42.1	39.3 41.7	38.7 41.3	48.0 50.7	0.0 0.0	48.0
Day	14	46.7	57.2	41.9	56.4	55.8	54.0	52.0	49.0	45.4	42.7	42.5	42.0	46.7	0.0	46.7
	15	47.9	55.4	44.2	54.9	54.3	52.6	51.3	48.0	46.2	44.8	44.6	44.3	47.9	0.0	47.9
	16	51.6	66.0	45.1	65.3	64.8	63.6	62.7	58.7	55.3	48.9	45.8	45.2	51.6	0.0	51.6
	17 18	49.1 50.9	60.4 66.8	44.4 43.4	59.4 66.0	58.9 65.3	57.8 63.8	57.0 62.5	52.7 57.2	47.8 50.3	45.1 45.0	44.8 44.4	44.5 43.7	49.1 50.9	0.0 0.0	49. 50.
	18 19	50.9	66.8 69.6	43.4	68.8	65.3	63.8	62.5	57.2	50.3	45.0	44.4	43.7	50.9	5.0	50.
	20	51.1	69.2	39.7	68.6	68.1	67.0	65.9	61.4	54.3	41.2	40.6	39.9	51.1	5.0	56.
	21	45.4	54.5	39.6	54.1	53.6	51.1	49.1	45.2	42.7	40.4	40.0	39.7	45.4	5.0	50.4
Night	22	44.6	51.4	40.5	51.1	50.6	49.1	48.0	45.4	42.9	41.1	40.9	40.6	44.6	10.0	54.6
meframe	23 Hour	41.6 L <sub>eq</sub>	47.8 L <sub>max</sub>	38.6 L <sub>min</sub>	47.3 <b>L1%</b>	46.8	45.7 <b>L5%</b>	44.6 <b>L8%</b>	41.6 <b>L25%</b>	40.4 <b>L50%</b>	39.2 <b>L90%</b>	39.0 <b>L95%</b>	38.8 <b>L99%</b>	41.6	10.0 L <sub>eg</sub> (dBA)	51.6
	Min	45.4	54.5	38.5	54.1	53.6	51.1	49.1	45.2	42.7	39.9	39.3	38.7	24-Hour	Daytime	Nightti
Day	Max	52.7	69.6	45.3	68.8	68.1	67.0	65.9	61.4	55.3	48.9	46.1	45.5	24-Hour	(7am-10pm)	(10pm-7
Energy	Average	50.0		erage:	62.9	62.2	60.5	59.0	53.8	48.6	43.3	42.5	42.0	40.0		A.C.
Night	Min Max	41.6 50.8	47.8 63.7	38.6 45.7	47.3 62.8	46.8 62.0	45.7 60.2	44.6 58.8	41.6 53.6	40.4 50.1	39.2 46.6	39.0 46.3	38.8 45.9	49.0	50.0	46.
Energy	Average	46.5		erage:	54.9	54.3	52.7	58.8	46.6	43.7	46.6	46.3	45.9			



							ź	24-Ho	ur Noise	e Leve	el Meas	uremen	t Sun	nmary									
	Thursday, J West Camp		ateau		L	ocation:			south of t 20870 Inc			near singl	e-fami	ly	Me	<i>ter:</i> Pie	colo II				An		14064 A. Khan
,									Hourly L	dBA	Readings	(unadius	ted)									,	
										eq	<i></i>												
85.0 80.0	n ————																						
(80.0 75.0 70.0																							
<b>)</b> 65.0 <b>–</b> 60.0	ğ —																						
60.0 <b>ک</b> 55.0 <u>ک</u>																							
<b>1</b> 55.0 50.0 45.0		μ α		45.8	46.8	48.2	6.	0	48.0	5	00	47.8	2	46.7	m	46.8	6	4	4	<u>∞</u>	47.0	4	<u> </u>
± 40.0 35.0	0 - 4 -	42	- <del>1</del>	- 45	46	48	49.	45.	48	51.	44.	47	23	46	45.	46	45.	45.	47	49.	47	45.	42
55.0	0	1 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	-			-		-	-	-	-			eginning											
Timeframe	Hour	L <sub>eq</sub>	L max	L mir	n	L1%	L2	2%	L5%		L8%	L25%	<u> </u>	L50%	L90%	6	L95%	L9	9%	L <sub>eq</sub>	A	dj.	Adj. L <sub>e</sub>
	0	45.0	47.8	42.9		47.4		7.2	46.7		46.3	45.3		44.8	43.8		43.5		3.1	45.0	10		55.0
	1 2	42.5 42.8	45.2 47.1	41.3		45.0 46.6		4.7 5.1	44.0 45.0		43.6 44.4	42.8		42.2 42.4	41.6		41.5 41.6		1.3 1.4	42.5 42.8		).0 ).0	52.5 52.8
Night	3	42.8	47.1	41.3		46.6 43.3		3.1	45.0		44.4 42.5	42.9		42.4 41.1	41.7		41.6		1.4 0.3	42.8 41.4		).0 ).0	52.8 51.4
Night.	4	45.8	52.5	41.9		52.3		2.0	51.4		50.6	45.3		43.1	42.3		42.1		2.0	45.8		).0	55.8
	5	46.8	60.3	43.0	0	59.7	58	8.7	55.2		52.3	45.3		44.1	43.4		43.3	4	3.1	46.8		0.0	56.8
	6	48.2	54.3	45.0	0	53.7		3.2	51.9		50.8	48.8		47.2	45.7	,	45.5		5.2	48.2		0.0	58.2
	7	49.9	71.0	43.2		70.9		0.7	70.2		68.2	60.4		53.7	44.7		43.9		3.4	49.9		.0	49.9
	8	45.0	60.8	42.9		60.4		0.0	58.8		57.2	52.5		50.1	43.9		43.4		3.0	45.0		.0	45.0
	9 10	48.0 51.7	70.7 62.0	42.1		70.0 61.5		9.3 0.9	64.5 57.3		61.1 55.4	53.1 51.9		47.4 49.9	43.4		42.8 47.0		2.3 6.6	48.0 51.7		0.0 0.0	48.0 51.7
	10	44.8	56.3	38.6		55.6		4.9	52.2		49.9	46.5		43.0 39			39.0		8.7	44.8	0		44.8
	12	47.8	59.1	43.2		58.4		7.5	56.0		54.6	51.2		48.7	44.4		44.0		3.3	47.8	0		47.8
	13	53.2	77.2	48.7		76.8		5.0	73.4		71.6	63.9		59.1	51.6		50.5		9.1	53.2	0		53.2
Day	14	46.7	63.1	39.7		62.8		2.1	60.1		58.3	51.1		45.0	40.4		40.1		9.8	46.7		.0	46.7
	15	45.3	57.6	41.6		57.0 55.0		5.1	53.6		51.7	48.0 48.3		44.2	42.3		42.0		1.7 3.8	45.3	0		45.3 46.8
	16 17	46.8 45.9	55.3 52.9	43.		55.0 52.6		4.5 2.4	52.7 50.5		51.2 48.7	46.0		46.7 44.7	44.4		44.1 42.9		5.0 2.7	46.8 45.9	0		40.8 45.9
	18	45.4	66.4	39.9		66.1		5.7	63.9		62.1	52.3		44.6	40.6		40.3		0.0	45.4	0		45.4
	19	47.4	65.4	38.5	5	65.0		4.7	63.6		62.3	56.0		48.4	39.9		39.2	3	8.7	47.4	5		52.4
	20	49.8	60.8	38.7		60.5		0.2	59.6		58.9	53.9		45.0	39.8		39.3		8.9	49.8		.0	54.8
	21	47.0	52.8 55.5	44.4		52.3		1.8 3.9	50.6		49.7	47.0		46.1	44.6		44.5 42.0		4.5	47.0		.0 ).0	52.0
Night	22 23	45.4 42.7	45.5	41.8		55.0 45.2		3.9 4.9	50.9 44.2		48.1 43.7	44.0		43.0 42.5	42.2		42.0 41.8		1.8 1.6	45.4 42.7		).0 ).0	55.4 52.7
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>mir</sub>		L1%		2%	L5%		L8%	L25%		L50%	L90%		L95%		9%		L <sub>eq</sub> (		52.7
Day	Min	44.8	52.8	38.5	5	52.3		1.8	50.5		48.7	46.0		43.0	39.3		39.0		8.7	24-Hour	Day	time	Nighttin
	Max	53.2	77.2	48.	7	76.8	_	5.0	73.4		71.6	63.9		59.1	51.6		50.5		9.1		(7am-	10pm)	(10pm-7a
Energy	Average	48.4		erage:	2	61.7	_	1.1	59.1		57.4	52.1		47.8	43.3		42.9	_	2.4	47.4	48	л	<b>ЛЕ</b> (
Night	Min Max	41.4 48.2	43.5 60.3	40.2		43.3 59.7		3.1 3.7	42.7 55.2		42.5 52.3	41.7		41.1 47.2	40.5		40.4 45.5		0.3 5.2	47.4	48	.4	45.0
Energy	Average	45.0		verage:		49.8	_	9.3	48.0		46.9	44.3		43.4	43.7		42.4	_	2.2				



						24-Ho	our Noise Le	evel Meas	urement S	ummary						
	Thursday, J West Camp				Location	: L5 - Located residence at	south of the 8256 Garden	,	0	mily	Meter	Piccolo II				14064 A. Khan
-							Hourly L <sub>ea</sub> d	IBA Readings	(unadjusted)						,	
85.0	2															
( <b>80.0</b> 75.0 70.0			_													
،65.0 60.0 <b>ت</b>																
<b>1</b> 55.0 <b>1</b> 55.0 45.0 45.0		0 0	N 9	0 1		<b>0</b> न	<u></u>	ο υ	10	v m	<u>ь</u>		H N	- Line -	8 1	<b>N</b>
<b>∸</b> 40.0	) — 4 —	44.0	4 11	43.0	49.4	48.0 47.1		46.		<b>51</b>	20.1	50.1	48.1 47.7	48.1	<mark>45.</mark> 8 43.7	43
35.0		1 7		4 5	6	7 0	0 1	0 11	12 1	2 14	15 1	6 17	19 10	20	21 22	
	0	1 2	3	4 5	6	7 8	9 1	0 11 Hour Be	12 1 eginning	3 14	15 1	.6 17	18 19	20	21 22	23
- imeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	45.1	47.6	43.8	47.4	47.2	46.8	46.5	45.5	44.8	44.1	44.0	43.8	45.1	10.0	55.1
	1 2	44.0 45.0	47.9 49.8	42.5 43.1	47.7 49.5	47.5 49.0	46.0 48.1	45.1 47.2	44.2 45.3	43.7 44.3	42.9 43.5	42.8 43.4	42.6 43.2	44.0 45.0	10.0 10.0	54.0 55.0
Night	3	41.2	44.4	39.9	43.9	43.4	42.6	47.2	41.5	44.5	40.3	40.2	40.0	41.2	10.0	51.2
0	4	43.0	52.6	41.7	52.4	52.3	52.1	51.6	46.5	43.2	42.1	41.9	41.8	43.0	10.0	53.0
	5	48.7	53.5	47.5	53.1	52.6	51.2	50.1	48.5	48.2	47.7	47.7	47.5	48.7	10.0	58.7
	6	49.4	57.8	45.9	57.3	56.5	54.5	52.8	48.7	47.5	46.3	46.2	46.0	49.4	10.0	59.4
	7	48.0	66.5	42.4	66.4	65.9	63.8	62.1	50.4	46.6	43.3	43.1	42.6	48.0	0.0	48.0
	8 9	47.1 46.5	68.5 61.5	49.7 41.2	68.1 61.2	67.7 60.8	66.3 58.7	64.1 57.0	59.5 51.1	56.3 47.8	51.4 42.2	50.7 41.8	50.0 41.4	47.1 46.5	0.0 0.0	47.1 46.5
	10	49.8	59.6	40.9	59.1	58.4	56.5	55.0	51.0	46.6	42.5	41.9	41.2	49.8	0.0	49.8
	11	46.5	58.2	39.6	57.7	56.9	54.1	51.9	47.3	43.1	40.3	40.0	39.7	46.5	0.0	46.5
	12	46.5	70.3	40.6	67.8	66.1	61.6	58.1	50.1	46.1	41.4	41.1	40.7	46.5	0.0	46.5
	13	51.2	79.2	46.2	78.5	77.5	74.3	72.0	64.5	58.7	49.0	47.6	46.5	51.2	0.0	51.2
Day	14	51.3	65.8	44.5	65.4	64.9	63.2	61.4	56.3	51.4	45.7	45.1	44.7	51.3	0.0	51.3
	15 16	50.5 51.0	69.4 60.8	55.4 44.5	69.0 60.3	68.6 59.7	67.5 58.0	66.8 56.8	64.7 52.4	62.8 49.3	57.6 45.7	56.7 45.1	55.7 44.6	50.5 51.0	0.0 0.0	50.5 51.0
	10	50.1	59.8	44.5	58.9	57.9	55.4	53.9	50.5	49.3	45.4	44.9	44.4	50.1	0.0	50.1
	18	48.1	69.0	41.8	68.7	68.2	66.2	64.0	54.4	47.7	42.9	42.5	42.0	48.1	0.0	48.1
	19	47.7	68.5	39.6	68.2	68.0	67.1	65.3	56.9	47.9	40.6	40.2	39.7	47.7	5.0	52.7
	20	48.5	64.6	42.5	64.3	63.9	63.2	62.7	56.9	48.9	43.2	42.9	42.6	48.5	5.0	53.5
	21 22	45.8	55.3 51.7	40.7	54.9 51.3	53.9 50.6	51.3 48.5	49.9 47.0	45.5	43.0 41.8	41.2	41.0	40.8	45.8 43.7	5.0	50.8 53.7
Night	22	43.7	49.8	40.2	49.5	48.8	46.9	47.0	43.5	41.8	40.7	40.3	40.3	43.7	10.0	53.7
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min	45.8	55.3	39.6	54.9	53.9	51.3	49.9	45.5	43.0	40.3	40.0	39.7	24-Hour	Daytime	Nighttim
	Max Average	51.3 49.0	79.2	55.4	78.5 64.6	77.5 63.9	74.3 61.8	72.0 60.1	64.7 54.1	62.8 49.6	57.6	56.7	55.7 43.8		(7am-10pm)	(10pm-7ai
	Average Min	49.0	44.4	erage: 39.9	43.9	43.4	42.6	42.3	54.1 41.5	49.6	44.8	44.3	43.8	48.0	49.0	45.6
Night	Max	49.4	57.8	47.5	57.3	56.5	54.5	52.8	41.5	48.2	47.7	47.7	47.5	0.0	77.0	-J.U
Energy	Average	45.6		erage:	50.2	49.8	48.5	47.6	45.2	44.2	43.3	43.2	43.0			



Date:	Thursday, Ju	uly 22, 2021			Location	<b>24-Hc</b> : L6 - Located	our Noise L south of the				Meter:	Piccolo II			JN:	14064
	West Camp		ateau			residence at	8360 Clover	Creek Road.	Ū						Analyst:	A. Khan
							Hourly L <sub>eq</sub>	dBA Readings	(unadjusted)							
85.0	о								1							
(80.0 75.0 70.0	ע די															
<b>g</b> 70.0 65.0 65.0	3															
60.0 ° <b>د۔</b> 55.0 <u>ح</u>	3				61.7	2 2		<u> </u>	·	<u>vi — coi</u> —		5.8	2.6	<u> </u>	N 0	
1 55.0 50.0 45.0 45.0	23.5	50.7	23.5	55.8	61	62.	<mark>61.</mark>	60.	60.1	60. 60.	61. 67	62	62. 62.		59.2 57.6	55.0
≖ 40.0 35.0		- 20	і — ій —													
	0	1 2	3	4 5	6	7 8	9 :	10 11	12 1	.3 14	15 10	5 17	18 19	20	21 22	23
									eginning							
imeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L
	0	53.5 50.7	65.7 63.4	39.1 39.6	65.3 63.0	64.7 62.3	61.7 58.6	59.2 55.5	48.0 45.0	41.4 40.7	39.4 39.9	39.3 39.8	39.1 39.7	53.5 50.7	10.0 10.0	63.5 60.7
	2	49.9	62.1	41.8	61.6	60.7	57.4	54.6	45.2	43.0	42.3	42.1	41.9	49.9	10.0	59.9
Night	3	53.5	67.1	40.0	66.5	65.6	61.8	57.8	44.2	41.2	40.4	40.3	40.1	53.5	10.0	63.
	4	55.8	69.0	42.1	68.6	67.6	63.9	60.3	48.5	43.8	42.5	42.4	42.2	55.8	10.0	65.
	5	58.5	72.7	43.5	72.2	71.3	67.7	64.9	54.6	47.9	44.0	43.8	43.6	58.5	10.0	68.5
	6	61.7 62.2	73.1	42.1	72.7	71.9	69.3 70.0	67.5 67.9	59.6 59.9	52.1 52.4	43.4 43.8	42.7 42.7	42.2	61.7 62.2	10.0	71.
	8	62.7	73.8	40.4	73.4	72.6	70.3	68.7	62.2	55.3	42.5	41.5	40.6	62.7	0.0	62.7
	9	61.1	72.7	40.1	72.3	71.4	68.9	67.3	59.8	51.4	41.8	41.1	40.3	61.1	0.0	61.
	10	61.7	73.0	53.0	72.6	71.7	69.3	67.5	60.8	55.9	53.6	53.4	53.1	61.7	0.0	61.7
	11	60.7	71.6	50.0	71.2	70.2	67.9	66.2	59.5	53.6	50.6	50.4	50.1	60.7	0.0	60.7
	12 13	60.1 60.3	71.2 72.3	38.7 41.9	70.8 71.9	69.9 71.2	67.8 69.4	66.0 67.9	58.6 61.4	50.2 53.1	40.2 44.6	39.5 43.5	38.9 42.2	60.1 60.3	0.0 0.0	60.3 60.3
Day	13	60.8	76.3	40.6	75.8	75.0	72.4	70.2	61.6	54.3	44.0	41.4	40.8	60.8	0.0	60.8
,	15	61.7	73.2	41.7	72.7	71.8	69.3	67.7	61.2	53.4	43.4	42.4	41.8	61.7	0.0	61.
	16	62.1	72.8	42.4	72.3	71.4	69.0	67.7	61.9	54.2	43.9	43.3	42.6	62.1	0.0	62.3
	17	62.8	73.8	41.9	73.3	72.5	70.1	68.7	63.3	56.1	43.9	42.7	42.1	62.8	0.0	62.
	18 19	62.2 62.6	73.7 72.7	40.0 40.9	73.2 72.4	72.6 71.7	70.4 70.0	68.8 68.5	62.7 62.4	54.6 55.1	42.2 43.3	41.1 42.0	40.2 41.0	62.2 62.6	0.0 5.0	62. 67.
	20	60.7	71.6	39.0	72.4	70.5	68.4	66.7	59.3	49.6	43.5	39.8	39.2	60.7	5.0	65.
	21	59.2	70.7	37.2	70.2	69.4	66.8	65.0	57.4	48.2	38.3	37.7	37.3	59.2	5.0	64.
Night	22	57.6	69.8	37.9	69.3	68.5	65.6	63.2	54.1	46.7	38.9	38.6	38.2	57.6	10.0	67.6
U	23 Hour	55.0	67.7	37.8	67.3 <b>L1%</b>	66.3 <b>L2%</b>	63.3 L5%	60.6 <b>L8%</b>	49.0 <b>L25%</b>	41.0 <b>L50%</b>	38.3 <b>L90%</b>	38.1 <b>L95%</b>	37.9 <b>L99%</b>	55.0	10.0 L <sub>eq</sub> (dBA)	65.0
imeframe	Hour Min	L <sub>eq</sub> 59.2	L <sub>max</sub> 70.7	L <sub>min</sub> 37.2	70.2	69.4	66.8	<i>L8%</i>	57.4	48.2	38.3	37.7	37.3		L <sub>eq</sub> (авА) Daytime	Nightt
Day	Max	62.8	76.3	53.0	75.8	75.0	72.4	70.2	63.3	56.1	53.6	53.4	53.1	24-Hour	(7am-10pm)	(10pm-7
Energy	Average	61.5	_	erage:	72.5	71.6	69.3	67.6	60.8	53.2	43.7	42.8	42.1		<u> </u>	= c
Night	Min	49.9	62.1	37.8	61.6	60.7	57.4	54.6	44.2	40.7	38.3	38.1	37.9	60.2	61.5	56.
-	Max Average	61.7 56.6	73.1	43.5 erage:	72.7 67.4	71.9 66.5	69.3 63.3	67.5 60.4	59.6 49.8	52.1 44.2	44.0	43.8 40.8	43.6			



						24-H	our Noise L	evel Meas	urement S	ummary						
		July 22, 2021 pus Upper Pl			Location		l south of the Church at 199				Meter	: Piccolo II				14064 A. Khan
2							Hourly L	dBA Readings	(unadjusted)							
05.0							, cy									
85.0 80.0	) 🗕 🚽															
( <b>Yap</b> ) 80.0 75.0 70.0	)															
( <b>Vgp</b> ) 75.0 70.0 65.0 60.0																
- 55.0	ξ ———						<b>o</b>									
1 / 55.0 50.0 45.0 45.0	8	46.5	44.7	47.4	50.2	50.2 50.9	<u>.</u>	50.9 48.4	51.0	50.6	50.5	<b>50.9</b>	51.8 53.1	<mark>53.5</mark>	<mark>49.6</mark> 48.1	49.4
± 40.0 35.0		4 4	t 4	4 4	- u	<u>0</u> 0		<u>v</u> 4		<u>v</u> 4	- n	4 <u>0</u>	<u>0</u> 0		4 4	4
	0	1 2	2 3	4 5	6	7 8	9 1	LO 11		L3 14	15	16 17	18 19	20	21 22	23
									eginning							
neframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj.
	0 1	43.8 46.5	47.0 51.9	42.1 44.3	46.7 51.6	46.4 51.3	45.9 50.2	45.4 49.2	44.1 46.3	43.4 45.6	42.6 44.8	42.4 44.7	42.3 44.5	43.8 46.5	10.0 10.0	53. 56.
	2	45.2	48.3	43.5	48.1	48.0	47.5	47.0	45.6	44.8	43.9	43.8	43.6	45.2	10.0	55.
Night	3	44.7	48.6	43.2	48.4	48.1	47.3	46.4	44.9	44.3	43.6	43.5	43.3	44.7	10.0	54
	4	47.4	53.8	45.1	53.5	53.3	52.4	51.5	49.3	47.2	45.5	45.4	45.2	47.4	10.0	57
	5	48.3	54.9	45.8	54.4	53.9	53.0	52.3	49.9	47.5	46.3	46.1	45.9	48.3	10.0	58.
	6	50.2	54.0	47.9	53.7 55.9	53.4	52.7 54.3	52.2 53.3	50.8 50.8	49.7 49.0	48.4	48.2	48.0	50.2 50.2	10.0	60. 50.
	8	50.2	70.8	40.5	70.7	70.5	69.8	69.4	65.7	58.6	47.2	40.9	40.7	50.2	0.0	50.
	9	56.0	62.0	52.5	61.7	61.3	60.6	59.9	58.1	56.2	53.9	53.5	52.7	56.0	0.0	56
	10	50.9	58.8	46.1	58.4	57.8	56.9	56.3	54.1	51.6	47.2	46.7	46.3	50.9	0.0	50.
	11	48.4	57.6	42.7	57.1	56.4	54.8	53.8	49.2	46.4	43.7	43.2	42.8	48.4	0.0	48.
	12	51.0	60.3	44.6	59.8	59.4	58.3	57.4	52.6	49.4	45.7	45.1	44.7	51.0	0.0	51.
Day	13 14	50.6 49.9	62.7 59.1	44.9 43.7	62.2 58.7	61.7 58.2	60.6 57.0	59.9 55.7	57.3 51.1	51.7 47.4	46.2 44.6	45.7 44.2	45.2 43.8	50.6 49.9	0.0 0.0	50. 49.
2007	15	50.5	61.3	43.5	60.7	60.1	58.9	58.1	54.3	48.3	44.4	44.0	43.7	50.5	0.0	50
	16	49.9	59.1	44.1	58.8	58.3	56.5	55.3	51.5	47.8	45.0	44.6	44.2	49.9	0.0	49.
	17	50.9	58.8	44.9	58.4	58.0	56.8	55.8	50.4	48.3	45.9	45.5	45.1	50.9	0.0	50.
	18	51.8	62.9	44.3	62.5	62.2	61.1	60.0	52.9	48.6	45.7	45.2	44.5	51.8	0.0	51
	19 20	53.1 53.5	66.4 61.0	43.1 42.8	66.0 60.7	65.6 60.3	64.5 59.1	62.8 58.5	54.9 54.9	48.1 50.0	44.5 44.3	44.0 43.6	43.4 43.0	53.1 53.5	5.0 5.0	58. 58.
	20	49.6	59.3	41.2	58.6	57.8	56.1	55.1	49.0	45.6	42.1	41.7	41.3	49.6	5.0	54.
Night	22	48.1	56.3	42.8	55.8	55.3	53.4	52.3	47.9	46.0	43.6	43.3	43.0	48.1	10.0	58.
÷	23	49.4	59.8	43.4	59.3	58.4	56.0	54.0	47.5	45.5	44.0	43.7	43.5	49.4	10.0	59.
meframe	Hour Min	L <sub>eq</sub> 48.4	L <sub>max</sub> 56.3	L <sub>min</sub> 41.2	L1%	<b>L2%</b>	<i>L5%</i> 54.3	<i>L8%</i>	<b>L25%</b> 49.0	45.6	42.1	<i>L95%</i> 41.7	<b>L99%</b> 41.3		L <sub>eq</sub> (dBA) Daytime	Nightt
Day	Max	48.4	70.8	41.2 52.5	70.7	70.5	54.3 69.8	53.3 69.4	49.0 65.7	45.6 58.6	53.9	41.7 53.5	41.3 52.7	24-Hour	(7am-10pm)	(10pm-
Energy /		51.6		erage:	60.7	60.2	59.0	58.1	53.8	49.8	46.0	45.5	45.0			
Night	Min	43.8	47.0	42.1	46.7	46.4	45.9	45.4	44.1	43.4	42.6	42.4	42.3	50.5	51.6	47
•	Max	50.2	59.8	47.9	59.3	58.4	56.0	54.0	50.8	49.7	48.4	48.2	48.0			
Energy /	Average	47.5	Av	erage:	52.4	52.0	50.9	50.0	47.4	46.0	44.8	44.6	44.4			



						24-He	our Noise L	evel Meas	urement S	Summary						
	Thursday, J West Camp				Location	: L8 - Located residence at	west of the F 8079 La Cros		ear single-fa	mily	Met	er: Piccolo II				14064 A. Khan
-							Hourly L <sub>eq</sub>	dBA Readings	(unadjusted	)						
85.0	0															
	n 🗕 🚽															
(80.0 75.0 70.0																
60.0																
<b>A</b> 55.0 50.0 45.0 40.0		-														
9 45.0 40.0	<b>39.7</b>	40.7	39.2	41.3 45.1	47.8	47.7	43.4	46.4	48.5	46.5	42.4	45.9 47.5	44.4 48.8	50.9	<mark>44</mark> .9 45.2	46.2
35.0	0 +												+			
	0	1 2	2 3	4 5	6	7 8	9 2	10 11 Hour B	12 eginning	13 14	15	16 17	18 19	20	21 22	23
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>e</sub>
	0	39.7	41.3	38.7	41.1	41.0	40.7	40.5	40.0	39.5	39.1	39.0	38.8	39.7	10.0	49.7
	1 2	40.7 39.5	45.9 40.9	39.1 38.6	45.7 40.7	45.3 40.6	43.8 40.2	42.5 40.1	40.6 39.7	40.0 39.4	39.5 39.0	39.4 38.9	39.2 38.8	40.7 39.5	10.0 10.0	50.7 49.5
Night	3	39.2	40.5	38.4	40.7	40.0	39.9	39.8	39.4	39.4	38.8	38.7	38.5	39.2	10.0	49.3
0	4	41.3	50.7	39.7	50.5	50.3	49.7	48.9		41.6	40.2 42.1	40.1	39.9	41.3	10.0	51.3
	5	45.1	51.8	40.6	51.0	50.4	48.9	47.9	45.7	44.1		41.7	41.0	45.1	10.0	55.1
	6	47.8	63.6	50.4	62.9	62.4	61.0	60.0	57.7	55.4	51.9	51.4	50.8	47.8	10.0	57.8
	7	47.7 47.4	66.0 74.0	45.0 44.4	65.5 73.5	65.1 73.0	63.3 71.9	61.8 71.4	56.3 66.7	51.5 60.0	46.6 45.3	46.0 44.9	45.3 44.6	47.7 47.4	0.0 0.0	47.7
	9	43.4	56.0	42.2	55.7	55.4	54.7	54.1	51.9	48.5	43.3	42.9	42.3	43.4	0.0	43.4
	10	46.4	57.0	42.3	56.5	56.1	54.9	54.3	51.7	48.5	43.1	42.8	42.5	46.4	0.0	46.4
	11	45.1	53.4	40.7	53.0	52.3	50.1	48.6	45.1	43.0	41.3	41.1	40.8	45.1	0.0	45.1
	12 13	48.5 46.5	54.2 60.1	43.8 40.8	53.7 59.6	53.2 59.1	52.2 58.1	51.5 57.2	49.4 53.0	47.5 47.0	45.2 41.7	44.8 41.4	44.2 41.0	48.5 46.5	0.0 0.0	48.5 46.5
Day	13	40.5	57.6	40.8	57.3	56.7	54.9	53.9	50.0	48.7	46.9	46.5	41.0	49.5	0.0	49.5
· ·	15	45.4	57.2	41.3	56.8	56.2	54.8	53.7	47.3	43.5	41.9	41.7	41.5	45.4	0.0	45.4
	16	45.9	52.5	41.9	52.1	51.6	49.9	48.6	46.3	44.9	42.6	42.3	42.0	45.9	0.0	45.9
	17	47.5	52.2	44.5	51.8	51.4	50.3	49.5	48.1	47.1	45.3	45.0	44.7	47.5	0.0	47.5
	18 19	44.4 48.8	56.8 60.5	40.8 39.9	56.3 60.2	55.8 59.8	54.8 58.7	53.8 57.5	48.0 48.9	42.9 42.5	41.4	41.2 40.3	41.0 40.0	44.4 48.8	0.0 5.0	44.4 53.8
	20	50.9	58.2	48.5	57.0	56.0	54.0	53.0	51.6	49.7	49.0	48.8	48.6	50.9	5.0	55.9
	21	44.9	48.1	44.7	47.0	46.1	45.1	44.9	44.8	44.8	44.7	44.7	44.7	44.9	5.0	49.9
Night	22	45.2	45.4	45.2	45.3	45.3	45.3	45.3	45.3	45.2	45.2	45.2	45.2	45.2	10.0	55.2
- imeframe	23 Hour	46.2 L <sub>eq</sub>	46.3 L <sub>max</sub>	46.1 L <sub>min</sub>	46.3 <b>L1%</b>	46.3 <b>L2%</b>	46.3 <b>L5%</b>	46.3 <i>L8%</i>	46.2 <b>L25%</b>	46.2 <b>L50%</b>	46.2 <b>L90%</b>	46.2 <b>L95%</b>	46.2 <b>L99%</b>	46.2	10.0 L <sub>eg</sub> (dBA)	56.2
	Min	43.4	48.1	39.9	47.0	46.1	45.1	44.9	44.8	42.5	40.5	40.3	40.0	24.110	Daytime	Nighttir
Day	Max	50.9	74.0	48.5	73.5	73.0	71.9	71.4	66.7	60.0	49.0	48.8	48.6	24-Hour	, (7am-10pm)	(10pm-70
Energy	Average	47.3		erage:	57.1	56.5	55.2	54.3	50.6	47.3	43.9	43.6	43.3	46.2	47.2	42
Night	Min Max	39.2 47.8	40.5 63.6	38.4 50.4	40.3 62.9	40.2 62.4	39.9 61.0	39.8 60.0	39.4 57.7	39.2 55.4	38.8 51.9	38.7 51.4	38.5 50.8	46.3	47.3	43.
Energy	Average	47.8		erage:	47.1	46.8	46.2	45.7	44.5	43.4	42.4	42.3	42.0			



						24-I	lour Noise	e Level M	easureme	ent Sui	mmary								
	Thursday, J West Camp		iteau		Location	: L8 - Locate residence	ed west of th at 8079 La C		e near sing	gle-fami	ily	Me	<i>ter:</i> Pic	colo II					14064 A. Khan
							Hourly L	🚚 dBA Read	inas (unadji	usted)									
	-						,	cy											
85.0 - 80.0																			
(80.0 75.0 70.0																			
65.0 -	ğ —																	_	
<u> </u>																			
1 / 55.0 50.0 45.0		<u> </u>	N.	m	47.8	V. 4	4	4	48.5	5	<u>.</u>	4	6	L.	4	48.8 50.9	44.9	.2	46.2
± 40.0 35.0	0 0	40. 39.	39.	41.	45.	47.	43.	46.		46.	49.	45.	45.	47	44	<sup>48.</sup>	44	45.	- 46
55.0	0	1 2	3	4	5 6	7 8	9	10 1	1 12	13	14	15	16	17	18	19 20	21	22	23
	-		-			-	-	Но	r Beginnin			-	-		-				
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L2:	5%	L50%	L90%	i	L95%	L99%	5 L <sub>eq</sub>		Adj.	Adj. L <sub>eq</sub>
	0	39.7	41.3	38.7	41.1	41.0	40.7	40.5			39.5	39.1		39.0	38.8			10.0	49.7
	1 2	40.7 39.5	45.9 40.9	39.1 38.6	45.7 40.7	45.3 40.6	43.8 40.2	42.5			40.0 39.4	39.5 39.0		39.4 38.9	39.2 38.8			10.0 10.0	50.7 49.5
Night	3	39.5	40.9	38.4	40.7	40.0	39.9	39.8			39.4	39.0		38.7	38.5			10.0	49.3
	4	41.3	50.7	39.7	50.5	50.3		48.9			41.6	40.2		40.1	39.9			10.0	51.3
	5	45.1	51.8	40.6	51.0	50.4	48.9	47.9		5.7	44.1	42.1		41.7	41.0	-		10.0	55.1
	6	47.8	63.6	50.4	62.9	62.4	61.0	60.0			55.4	51.9		51.4	50.8			10.0	57.8
	7	47.7 47.4	66.0 74.0	45.0 44.4	65.5 73.5	65.1 73.0	63.3 71.9	61.8 71.4			51.5 60.0	46.6 45.3		46.0 44.9	45.3 44.6			0.0 0.0	47.7 47.4
	9	43.4	56.0	42.2	55.7	55.4	54.7	54.3			48.5	43.3		42.9	42.3			0.0	43.4
	10	46.4	57.0	42.3	56.5	56.1	54.9	54.3	51	7	48.5	43.1		42.8	42.5	46.4		0.0	46.4
	11	45.1	53.4	40.7	53.0	52.3	50.1	48.6			43.0	41.3		41.1	40.8			0.0	45.1
	12 13	48.5 46.5	54.2 60.1	43.8 40.8	53.7 59.6	53.2 59.1	52.2 58.1	51.5			47.5 47.0	45.2 41.7		44.8 41.4	44.2			0.0 0.0	48.5 46.5
Day	15	40.5	57.6	40.8	59.0	56.7	58.1	53.9			47.0	41.7		41.4 46.5	41.0			0.0	40.5
	15	45.4	57.2	41.3	56.8	56.2	54.8	53.			43.5	41.9		41.7	41.5			0.0	45.4
	16	45.9	52.5	41.9	52.1	51.6	49.9	48.6			44.9	42.6		42.3	42.0			0.0	45.9
	17	47.5	52.2	44.5	51.8	51.4	50.3	49.5			47.1	45.3		45.0	44.7			0.0	47.5
	18 19	44.4 48.8	56.8 60.5	40.8 39.9	56.3 60.2	55.8 59.8	54.8 58.7	53.8 57.5			42.9 42.5	41.4 40.5		41.2 40.3	41.0			0.0 5.0	44.4 53.8
	20	50.9	58.2	48.5	57.0	56.0	54.0	53.0		-	49.7	49.0		48.8	40.0			5.0	55.9
	21	44.9	48.1	44.7	47.0	46.1	45.1	44.9		-	44.8	44.7		44.7	44.7			5.0	49.9
Night	22	45.2	45.4	45.2	45.3	45.3	45.3	45.3			45.2	45.2		45.2	45.2			10.0	55.2
	23 Hour	46.2 L <sub>eq</sub>	46.3 L max	46.1 L <sub>min</sub>	46.3 <b>L1%</b>	46.3 <b>L2%</b>	46.3 <b>L5%</b>	46.3 L8%			46.2 <b>L50%</b>	46.2 <b>L90%</b>		46.2 <b>L95%</b>	46.2 <b>L99%</b>			10.0 <sub>eq</sub> (dBA)	56.2
	Min	43.4	48.1	2 min 39.9	47.0	46.1	45.1	44.9			42.5	40.5		40.3	40.0			<sub>eq</sub> (UDA) Daytime	Nighttime
Day	Max	50.9	74.0	48.5	73.5	73.0	71.9	71.4	66	i.7	60.0	49.0		48.8	48.6	24-ног	Ir	am-10pm)	(10pm-7am
Energy	Average	47.3		erage:	57.1	56.5	55.2	54.3			47.3	43.9		43.6	43.3			47.2	42.0
Night	Min Max	39.2 47.8	40.5 63.6	38.4 50.4	40.3 62.9	40.2	39.9 61.0	39.8 60.0			39.2 55.4	38.8 51.9		38.7 51.4	38.5		5	47.3	43.9
Enormy	Average	47.8		erage:	47.1	46.8	46.2	45.3	-		43.4	42.4		42.3	42.0				



APPENDIX 7.1:

**OFF-SITE TRAFFIC NOISE CONTOURS** 

This page intentionally left blank



FHWA-RD-77-108 HIGHWAY	NOISE	E PREDIC	TION N	ODEL (9	/12/20	)21)				
Scenario: E Road Name: Alessandro Blvd. Road Segment: s/o Arlington Av.		Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA			N	IOISE M	ODE	L INPUTS	6			
Highway Data		Site Con	ditions	(Hard = 1	10, So	ft = 15)				
Average Daily Traffic (Adt): 51,552 vehicles				A	utos:	15				
Peak Hour Percentage: 9.80%		Med	dium Tr	ucks (2 A	xles):	15				
Peak Hour Volume: 5,052 vehicles		Hea	avy Tru	cks (3+ A	xles):	15				
Vehicle Speed: 50 mph	ł	Vehicle N	lix							
Near/Far Lane Distance: 42 feet	ŀ		cleType	1	Dav	Evening	Night	Daily		
Site Data					71.9%		15.9%			
Barrier Height: 0.0 feet		Me	dium T	rucks:	75.3%	7.0%	17.7%	2.20%		
Barrier Type (0-Wall, 1-Berm): 0.0		H	leavy T	rucks: (	50.4%	12.0%	27.6%	3.73%		
Centerline Dist. to Barrier: 60.0 feet			-			0				
Centerline Dist. to Observer: 60.0 feet	-	Noise So	Auto			et)				
Barrier Distance to Observer: 0.0 feet		Madis	Auto n Truck							
Observer Height (Above Pad): 5.0 feet			y Truck			Grade Adji	ustment	0.0		
Pad Elevation: 0.0 feet		Tieav	y much	5. 0.0	04	Orade Haji	usunent.	0.0		
Road Elevation: 0.0 feet		Lane Equ	iivalent	Distanc	e (in f	eet)				
Road Grade: 0.0%			Auto							
Left View: -90.0 degrees			n Truck							
Right View: 90.0 degrees		Heav	y Truck	s: 56.2	85					
FHWA Noise Model Calculations										
	stance	Finite		Fresne		Barrier Atte		m Atten		
Autos: 70.20 4.47	-0.8		-1.20		4.69	0.0		0.000		
Medium Trucks: 81.00 -11.84	-0.8		-1.20		4.88	0.0		0.000		
Heavy Trucks: 85.38 -9.55	-0.8	37	-1.20	-	5.34	0.0	00	0.000		
Unmitigated Noise Levels (without Topo and barrie	er atter	nuation)								
VehicleType Leq Peak Hour Leq Day	Leq E	vening	Leq	Night		Ldn		IEL		
Autos: 72.6 70.4		68.8		65.1		72.7		73.2		
Medium Trucks: 67.1 65.2		60.8		60.1		67.5		67.8		
Heavy Trucks: 73.8 70.9		69.9		68.7		75.5		75.8		
Vehicle Noise: 76.7 74.2		72.7		70.7		77.8		78.1		
Centerline Distance to Noise Contour (in feet)										
L	70	dBA	65	dBA	6	0 dBA	55	dBA		
Ldn: CNEL:		197 208		425 448		915 966		1,972 2.080		

	5.0				a :				D1 /				
Scenario:		h ad			Project I Job Nu			Campus U	oper Plat	е			
Road Name: Road Segment:	Alessandro B				JOD INU	mber:	14004						
-	0												
	PECIFIC INP	UT DATA		NOISE MODEL INPUTS									
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily Tr	( ) .	3,547 vehicles					Autos:						
Peak Hour Pe	•	9.80%		Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15									
		,248 vehicles		Hei	avy Truci	(S (3+ A	(xies):	15					
	cle Speed:	50 mph	[	Vehicle N	Aix								
Near/Far Lane	Distance:	42 feet		Vehi	cleType		Day	Evening	Night	Daily			
Site Data					A	itos:	71.9%	12.2%	15.9%	94.309			
Barri	er Height:	0.0 feet		Medium Trucks: 75.3% 7.0% 17.7%									
Barrier Type (0-Wal	, 1-Berm):	0.0		F	leavy Tru	icks:	60.4%	12.0%	27.6%	3.59			
Centerline Dist.	to Barrier:	60.0 feet		Noise So	urce Ele	vation	: (in fi	pet)					
Centerline Dist. to	Observer:	60.0 feet			Autos.		000	,					
Barrier Distance to	Observer:	0.0 feet		Mediur	n Trucks.		297						
Observer Height (Al	oove Pad):	5.0 feet			y Trucks.		004	Grade Ad	iustment	0.0			
Pad													
	Road Elevation: 0.0 feet					Distand		feet)					
Ro		0.0%			Autos.								
		-90.0 degrees			n Trucks.								
F	Right View:	90.0 degrees		Heav	y Trucks.	56.2	285						
FHWA Noise Model	Calculations												
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten			
Autos:	70.20	4.65	-0.8	39	-1.20		-4.69	0.0	000	0.00			
Medium Trucks:	81.00	-11.84	-0.8	87	-1.20		-4.88	0.0	000	0.00			
Heavy Trucks:	85.38	-9.55	-0.8	87	-1.20		-5.34	0.0	000	0.00			
Unmitigated Noise L	evels (withou	It Topo and bar	rier attei	nuation)									
VehicleType L	eq Peak Hour	Leq Day	Leq E	ening	Leq N	light		Ldn	C	NEL			
Autos:	72.8	70.	6	69.0		65.3		72.9	9	73			
Medium Trucks:	67.1	65.	2	60.8		60.1		67.	5	67			
Heavy Trucks:	73.8			69.9		68.7		75.		75			
Vehicle Noise:	76.8	74.3	3	72.7		70.7		77.	В	78			
Centerline Distance	to Noise Con	tour (in feet)											
			70	dBA	65 d	BA	6	60 dBA	55	dBA			
		Ldr		199		428		923		1,98			
		CNEL		210		452		974		2,09			

Wednesday, September 28, 2022

FHWA-	RD-77-108 HIG	HWAY NO	ISE PR	REDIC	TION MO	ODEL (9	/12/20	021)		
Scenario: EA					Project I	Vame: V	Vest 0	Campus Up	per Plat	e
Road Name: Alessand	ro Blvd.				Job Ni	imber: 1	4064			
Road Segment: s/o Arling	ton Av.									
SITE SPECIFIC	INPUT DATA							L INPUTS	6	
Highway Data			Site	e Con	ditions (	Hard = 1	10, Sc	· · ·		
Average Daily Traffic (Adt):	59,217 vehic	les					utos:			
Peak Hour Percentage:					dium Tru		,			
Peak Hour Volume:	- 1	es		Hea	avy Truc	ks (3+ A	xles):	15		
Vehicle Speed:			Vet	hicle N	lix					
Near/Far Lane Distance:	42 feet				cleType	L	Day	Evening	Night	Daily
Site Data					A	utos:	, 71.9%	12.2%	15.9%	94.08%
Barrier Height:	0.0 feet			Me	dium Tru	ucks:	75.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berm).				H	leavy Tru	ucks: 6	50.4%	12.0%	27.6%	3.73%
Centerline Dist. to Barrier.	60.0 feet		Noi	ise So	urce Ele	vations	(in fe	et)		
Centerline Dist. to Observer.	60.0 feet				Autos			,		
Barrier Distance to Observer.	0.0 feet			Mediur	n Trucks					
Observer Height (Above Pad)	5.0 feet				y Trucks			Grade Adj	ustment	0.0
Pad Elevation:	0.0 feet				·		-			
Road Elevation:	0.0 1000		Lan	1e Equ	ivalent			feet)		
Road Grade:	0.070				Autos					
Left View:	00.0 409.0	ees	٨		n Trucks					
Right View.	90.0 degre	ees		Heav	y Trucks	: 56.2	85			
FHWA Noise Model Calculation	ns		_							
VehicleType REMEL	Traffic Flow			Finite		Fresne		Barrier Atte		m Atten
Autos: 70.2		-	-0.89		-1.20		4.69	0.0		0.00
Medium Trucks: 81.0			-0.87		-1.20		4.88	0.0		0.00
Heavy Trucks: 85.3	8 -8.9	5	-0.87		-1.20	-	5.34	0.0	00	0.000
Unmitigated Noise Levels (wi										
VehicleType Leq Peak H			q Even		Leq N			Ldn	<b>.</b>	VEL
	73.2	71.1		69.4		65.7		73.3		73.
	67.7	65.8		61.4		60.7		68.1		68.4
	74.4	71.5		70.5		69.3		76.1		76.4
Vehicle Noise:	77.3	74.8		73.3		71.3		78.4		78.
Centerline Distance to Noise	Contour (in fee									
			70 dBA		65 d		e	60 dBA	55	dBA
		Ldn:		216		466		1,004		2,163
		NEL:		228		492		1.059		2.282

	FHWA-RD	-77-108 HIGH	WAY NC	DISE F	PREDIC	TION M	ODEL (9	/12/2	021)					
Scenario	o: EAP e: Alessandro	Divid		Project Name: West Campus Upper Plate Job Number: 14064										
Road Name Road Segmen						JOD NI	imper: 1	4064						
•	ů									_				
SITE S Highway Data	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
				31	le com	uiuons (			,					
Average Daily	( )	61,212 vehicle	s					Autos:	15					
Peak Hour I	•	9.80%				dium Tru								
		5,999 vehicles			Hea	avy Truc	ks (3+ A	xles):	15					
	hicle Speed:	50 mph		V	ehicle N	<i>lix</i>								
Near/Far Lar	ne Distance:	42 feet			Vehi	cleType	1	Day	Evening	Night	Daily			
Site Data						A	utos:	71.9%	12.2%	15.9%	94.27%			
Bar	rier Height:	0.0 feet			Medium Trucks: 75.3% 7.0% 17.7% 2.									
Barrier Type (0-Wa		0.0			H	leavy Tr	ucks: (	60.4%	12.0%	27.6%	3.60%			
Centerline Dis	. ,	60.0 feet			oioo Co	urce Ele	wationa	lin &	at l					
Centerline Dist. t	to Observer:	60.0 feet		/14	oise 30	Autos			el)					
Barrier Distance t	o Observer:	0.0 feet												
Observer Height ()	Above Pad):	5.0 feet				n Trucks			Grade Ad	iuotmon				
Pa	d Elevation:	0.0 feet			Heav	y Trucks	: 8.0	104	Grade Auj	usimeni	. 0.0			
Roa	d Elevation:	0.0 feet		Lá	ane Equ	iivalent	Distanc	e (in i	feet)					
F	Road Grade:	0.0%				Autos	: 56.4	27						
	Left View:	-90.0 degree	s		Mediun	n Trucks	56.2	270						
	Right View:	90.0 degree			Heav	y Trucks	56.2	285						
FHWA Noise Mode	Calculations	;												
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresne	e/	Barrier Atte	en Bei	rm Atten			
Autos:	70.20	5.23		-0.89		-1.20	-	4.69	0.0	000	0.00			
Medium Trucks:	81.00	-11.24		-0.87		-1.20	-	4.88	0.0	000	0.00			
Heavy Trucks:	85.38	-8.95		-0.87		-1.20		-5.34	0.0	000	0.00			
Unmitigated Noise			-	ttenu	ation)									
	Leq Peak Hou			eq Eve		Leq I	•		Ldn		NEL			
Autos:	73.		71.2		69.5		65.9		73.5		73.			
Medium Trucks:	67.		65.8		61.4		60.7		68.1		68.			
Heavy Trucks:	74.		71.5		70.5		69.3		76.1		76.			
Vehicle Noise:	77.	4	74.9		73.3		71.3		78.4	1	78.			
Centerline Distanc	e to Noise Co	ntour (in feet)												
				70 dE	3A	65 c	1BA	6	60 dBA		dBA			
			Ldn: IEL:		218 230		469 495		1,011 1.067		2,179			

FHWA-RD-77-108 HIGHWAY NO	ISE PREDICTION MODEL (9/12/2021)								
Scenario: OYC Road Name: Alessandro Blvd. Road Segment: s/o Arlington Av.	Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 62,119 vehicles	Autos: 15								
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 6,088 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 50 mph	Vehicle Mix								
Near/Far Lane Distance: 42 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%								
Barrier Height: 0.0 feet	Medium Trucks: 75,3% 7,0% 17,7% 2,20%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%								
Centerline Dist. to Barrier: 60.0 feet	-								
Centerline Dist. to Observer: 60.0 feet	Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet	Autos: 0.000								
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297								
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 56.427								
Left View: -90.0 degrees	Medium Trucks: 56.270								
Right View: 90.0 degrees	Heavy Trucks: 56.285								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Distar	ce Finite Road Fresnel Barrier Atten Berm Atten								
Autos: 70.20 5.28	0.89 -1.20 -4.69 0.000 0.00								
Medium Trucks: 81.00 -11.03	0.87 -1.20 -4.88 0.000 0.00								
Heavy Trucks: 85.38 -8.74	0.87 -1.20 -5.34 0.000 0.00								
Unmitigated Noise Levels (without Topo and barrier a	tenuation)								
VehicleType Leq Peak Hour Leq Day L	q Evening Leq Night Ldn CNEL								
Autos: 73.4 71.3	69.6 66.0 73.5 74.								
Medium Trucks: 67.9 66.0	61.6 60.9 68.3 68.								
Heavy Trucks: 74.6 71.7	70.7 69.5 76.3 76.4								
Vehicle Noise: 77.5 75.1	73.5 71.5 78.6 78.1								
Centerline Distance to Noise Contour (in feet)									
	70 dBA 65 dBA 60 dBA 55 dBA								
Ldn:	223 481 1,036 2,233								
CNEL:	236 507 1,093 2,356								

FHWA-RD-	77-108 HIGHW	AY NOISI	E PREDIC	TION	MODEL (S	9/12/20	021)					
Scenario: OYCP Road Name: Alessandro E Road Segment: s/o Arlington			Project Name: West Campus Upper Plate Job Number: 14064									
SITE SPECIFIC INF			NOISE MODEL INPUTS									
Highway Data			Site Con					-				
Average Daily Traffic (Adt):	4.114 vehicles		Autos: 15									
Peak Hour Percentage:	9.80%		Me	dium T	rucks (2 A	(xles):	15					
Peak Hour Volume: 6	6,283 vehicles		He	avy Tru	icks (3+ A	(xles):	15					
Vehicle Speed:	50 mph		Vehicle	Mix								
Near/Far Lane Distance:	42 feet		Veh	icleTyp	e	Day	Evening	Night	Daily			
Site Data						71.9%	•	15.9%				
Barrier Height:	0.0 feet		Medium Trucks: 75.3% 7.0% 17.7%									
Barrier Type (0-Wall, 1-Berm):	0.0		Heavy Trucks: 60.4% 12.0% 27.6% 3.6*									
Centerline Dist. to Barrier:	60.0 feet		Noise Sr	urco F	levations	: (in fa	oof)					
Centerline Dist. to Observer:	60.0 feet		110/30 00	Auto		000						
Barrier Distance to Observer:	0.0 feet		Mediu	m Truci		297						
Observer Height (Above Pad):	5.0 feet 0.0 feet			y Truck		004	Grade Adj	ustment	0.0			
Pad Elevation:												
Road Elevation:	0.0 feet		Lane Eq				reet)					
Road Grade: Left View:	0.0%		Madiu	Auto m Truci								
Right View:	-90.0 degrees 90.0 degrees			y Truci								
Ţ.	5											
FHWA Noise Model Calculations VehicleType REMEL	Traffic Flow	Distance	Finite	D	<b>F</b>	-1	Barrier Atte		m Atten			
VehicleType REMEL Autos: 70.20	5.43	-0.8		-1.20	Fresn	-4.69	Daniel Alle		0.00			
Medium Trucks: 81.00	-11.03	-0.4		-1.20		-4.88	0.0		0.00			
Heavy Trucks: 85.38	-8.74	-0.4		-1.20		-5.34	0.0		0.00			
Unmitigated Noise Levels (witho	ut Topo and ba	rrier atte	nuation)									
VehicleType Leq Peak Hour			ening	Leq	Night		Ldn	C	VEL			
Autos: 73.5			69.7		66.1		73.7		74.			
Medium Trucks: 67.9			61.6		60.9		68.3		68.			
Heavy Trucks: 74.6			70.7		69.5		76.3		76.			
Vehicle Noise: 77.6		.1	73.5		71.5	)	78.6	6	79.			
Centerline Distance to Noise Cor	tour (in feet)	70	-10.4		-/0.4		0 -0 4		-/0.4			
	Ld		dBA	65	dBA	6	60 dBA	55	dBA			
	CNE		225 237		484 511		1,044 1.101		2,249			
	0/12		201		511		1,101		2,011			

Wednesday, September 28, 2022

FHWA	-RD-77	7-108 HIGHV	VAY	NOISE	PREDIC	TION M	ODEL (S	0/12/2	021)				
Scenario: HY					Project Name: West Campus Upper Plate								
Road Name: Alessan						Job N	umber: 1	4064					
Road Segment: s/o Arlir	gton A	ν.											
SITE SPECIFIC Highway Data	INPU	JT DATA			Site Con					6			
* /	. 70	505 111			Sile Com	unions		Autos	· · ·				
Average Daily Traffic (Ad		,525 vehicles	5			diana Ta							
Peak Hour Percentage		.80%					ıcks (2 A :ks (3+ A						
Peak Hour Volum Vehicle Spee	,	107 vehicles 50 mph			пе	avy mu	XS (3+ A	xies).	15				
Near/Far Lane Distance				Γ	Vehicle I	/lix							
Near/Far Lane Distance		42 feet		Γ	Vehi	cleType		Day	Evening	Night	Daily		
Site Data						1	Autos:	71.9%	12.2%	15.9%	94.08%		
Barrier Heigh	t:	0.0 feet			Me	edium Ti		75.3%		17.7%			
Barrier Type (0-Wall, 1-Berm	):	0.0			F	leavy Ti	ucks:	60.4%	5 12.0%	27.6%	3.73%		
Centerline Dist. to Barrie	r: (	60.0 feet		-	Noise So	urco El	ovations	in f	oof)				
Centerline Dist. to Observe	r: (	60.0 feet		-	10/30 00	Auto		000					
Barrier Distance to Observe	r:	0.0 feet			Madiu	n Truck	. 0.0	297					
Observer Height (Above Pad	):	5.0 feet				y Truck		04	Grade Adji	istment	.00		
Pad Elevatio	1:	0.0 feet			Tieav	y much	5. 0.0	104	0/000//10/	Journoine	. 0.0		
Road Elevation	1:	0.0 feet			Lane Equ	ivalent	Distanc	e (in	feet)				
Road Grad	e: 0	0.0%				Auto		127					
Left View	V: -9	90.0 degrees	6		Mediur	n Truck	s: 56.2	270					
Right View	V: 9	90.0 degrees	6		Heav	y Truck	5: 56.2	285					
FHWA Noise Model Calculat													
VehicleType REMEL		affic Flow	Dis	tance	Finite		Fresn		Barrier Atte		m Atten		
	.20	5.96		-0.8		-1.20		-4.69	0.0		0.00		
	.00	-10.36		-0.8		-1.20		-4.88	0.0		0.00		
	.38	-8.07		-0.8		-1.20		-5.34	0.0	00	0.00		
Unmitigated Noise Levels (w			arrie		,								
VehicleType Leq Peak Autos:	74.1	Leq Day	1.9	Leq E	vening	Leq	Night		Ldn 74.2		NEL 74.		
Autos: Medium Trucks:	74.1 68.6		6.6		70.3 62.3		66.6 61.6		74.2 69.0		74. 69.3		
	75.2		2.3		71.3		70.2		76.9		77.3		
Heavy Trucks: Vehicle Noise:	75.2		2.3		71.3		70.2		76.9				
	-		J.1		74.1		12.2		79.2		79.		
Centerline Distance to Noise	Conto	our (in feet)	-	70	dBA	65	dBA		60 dBA	66	dBA		
		,	dn:	70	ава 248	65	533		1.149	55	ава 2.476		
		-			∠48				, -		2,476		
		CN			261		563		1.212				

	FHWA-RD	-77-108 HIGHWA	Y NOISE	PREDIC	TION MO	ODEL (9	/12/20	21)					
	o: HYP e: Alessandro nt: s/o Arlingtor			Project Name: West Campus Upper Plate Job Number: 14064									
SITE S	SPECIFIC IN	PUT DATA						INPUTS	;				
Highway Data				Site Con	ditions (	Hard = 1	10, So	ft = 15)					
Average Daily	Traffic (Adt):	74,521 vehicles				A	lutos:	15					
Peak Hour	Percentage:	9.80%		Me	dium Tru	cks (2 A.	xles):	15					
Peak H	our Volume:	7,303 vehicles		He	avy Truci	ks (3+ A	xles):	15					
Vel	hicle Speed:	50 mph	ł	Vehicle I	liv								
Near/Far Lar	ne Distance:	42 feet	-		cleType		Day	Evening	Night	Daily			
Site Data				VCIII			71.9%	12.2%	15.9%				
	rier Height:	0.0 feet		Me	edium Tru		75.3%	7.0%	17.7%	2.14%			
Barrier Type (0-W		0.0		F	leavy Tru	icks: 6	50.4%	12.0%	27.6%	3.63%			
Centerline Dis	. ,	60.0 feet							-				
Centerline Dist.		60.0 feet	-	Noise So				et)					
Barrier Distance t		0.0 feet			Autos								
Observer Height (		5.0 feet			n Trucks								
• •	d Elevation:	0.0 feet		Heav	y Trucks	: 8.0	04	Grade Adji	istment:	0.0			
Roa	d Elevation:	0.0 feet		Lane Equ	uivalent	Distanc	e (in f	eet)					
F	Road Grade:	0.0%			Autos	: 56.4	27						
	Left View:	-90.0 degrees		Mediur	n Trucks	56.2	70						
	Right View:	90.0 degrees		Heav	y Trucks	56.2	85						
FHWA Noise Mode	el Calculations												
VehicleType	REMEL	Traffic Flow Di	istance	Finite	Road	Fresne	el l	Barrier Atte	n Berr	m Atten			
Autos:	70.20	6.08	-0.8	39	-1.20	-	4.69	0.0	00	0.000			
Medium Trucks:	81.00	-10.36	-0.8	37	-1.20	-	4.88	0.0	00	0.000			
Heavy Trucks:	85.38	-8.07	-0.8	37	-1.20	-	5.34	0.0	00	0.000			
Unmitigated Noise													
	Leq Peak Hour		Leq E	vening	Leq N	•		Ldn	CI	VEL			
Autos:	74.			70.4		66.8		74.3		74.8			
Medium Trucks:	68.			62.3		61.6		69.0		69.2			
Heavy Trucks:	75.			71.3		70.2		76.9		77.3			
Vehicle Noise:	78.	3 75.8		74.2		72.2		79.3		79.6			
Centerline Distanc	e to Noise Co	ntour (in feet)											
				dBA	65 d		6	0 dBA	55	dBA			
		Ldn:		249		537		1,156		2,491			
		CNEL:		263		566		1,220		2,628			

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)									
Scenario: E Road Name: Alessandro Blvd. Road Segment: s/o Canyon Crest Dr.	Project Name: West Campus Upper Plate Job Number: 14064									
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS									
Highway Data	Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (Adt): 48,548 vehicles	Autos: 15									
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15									
Peak Hour Volume: 4,758 vehicles	Heavy Trucks (3+ Axles): 15									
Vehicle Speed: 50 mph	Vehicle Mix									
Near/Far Lane Distance: 42 feet	VehicleType Day Evening Night Daily									
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%									
	Medium Trucks: 75.3% 7.0% 17.7% 2.20%									
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%									
Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet										
Centerline Dist. to Observer: 60.0 feet	Noise Source Elevations (in feet)									
Barrier Distance to Observer: 0.0 feet	Autos: 0.000									
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297									
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0									
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)									
Road Grade: 0.0%	Autos: 56.427									
Left View: -90.0 degrees	Medium Trucks: 56.270									
Right View: 90.0 degrees	Heavy Trucks: 56.285									
Right view. 90.0 degrees	Theavy Trucks. 30.203									
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flow Dista										
Autos: 70.20 4.21	-0.89 -1.20 -4.69 0.000 0.000									
Medium Trucks: 81.00 -12.10	-0.87 -1.20 -4.88 0.000 0.000									
Heavy Trucks: 85.38 -9.81	-0.87 -1.20 -5.34 0.000 0.000									
Unmitigated Noise Levels (without Topo and barrier	ttenuation)									
VehicleType Leq Peak Hour Leq Day L	eq Evening Leq Night Ldn CNEL									
Autos: 72.3 70.2	68.5 64.9 72.5 72.9									
Medium Trucks: 66.8 64.9	60.6 59.8 67.2 67.5									
Heavy Trucks: 73.5 70.6	69.6 68.5 75.2 75.5									
Vehicle Noise: 76.5 74.0	72.4 70.4 77.5 77.8									
Centerline Distance to Noise Contour (in feet)										
	70 dBA 65 dBA 60 dBA 55 dBA									
Ldn:	189 408 879 1,894									
CNEL:	200 431 928 1.999									

	FHWA-RD	-77-108 HIGHW	AY NOIS	E PREDIC	TION MC	DDEL (S	9/12/20	21)					
Road Nam	io: E+P ne: Alessandro nt: s/o Canyon			Project Name: West Campus Upper Plate Job Number: 14064									
SITE	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS									
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	51,541 vehicles					Autos:	15					
Peak Hour	Percentage:	9.80%		Mee	dium Truc	cks (2 A	xles):	15					
Peak H	lour Volume:	5,051 vehicles		Hei	avy Truck	(3+ A	xles):	15					
	hicle Speed:	50 mph		Vehicle N	lix								
Near/Far La	ne Distance:	42 feet		Vehi	cleType		Day	Evening	Night	Daily			
Site Data					AL	itos:	71.9%	12.2%	15.9%	94.429			
Ba	rrier Height:	0.0 feet		Medium Trucks: 75.3% 7.0% 17.7%									
Barrier Type (0-W		0.0		F	leavy Tru	icks:	60.4%	12.0%	27.6%	3.51%			
Centerline Di	st. to Barrier:	60.0 feet		Noise So	urco Elo	vation	(in fo	otl					
Centerline Dist.	to Observer:	60.0 feet		10130 00	Autos:		000	01/					
Barrier Distance	to Observer:	0.0 feet		Mediur	n Trucks:		297						
Observer Height (	(Above Pad):	5.0 feet			y Trucks:			Grade Ad	iustment	0.0			
Pa	ad Elevation:	0.0 feet											
Roa	ad Elevation:		Lane Equ				eet)						
1	Road Grade:	0.0%			Autos:								
	Left View:	-90.0 degrees			n Trucks:								
	Right View:	90.0 degrees		Heav	y Trucks:	56.2	285						
FHWA Noise Mode	el Calculations												
VehicleType	REMEL		Distance			Fresn		Barrier Atte		m Atten			
Autos:	70.20	4.49		.89	-1.20		-4.69		000	0.00			
Medium Trucks:	81.00	-12.10		.87	-1.20		-4.88		000	0.00			
Heavy Trucks:	85.38	-9.81	-0	.87	-1.20		-5.34	0.0	000	0.00			
Unmitigated Noise			rrier atte	enuation)									
VehicleType	Leq Peak Hou		_	Evening	Leq N	•		Ldn		VEL			
Autos:	72.			68.8		65.2		72.7		73.			
Medium Trucks:	66.		-	60.6		59.8		67.2	-	67.			
Heavy Trucks:	73.			69.6		68.5		75.2		75.			
Vehicle Noise:	76.	6 74.	1	72.5		70.5		77.6	)	77.			
Centerline Distant	ce to Noise Co	ntour (in feet)	-				-			10.4			
				0 dBA	65 di		6	0 dBA	55	dBA			
		Ldi		192		414		891		1,920			
		CNE	L.:	203		437		941		2,027			

Wednesday, September 28, 2022

		D-77-108 HIGHV										
Scenario				Project Name: West Campus Upper Plate Job Number: 14064								
	e: Alessandro					Job Ni	umber:	14064				
Road Segmen	t: s/o Canyon	Crest Dr.										
	SPECIFIC IN	IPUT DATA							L INPUT	5		
Highway Data				Si	ite Con	ditions (	'Hard =	10, So	oft = 15)			
Average Daily	Traffic (Adt):	55,767 vehicles	3					Autos:	15			
Peak Hour I	Percentage:	9.80%			Mee	dium Tru	icks (2 A	(xles):	15			
Peak Ho	our Volume:	5,465 vehicles			Hea	avy Truc	ks (3+ A	(xles):	15			
Vel	nicle Speed:	50 mph		V	ehicle N	lix						
Near/Far Lar	e Distance:	42 feet		-		cleType		Dav	Evening	Night	Dailv	
Site Data								71.9%	•	15.9%		
	rier Heiaht:	0.0 feet			Me	dium Tr		75.3%		17.7%		
Barrier Type (0-Wa		0.0 Teet				leavv Tr		60.4%		27.6%		
Centerline Dis	. ,	60.0 feet										
Centerline Dist. 1		60.0 feet		N	oise So	urce Ele			eet)			
Barrier Distance f		0.0 feet				Autos		000				
Observer Height (/		5.0 feet				n Trucks		297				
÷ (	d Elevation:	0.0 feet			Heav	y Trucks	:: 8.0	004	Grade Adj	ustmen	ť: 0.0	
Roa	d Elevation:	0.0 feet		Lá	ane Equ	iivalent	Distand	e (in	feet)			
F	Road Grade:	0.0%				Autos	56.4	127				
	Left View:	-90.0 degrees			Mediur	n Trucks	56.:	270				
	Right View:	90.0 degrees			Heav	y Trucks	56.	285				
FHWA Noise Mode	I Calculation	s		_								
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresn	el	Barrier Atte	en Be	erm Atter	
Autos:	70.20	4.82		0.89		-1.20		-4.69	0.0	000	0.00	
Medium Trucks:	81.00	-11.50		0.87		-1.20		-4.88	0.0	000	0.00	
Heavy Trucks:	85.38	-9.21		0.87		-1.20		-5.34	0.0	000	0.00	
Unmitigated Noise												
	Leq Peak Hou			q Eve	ening	Leq I	<u> </u>		Ldn		CNEL	
Autos:	72		0.8		69.1		65.5		73.1		73	
Medium Trucks:	67		5.5		61.2		60.4		67.8		68	
Heavy Trucks:	74		1.2		70.2		69.1		75.8		76	
Vehicle Noise:	77	.1 7	4.6		73.0		71.0	)	78.1		78	
	e to Noise Co	ontour (in feet)										
Centerline Distanc				70 dE	34	65 0	1BA	1 6	50 dBA	55	5 dBA	
Centerline Distanc				70 UL		00 0				1		
Centerline Distanc		L	dn:	70 UL	208 219		448		964 1.017		2,07	

	FHWA-RD-7	77-108 HIGHW	AY NOIS	E PREDIC	TION M	IODEL (9	/12/20	21)					
	b: EAP e: Alessandro B t: s/o Canyon C			Project Name: West Campus Upper Plate Job Number: 14064									
SITE S	PECIFIC INP	UT DATA							3				
Highway Data				Site Con	ditions	(Hard =	10, So	ft = 15)					
Average Daily	raffic (Adt): 5	8,760 vehicles				A	Autos:	15					
Peak Hour	Percentage:	9.80%		Me	dium Tri	ucks (2 A	xles):	15					
Peak He	our Volume: 5	,758 vehicles		He	avy Tru	cks (3+ A	xles):	15					
Vel	icle Speed:	50 mph		Vehicle	Mix								
Near/Far Lar	e Distance:	42 feet			icleType		Day	Evening	Night	Dailv			
Site Data							71.9%	12.2%	15.9%	94.38%			
Bar	rier Height:	0.0 feet		M	edium T	rucks:	75.3%	7.0%	17.7%	2.08%			
Barrier Type (0-Wa		0.0		1	Heavy T	rucks:	60.4%	12.0%	27.6%	3.54%			
Centerline Dis	t. to Barrier:	60.0 feet		Noise So	urce El	ovations	(in fo	of)					
Centerline Dist. t	o Observer:	60.0 feet			Auto			00					
Barrier Distance t	o Observer:	0.0 feet		Mediu	m Truck	. 0.0							
Observer Height (/	Above Pad):	5.0 feet			vy Truck			Grade Adj	ustment:	0.0			
	d Elevation:	0.0 feet											
	d Elevation:	0.0 feet		Lane Eq				eet)					
F		0.0%			Auto								
		-90.0 degrees			m Truck								
	Right View:	90.0 degrees		Heav	y Truck	s: 56.2	285						
FHWA Noise Mode	I Calculations												
VehicleType	REMEL 1	Traffic Flow	Distance	Finite	Road	Fresn	e/ I	Barrier Atte	en Ber	m Atten			
Autos:	70.20	5.06		.89	-1.20		-4.69	0.0		0.000			
Medium Trucks:	81.00	-11.50		.87	-1.20		-4.88	0.0		0.000			
Heavy Trucks:	85.38	-9.21	-0	.87	-1.20		-5.34	0.0	00	0.000			
Unmitigated Noise	Levels (withou	It Topo and ba	arrier atte	enuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq	Evening	Leq	Night		Ldn		VEL			
Autos:	73.2		.0	69.4		65.7		73.3		73.8			
Medium Trucks:	67.4		5.5	61.2		60.4		67.8		68.1			
Heavy Trucks:	74.1		.2	70.2		69.1		75.8		76.1			
Vehicle Noise:	77.2	74	.7	73.1		71.1		78.2		78.5			
Centerline Distanc	e to Noise Con	tour (in feet)											
				) dBA	65	dBA	6	0 dBA	55	dBA			
			in:	210		453		976		2,103			
		CNE	L:	222		478		1,030		2,219			

FHWA-RD-77-108 HIGHWAY NO	SE PREDICTION MODEL (9/12/2021)
Scenario: OYC Road Name: Alessandro Blvd. Road Segment: s/o Canyon Crest Dr.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 62,261 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 6,102 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 50 mph	Vehicle Mix
Near/Far Lane Distance: 42 feet	
Site Data	VehicleType Day Evening Night Daily Autos: 71.9% 12.2% 15.9% 94.08%
	Medium Trucks: 75,3% 7,0% 17,7% 2,20%
Barrier Height: 0.0 feet	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Barrier Type (0-Wall, 1-Berm): 0.0	Tieavy Trucks. 00.4% 12.0% 27.0% 5.75%
Centerline Dist. to Barrier: 60.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 60.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	Lana Envirolant Distance (in fact)
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet) Autos: 56 427
Road Grade: 0.0%	
Left View: -90.0 degrees	
Right View: 90.0 degrees	Heavy Trucks: 56.285
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance	e Finite Road Fresnel Barrier Atten Berm Atten
	0.89 -1.20 -4.69 0.000 0.00
	0.87 -1.20 -4.88 0.000 0.00
Heavy Trucks: 85.38 -8.73 -	0.87 -1.20 -5.34 0.000 0.00
Unmitigated Noise Levels (without Topo and barrier at	
	Evening Leq Night Ldn CNEL
Autos: 73.4 71.3	69.6 66.0 73.5 74.
Medium Trucks: 67.9 66.0	61.7 60.9 68.3 68.
Heavy Trucks: 74.6 71.7	70.7 69.5 76.3 76.4
Vehicle Noise: 77.5 75.1	73.5 71.5 78.6 78.9
Centerline Distance to Noise Contour (in feet)	
	0 dBA 65 dBA 60 dBA 55 dBA
Ldn:	224 482 1,038 2,236
CNEL:	236 508 1.095 2.359

FHWA-RD-77-108 HIGHWAY	NOIS	E PREDIC	TION	IODEL (	9/12/2	021)		
Scenario: OYCP Road Name: Alessandro Blvd. Road Segment: s/o Canyon Crest Dr.				Name: lumber:		Campus Up	oper Plat	e
SITE SPECIFIC INPUT DATA			1	IOISE N	IODE		s	
Highway Data		Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt): 65,254 vehicles					Autos:	15		
Peak Hour Percentage: 9.80%		Mee	dium Tr	ucks (2 A	Axles):	15		
Peak Hour Volume: 6,395 vehicles		Hei	avy Tru	cks (3+ A	Axles):	15		
Vehicle Speed: 50 mph		Vehicle N	lix					
Near/Far Lane Distance: 42 feet		Vehi	cleType	•	Day	Evening	Night	Daily
Site Data				Autos:	71.9%	12.2%	15.9%	94.35%
Barrier Height: 0.0 feet		Me	edium T	rucks:	75.3%	7.0%	17.7%	2.10%
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy T	rucks:	60.4%	12.0%	27.6%	3.55%
Centerline Dist. to Barrier: 60.0 feet		Noise So	urco F	lovation	s (in fi	aat)		
Centerline Dist. to Observer: 60.0 feet		10130 00	Auto		000			
Barrier Distance to Observer: 0.0 feet		Mediur			297			
Observer Height (Above Pad): 5.0 feet			y Truck		D04	Grade Ad	justment.	0.0
Pad Elevation: 0.0 feet								
Road Elevation: 0.0 feet		Lane Equ				feet)		
Road Grade: 0.0%			Auto		427			
Left View: -90.0 degrees		Mediur	n Truck y Truck		270 285			
Right View: 90.0 degrees		neav	y TTUCK	s. 50.	200			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow Dis	tance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos: 70.20 5.51	-0.		-1.20		-4.69		000	0.00
Medium Trucks: 81.00 -11.02	-0.		-1.20		-4.88		000	0.00
Heavy Trucks: 85.38 -8.73	-0.	87	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels (without Topo and barrie	er atte	nuation)						
VehicleType Leq Peak Hour Leq Day	Leq I	Evening	Leq	Night		Ldn		VEL
Autos: 73.6 71.5		69.8		66.2	2	73.8	3	74.
Medium Trucks: 67.9 66.0		61.7		60.9		68.3		68.
Heavy Trucks: 74.6 71.7		70.7		69.5		76.3		76.
Vehicle Noise: 77.6 75.2		73.6		71.6	6	78.6	6	79.
Centerline Distance to Noise Contour (in feet)								
	70	dBA	65	dBA		60 dBA		dBA
Ldn:		226		487		1,049		2,260
CNEL:		238		514		1.107		2,385

Wednesday, September 28, 2022

	: HY		_		Pre	iect Name	West	Campus	ner Plat	<u>م</u>		
	2. Alessandro	Blvd		Project Name: West Campus Upper Plate Job Number: 14064								
Road Segmen						o number.	14004					
SITE S		PUT DATA				NOISE	MOD		s			
Highway Data				Si	te Conditio	ons (Hard	= 10, S	oft = 15)	-			
Average Daily 1	raffic (Adt):	72,851 vehicle	es				Autos	: 15				
Peak Hour I	Percentage:	9.80%			Mediun	Trucks (2	Axles)	: 15				
Peak Ho	our Volume:	7,139 vehicle	s		Heavy	Trucks (3+	Axles)	: 15				
Veh	icle Speed:	50 mph		Ve	hicle Mix							
Near/Far Lan	e Distance:	42 feet		ve	Vehicle1	vpe	Dav	Evening	Night	Daily		
Site Data						Autos:	71.99	•	15.9%			
Bar	rier Height:	0.0 feet			Mediu	n Trucks:	75.3%	6 7.0%	17.7%	2.20		
Barrier Type (0-Wa		0.0			Heav	y Trucks:	60.4%	6 12.0%	27.6%	3.73		
Centerline Dis	t. to Barrier:	60.0 feet		No	oise Sourc	e Elevatio	ns (in f	eet)				
Centerline Dist. t	o Observer:	60.0 feet					0.000	001/				
Barrier Distance t	o Observer:	0.0 feet			Medium Tr		297					
Observer Height (A	Above Pad):	5.0 feet			Heavy Tr		3.004	Grade Ad	iustment	0.0		
Pa	d Elevation:	0.0 feet										
	d Elevation:	0.0 feet		La	ne Equiva			feet)				
R	oad Grade:	0.0%					6.427					
	Left View:	-90.0 degree			Medium Tr		6.270					
	Right View:	90.0 degree	es		Heavy Tr	ucks: 56	6.285					
FHWA Noise Mode	I Calculation	s										
VehicleType	REMEL	Traffic Flow	Distan		Finite Roa			Barrier Atte				
VehicleType Autos:	REMEL 70.20	Traffic Flow 5.98		-0.89	-1	20	-4.69	0.0	000	0.0		
VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00	Traffic Flow 5.98 -10.34		-0.89 -0.87	-1 -1	20 20	-4.69 -4.88	0.0	000	0.0		
VehicleType Autos:	REMEL 70.20	Traffic Flow 5.98		-0.89	-1 -1	20	-4.69	0.0	000	0.00		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	REMEL 70.20 81.00 85.38 Levels (with	Traffic Flow 5.98 -10.34 -8.05 out Topo and	barrier a	-0.89 -0.87 -0.87 <b>ttenu</b> a	-1 -1 -1 ation)	20 20 20	-4.69 -4.88	0.0 0.0 0.0	000	0.0		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	REMEL 70.20 81.00 85.38 Levels (with Leq Peak Hou	Traffic Flow           5.98           -10.34           -8.05           Out Topo and           Ir           Leq Day	barrier a	-0.89 -0.87 -0.87	-1 -1 -1 ation) ening	20 20 20 .eq Night	-4.69 -4.88 -5.34	0.0 0.0 0.0	000 000 000 C	m Atter 0.00 0.00 0.00 VEL		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	REMEL 70.20 81.00 85.38 Levels (with Leq Peak Hou 74	Traffic Flow           5.98           -10.34           -8.05           out Topo and           ir         Leq Day           .1	barrier a	-0.89 -0.87 -0.87 <b>ttenu</b> a	-1 -1 -1 ening 1 70.3	20 20 20 .eq Night 66	-4.69 -4.88 -5.34 .6	0.0 0.0 0.0 <i>Ldn</i> 74.2	2 2 000 000 000 Ci	0.00 0.00 0.00 VEL 74		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00 85.38 Levels (with Leg Peak Hou 74 68	Traffic Flow           5.98           -10.34           -8.05           out Topo and           r           Leq Day           .1           .6	<i>barrier a</i> / <i>Le</i> 72.0 66.7	-0.89 -0.87 -0.87 <b>ttenu</b> a	-1 -1 -1 ation) ening 1 70.3 62.3	20 20 20 .eq Night 66 61	-4.69 -4.88 -5.34 .6 .6	0.0 0.0 0.0 <i>Ldn</i> 74.2 69.0	2 000 000 000 Ci	0.00 0.00 0.00 VEL 74 69		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL           70.20           81.00           85.38           Levels (with           Leq Peak Hou           74           68           75	Traffic Flow           5.98           -10.34           -8.05           Out Topo and           ir           Leq Day           .1           .6           .3	barrier a / Le 72.0 66.7 72.4	-0.89 -0.87 -0.87 <b>ttenu</b> a	-1 -1 ation) 70.3 62.3 71.4	20 20 20 .eq Night 66 61 70	-4.69 -4.88 -5.34 .6 .6 .2	0.0 0.0 0.0 0.0 0.0 0.0 74.2 69.0 77.0	2 000 000 200 2 0	0.00 0.00 0.00 VEL 74 69 77		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL           70.20           81.00           85.38           Levels (with           Leq Peak Hou           74           68           75           78	Traffic Flow           5.98           -10.34           -8.05           Out Topo and           r           Leq Day           .1           .6           .3           .2	<i>barrier a</i> 72.0 66.7 72.4 75.7	-0.89 -0.87 -0.87 <b>ttenu</b> a	-1 -1 -1 ation) ening 1 70.3 62.3	20 20 20 .eq Night 66 61	-4.69 -4.88 -5.34 .6 .6 .2	0.0 0.0 0.0 <i>Ldn</i> 74.2 69.0	2 000 000 200 2 0	0.00 0.00 0.00 NEL 74 69 77		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL           70.20           81.00           85.38           Levels (with           Leq Peak Hou           74           68           75           78	Traffic Flow           5.98           -10.34           -8.05           Out Topo and           r           Leq Day           .1           .6           .3           .2	<i>barrier a</i> 72.0 66.7 72.4 75.7	-0.89 -0.87 -0.87 <b>ttenua</b> eq Eve	-1 -1 -1 ation) 70.3 62.3 71.4 74.2	20 20 20 .eq Night 66 61 70 72	-4.69 -4.88 -5.34 .6 .6 .2 .2	0.0 0.0 0.0 0.0 74.2 69.0 77.0 79.3	000 000 000 22 0 33	0.00 0.00 0.00 VEL 74 69 77 79		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL           70.20           81.00           85.38           Levels (with           Leq Peak Hou           74           68           75           78	Traffic Flow           5.98           -10.34           -8.05           Dut Topo and           ir         Leq Day           .1           .6           .3           .2           Data (in feet)	<i>barrier a</i> 72.0 66.7 72.4 75.7	-0.89 -0.87 -0.87 <b>ttenu</b> a	-1 -1 -1 ation) 70.3 62.3 71.4 74.2	20 20 20 .eq Night 66 61 70	-4.69 -4.88 -5.34 .6 .6 .6 .2 .2	0.0 0.0 0.0 0.0 0.0 0.0 74.2 69.0 77.0	000 000 000 2 0 0 3 55	0.00		

	FHWA-RD-	77-108 HIGHW	AY NOIS	E PREDIC	TION M	ODEL (9)	12/2021)					
Scenario. Road Name. Road Segment	Alessandro E			Project Name: West Campus Upper Plate Job Number: 14064								
SITE S	PECIFIC IN	PUT DATA			N	OISE M	ODEL INP	UTS				
Highway Data				Site Con	ditions	(Hard = 1	0, Soft = 15	)				
Average Daily Ti	raffic (Adt):	75,845 vehicles				А	utos: 15					
Peak Hour P	ercentage:	9.80%		Me	dium Tru	ucks (2 A)	des): 15					
Peak Ho	ur Volume:	7,433 vehicles		He	avy Truc	cks (3+ A)	<i>des):</i> 15					
Vehi	cle Speed:	50 mph		Vehicle I	Nix							
Near/Far Lane	e Distance:	42 feet			cleType	L	Day Evenii	na Ni	ght	Daily		
Site Data							1.9% 12.2		-	94.31%		
Barr	ier Heiaht:	0.0 feet		Me	edium Ti	rucks: 7	5.3% 7.0	0% 1	7.7%	2.11%		
Barrier Type (0-Wa		0.0		ŀ	leavy Ti	ucks: 6	0.4% 12.0	0% 2	7.6%	3.58%		
Centerline Dist.	. ,	60.0 feet		Noise So	uree El	ovetiene	(in fact)					
Centerline Dist. to	Observer:	60.0 feet		NOISe 30	Auto:							
Barrier Distance to	Observer:	0.0 feet		Madiu	n Truck:	0.01						
Observer Height (A	bove Pad):	5.0 feet						Adjust	mont	0.0		
Pad	Elevation:	0.0 feet		Heav	y Truck	5. 8.0	ją Graue	мијизи	nem.	0.0		
Road	Elevation:	0.0 feet		Lane Equ	uivalent	Distance	e (in feet)					
R	oad Grade:	0.0%			Auto:	s: 56.4	27					
	Left View:	-90.0 degrees		Mediur	n Trucks	s: 56.2	70					
1	Right View:	90.0 degrees		Heav	y Truck	s: 56.2	85					
FHWA Noise Model	Calculations			1								
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	Barrier	Atten	Bern	n Atten		
Autos:	70.20	6.16		.89	-1.20		4.69	0.000		0.00		
Medium Trucks:	81.00	-10.34		.87	-1.20		4.88	0.000		0.00		
Heavy Trucks:	85.38	-8.05	-0	.87	-1.20	-	5.34	0.000		0.00		
Unmitigated Noise												
	eq Peak Hour			Evening	Leq	Night	Ldn		CN			
Autos:	74.3			70.5		66.8		74.4		74.9		
Medium Trucks:	68.6			62.3		61.6		69.0		69.3		
Heavy Trucks:	75.3	-		71.4		70.2		77.0		77.3		
Vehicle Noise:	78.3	3 75	5.8	74.2		72.2		79.3		79.7		
Ormate dine Distance							-		-			
Centerline Distance	to Noise Cor	itour (in feet)										
Centerine Distance	to Noise Cor			0 dBA	65	dBA	60 dBA		55 a			
Centerline Distance	to Noise Cor	tour (in teet) La CNE	in:	0 dBA 251 264	65	dBA 540 570	1,	163 227	55 a	2,506 2,644		

FHWA-RD-77-108 HIGHWA	( NOISE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Trautwein Rd. Road Segment: n/o Van Buren Blvd.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 19,731 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 1,934 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 50 mph	Vehicle Mix
Near/Far Lane Distance: 24 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73
Centerline Dist. to Barrier: 44.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 44.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2,297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 42.626
Left View: -90.0 degrees Right View: 90.0 degrees	Medium Trucks: 42.418 Heavy Trucks: 42.438
FHWA Noise Model Calculations	
	stance Finite Road Fresnel Barrier Atten Berm Atten
Autos: 70.20 0.30	0.94 -1.20 -4.61 0.000 0.00
Medium Trucks: 81.00 -16.01	0.97 -1.20 -4.87 0.000 0.00
Heavy Trucks: 85.38 -13.72	0.96 -1.20 -5.50 0.000 0.00
Unmitigated Noise Levels (without Topo and barr	er attenuation)
VehicleType Leq Peak Hour Leq Day	Leq Evening Leq Night Ldn CNEL
Autos: 70.2 68.1	66.4 62.8 70.4 70
Medium Trucks: 64.8 62.8	58.5 57.8 65.2 65
Heavy Trucks: 71.4 68.5	67.5 66.4 73.1 73
Vehicle Noise: 74.4 71.9	70.3 68.4 75.4 75
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn: CNEL:	101 218 469 1,01
CNEL	107 230 495 1,06

	FHWA-RD	-77-108 HIGH	IWAY	NOISE	PREDIC	TION N	NODEL	(9/12/2	021)		
Scenario: E Road Name: T Road Segment: n	rautwein R						t Name: lumber:		Campus U	pper Plat	e
SITE SPE	CIFIC IN	PUT DATA				1	NOISE	MODE		s	
Highway Data					Site Cond	ditions	(Hard =	: 10, Se	oft = 15)		
Average Daily Traf	fic (Adt):	20,064 vehicle	es					Autos:	15		
Peak Hour Pere	centage:	9.80%			Med	dium Ti	rucks (2	Axles):	15		
Peak Hour	Volume:	1,966 vehicle	s		Hea	avy Tru	icks (3+	Axles):	15		
Vehicle	Speed:	50 mph			Vehicle N	Niv					
Near/Far Lane D	istance:	24 feet		-		cleType	•	Dav	Evening	Night	Daily
Site Data					10.1.1		Autos:	71.9%	•	15.9%	,
	Height:	0.0 feet			Ме		rucks:	75.3%		17.7%	
Barrier Type (0-Wall,		0.0 1001			H	leavy 7	rucks:				
Centerline Dist. to	,	44.0 feet		-							
Centerline Dist. to O		44.0 feet		4	Noise So				eet)		
Barrier Distance to O		0.0 feet				Auto		.000			
Observer Height (Above Pad): 5.0 feet					Mediun			.297	0		
Pad Elevation: 0.0 feet					Heav	y Truck	(S.' 8	.004	Grade Ad	justment	0.0
Road E	1	Lane Equ	ıivalen	t Distan	ce (in	feet)					
Road Elevation: 0.0 feet Road Grade: 0.0%						Auto	os: 42	.626			
Le	eft View:	-90.0 degree	es		Mediun			.418			
Rig	ht View:	90.0 degree	es		Heav	y Truck	(s: 42	.438			
FHWA Noise Model Ca	alculations										
	EMEL	Traffic Flow	Di	istance	Finite		Fres	-	Barrier Att		m Atten
Autos:	70.20	0.38		0.9		-1.20		-4.61		000	0.00
Medium Trucks:	81.00	-16.01		0.9		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-13.72		0.9	6	-1.20		-5.50	0.	000	0.00
Unmitigated Noise Le					<u> </u>			1			
	Peak Hour				vening	Leq	Night		Ldn		NEL
Autos:	70.		68.2		66.5		62.		70.		70.
Medium Trucks: Heavy Trucks:	64. 71.		62.8 68.5		58.5 67.5		57. 66.		65. 73.		65 73
Vehicle Noise:	71.4		71.9		70.3		68.		73.		73
		-			70.5		00.	4	75.	4	75
Centerline Distance to	Noise Col	ntour (in feet	)	70 (	dBA	65	dBA		50 dBA	55	dBA
			Ldn:	701	101	00	218		471		1.01
					101		210	-	+/		1,01

Wednesday, September 28, 2022

FHWA-I	RD-77-108 HIGH	IWAY NOI	ISE PREDIO	TION MC	DEL (9/12	2021)	
Scenario: EA				Project N	lame: Wes	t Campus Upp	er Plate
Road Name: Trautweir				Job Nu	mber: 1406	4	
Road Segment: n/o Van E	uren Blvd.						
SITE SPECIFIC	NPUT DATA					EL INPUTS	
Highway Data			Site Cor	ditions (I	lard = 10,	Soft = 15)	
Average Daily Traffic (Adt):	22,665 vehicl	es			Auto	s: 15	
Peak Hour Percentage:	9.80%				ks (2 Axles	/ .	
Peak Hour Volume:	2,221 vehicle	s	He	avy Truck	s (3+ Axles	s): 15	
Vehicle Speed:	50 mph		Vehicle	Mix			
Near/Far Lane Distance:	24 feet			icleType	Day	Evening	Night Daily
Site Data				AL	itos: 71.9	% 12.2%	15.9% 94.08%
Barrier Height:	0.0 feet		М	edium Tru	cks: 75.3	% 7.0%	17.7% 2.20%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tru	cks: 60.4	% 12.0%	27.6% 3.73%
Centerline Dist. to Barrier:	44.0 feet		Noise Se	ource Ele	vations (in	feet)	
Centerline Dist. to Observer:	44.0 feet			Autos		,	
Barrier Distance to Observer:	0.0 feet		Mediu	m Trucks:	0.000		
Observer Height (Above Pad):	5.0 feet			/v Trucks:		Grade Adiu	stment: 0.0
Pad Elevation:	0.0 feet						
Road Elevation:	0.0 feet		Lane Eq		Distance (i	n feet)	
Road Grade:	0.0%			Autos:			
Left View:	-90.0 degre			m Trucks:	12.110		
Right View:	90.0 degre	es	Hear	vy Trucks:	42.438		
FHWA Noise Model Calculatio	ns		-				
VehicleType REMEL	Traffic Flow	Distanc		Road	Fresnel	Barrier Atter	
Autos: 70.2	0 0.91		0.94	-1.20	-4.6	1 0.00	0.000
Medium Trucks: 81.0	0 -15.41		0.97	-1.20	-4.8	7 0.00	0.000
Heavy Trucks: 85.3	8 -13.12		0.96	-1.20	-5.5	0 0.00	0.000
Unmitigated Noise Levels (wit	hout Topo and	barrier at	tenuation)				
VehicleType Leq Peak H			q Evening	Leq N	•	Ldn	CNEL
	0.8	68.7	67.0		63.4	71.0	71.4
	65.4	63.4	59.1		58.4	65.8	66.0
	2.0	69.1	68.1		67.0	73.7	74.
Vehicle Noise:	75.0	72.5	70.9		69.0	76.0	76.4
Centerline Distance to Noise	Contour (in feet	)					
Centennie Distance to Noise			70 dBA	65 d	24	60 dBA	55 dBA
Centennie Distance to Noise			I U UDA	65 di		00 004	00 00/1
Sentenine Distance to Holse		Ldn:	ло авд 111	65 di	239	514	1,108

	FHWA-RD	-77-108 HIGH	NAY NO	DISE	PREDIC		IODEL (S	9/12/20	021)		
Scenario Road Name Road Segment	: Trautwein R						Name: \ lumber:		Campus Up	per Plate	9
SITE S	PECIFIC IN	PUT DATA							L INPUTS	3	
Highway Data				S	Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily T	raffic (Adt):	22,998 vehicle	s					Autos:	15		
Peak Hour P	Percentage:	9.80%			Mee	dium Tr	ucks (2 A	(xles):	15		
Peak Ho	ur Volume:	2,254 vehicles			Hei	avy Tru	cks (3+ A	(xles):	15		
Veh	icle Speed:	50 mph		L.	/ehicle N	Aiv					
Near/Far Lan	e Distance:	24 feet				cleType		Day	Evening	Night	Daily
Site Data					veni			71.9%		15.9%	
Barr	ier Height:	0.0 feet			Me	edium T	rucks:	75.3%	7.0%	17.7%	2.17%
Barrier Type (0-Wa		0.0			F	leavy T	rucks:	60.4%	12.0%	27.6%	3.67%
Centerline Dist		44.0 feet			<i>l-i</i> 0-			. (in <b>f</b> .	-41		
Centerline Dist. to	Observer:	44.0 feet		^	ioise So		evations		et)		
Barrier Distance to	Observer:	0.0 feet				Auto		000 297			
Observer Height (A	bove Pad):	5.0 feet				n Truck			Grade Adj	ustment	0.0
Pad	d Elevation:	0.0 feet			Heav	y Truck	S: 8.0	004	Grade Auji	usuneni.	0.0
Road	d Elevation:	0.0 feet		L	ane Equ	uivalen	t Distand	e (in f	feet)		
R	oad Grade:	0.0%				Auto	s: 42.0	626			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 42.4	418			
	Right View:	90.0 degree	s		Heav	y Truck	s: 42.4	438			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	0.97		0.94	ļ	-1.20		-4.61	0.0	00	0.000
Medium Trucks:	81.00	-15.41		0.97	,	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	85.38	-13.12		0.96	6	-1.20		-5.50	0.0	00	0.000
Unmitigated Noise	Levels (witho										
VehicleType L	eq Peak Hou	r Leq Day	L	eq Ev	ening	Leq	Night		Ldn	CI	VEL
Autos:	70.		8.8		67.1		63.5		71.1		71.5
Medium Trucks:	65.		53.4		59.1		58.4		65.8		66.0
Heavy Trucks:	72.	-	69.1		68.1		67.0		73.7		74.0
Vehicle Noise:	75.	.0	2.5		70.9		69.0	)	76.0		76.4
Centerline Distance	e to Noise Co	ntour (in feet)									
				70 d		65	dBA	6	i0 dBA	55	dBA
			.dn:		111		240		516		1,112
		CN	IEL:		117		253		544		1,173

FHWA-R	D-77-108 HIGHWAY	Y NOISE	PREDIC	TION M	ODEL (9	/12/202	21)		
Scenario: OYC Road Name: Trautwein Road Segment: n/o Van Bu					Name: V umber: 1		ampus Up	per Plate	
SITE SPECIFIC II	NPUT DATA			N	OISE M	ODEL	INPUTS	5	
Highway Data		5	Site Con	ditions	(Hard = :	10, Sof	t = 15)		
Average Daily Traffic (Adt):	33,567 vehicles				A	utos:	15		
Peak Hour Percentage:	9.80%				icks (2 A		15		
Peak Hour Volume:	3,290 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Vehicle Speed:	50 mph	1	/ehicle	Mix					
Near/Far Lane Distance:	24 feet	F		icleType	1	Dav I	Evening	Night	Daily
Site Data						71.9%	12.2%	÷	4.08%
Barrier Height:	0.0 feet		M	edium Tr	ucks:	75.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berm):	0.0		1	Heavy Tr	ucks: (	50.4%	12.0%	27.6%	3.73%
Centerline Dist. to Barrier:	44.0 feet	-					0		
Centerline Dist. to Observer:	44.0 feet	^	voise Sc		evations		t)		
Barrier Distance to Observer:	0.0 feet		A de alier	Auto: m Truck:					
Observer Height (Above Pad):	5.0 feet						Srada Adi	ustment: 0	
Pad Elevation:	0.0 feet		Heav	ry Trucks	5. 8.0	04 C	siaue Auji	usument. 0	.0
Road Elevation:	0.0 feet	L	ane Eq	uivalent	Distanc	e (in fe	et)		
Road Grade:	0.0%			Autos	s: 42.6	26			
Left View:	-90.0 degrees		Mediu	m Trucks	s: 42.4	18			
Right View:	90.0 degrees		Heav	y Truck	s: 42.4	38			
FHWA Noise Model Calculation	is	I_							
VehicleType REMEL	Traffic Flow Di	istance	Finite	Road	Fresne	el B	arrier Atte	n Berm	Atten
Autos: 70.20		0.94		-1.20		4.61	0.0		0.000
Medium Trucks: 81.00		0.97		-1.20		4.87	0.0		0.000
Heavy Trucks: 85.38	-11.41	0.96	5	-1.20	-	5.50	0.0	00	0.000
Unmitigated Noise Levels (with			· · · ·						
VehicleType Leq Peak Ho		Leq Ev	•	Leq	Night	1	_dn	CNE	
	2.6 70.4		68.7		65.1		72.7		73.1
	7.1 65.1		60.8		60.1		67.5		67.7
	3.7 70.8		69.8		68.7		75.4		75.8
Vehicle Noise: 76	6.7 74.2		72.6		70.7		77.7		78.1
Centerline Distance to Noise C	ontour (in feet)								
		70 a		65 (	dBA	60	dBA	55 dE	
	Ldn:		144		310		668		1,440
	CNEL:		152		327		705		1,519

I	FHWA-RD	77-108 HIGH	IWAY	' NOISE	PREDIC	TION N	IODEL (	9/12/2	021)		
Scenario: O Road Name: Ti Road Segment: n/	rautwein Re						t Name: lumber:		Campus U	pper Plat	e
SITE SPE	CIFIC INI	PUT DATA				1	NOISE	MODE	L INPUT	s	
Highway Data					Site Cond	ditions	(Hard =	10, Se	oft = 15)		
Average Daily Traff	ic (Adt):	33,900 vehicle	es					Autos:	15		
Peak Hour Perc	entage:	9.80%			Med	dium Ti	rucks (2	Axles):	15		
Peak Hour \	/olume: 3	3,322 vehicle	s		Hea	avy Tru	icks (3+ .	Axles):	15		
Vehicle	Speed:	50 mph			Vehicle N	lix					
Near/Far Lane D	istance:	24 feet		-		cleType	e	Dav	Evening	Night	Daily
Site Data							Autos:	71.9%	•	15.9%	,
Barrier	Hoiaht.	0.0 feet			Me	dium 1	rucks:	75.3%	5 7.0%	17.7%	2.18
Barrier Type (0-Wall, 1		0.0			H	leavy 1	rucks:	60.4%	5 12.0%	27.6%	3.69
Centerline Dist. to	,	44.0 feet		-				- 6- 4	41		
Centerline Dist. to Ol	bserver:	44.0 feet		-	Noise So				eet)		
Barrier Distance to Ol	bserver:	0.0 feet			Martin	Auto		000			
Observer Height (Above Pad): 5.0 feet					Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment:						
Pad Elevation: 0.0 feet					Heav	y Truck	(S. 8.	004	Grade Ad	jusimeni	. 0.0
Road El	1	Lane Equ	iivalen	t Distan	ce (in	feet)					
Road	Road Elevation: 0.0 feet Road Grade: 0.0%					Auto	os: 42	.626			
Le	ft View:	-90.0 degree	es		Mediun			418			
Rigi	ht View:	90.0 degree	es		Heav	y Truck	(s: 42	.438			
FHWA Noise Model Ca	lculations										
VehicleType R	EMEL	Traffic Flow	Di	stance	Finite	Road	Fresi	nel	Barrier At	ten Ber	m Atten
Autos:	70.20	2.66		0.9		-1.20		-4.61		000	0.00
Medium Trucks:	81.00	-13.71		0.9		-1.20		-4.87		000	0.00
Heavy Trucks:	85.38	-11.41		0.9	6	-1.20		-5.50	0.	000	0.00
Unmitigated Noise Lev					<u> </u>					1	
	Peak Hour			Leq E	vening	Leq	Night		Ldn		NEL
Autos:	72.6		70.5		68.8		65.		72.		73
Medium Trucks:	67.		65.1		60.8		60.		67.		67
Heavy Trucks:	73.		70.8		69.8		68.		75.		75
Vehicle Noise:	76.				72.6		70.	/	77.	/	78
Centerline Distance to	Noise Cor	ntour (in feet	)	70		67	dBA		50 dBA		dBA
			Ldn:	700	18A 144	60	ава 311		50 авд 67(		ава 1.44
		~	NEL:		144 152		311		707		'
		6	VLL.		152		328	)	701	r	1,52

Wednesday, September 28, 2022

FHWA-R	D-77-108 HIGHV	VAY NO	SE PREDI		ODEL (9/	12/2021)		
Scenario: HY Road Name: Trautwein Road Segment: n/o Van Bi					Name: W umber: 14	est Campu 064	ıs Uppe	r Plate
SITE SPECIFIC I						DDEL INF	UITO	
Highway Data	POTDATA		Site Co			0, Soft = 1		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume: Vehicle Speed: Near/Far Lane Distance:	39,015 vehicles 9.80% 3,823 vehicles 50 mph 24 feet	3	H Vehicle	eavy Truc	ucks (2 Ax cks (3+ Ax			ght Daily
Site Data						-	-	5.9% 94.08%
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet 0.0		Λ	ledium Tr Heavy Tr				7.7% 2.20% 7.6% 3.73%
Centerline Dist. to Barrier:	44.0 feet		Noise S	ource El	evations (	(in feet)		
Centerline Dist. to Observer: Barrier Distance to Observer: Observer Height (Above Pad): Pad Elevation: Road Elevation: Road Grade: Left View: Right View:	44.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet 0.0% -90.0 degrees 90.0 degrees		Hea Lane Ea Media	Autos um Trucks vy Trucks <b>guivalent</b> Autos um Trucks vy Trucks	5: 2.29 5: 8.00 Distance 5: 42.62 5: 42.41	7 14 Grad (in feet) 26	e Adjust	ment: 0.0
FHWA Noise Model Calculation	IS							
VehicleType REMEL	Traffic Flow	Distand	e Finit	e Road	Fresnel	Barrie	er Atten	Berm Atten
Autos: 70.20 Medium Trucks: 81.00 Heavy Trucks: 85.38	-13.05		0.94 0.97 0.96	-1.20 -1.20 -1.20	-4	1.61 1.87 5.50	0.000 0.000 0.000	
Unmitigated Noise Levels (with	out Topo and b	arrier at	tenuation)					
VehicleType Leq Peak Ho			q Evening		Night	Ldn		CNEL
Medium Trucks: 6	7.7 6	1.1 5.8 1.5	69. 61. 70.	5	65.8 60.7 69.3		73.3 68.1 76.1	73. 68. 76.
Vehicle Noise: 7	7.3 7	4.9	73.	3	71.3		78.4	78.
Centerline Distance to Noise C	ontour (in feet)							
			70 dBA	65 (	dBA	60 dBA	1	55 dBA
	L	dn:	159		343		739	1.59

	FHWA-RD	D-77-108 HIGH	WAY NO	DISE P	REDIC		ODEL (9	/12/20	021)			
Scenari Road Nam Road Segmer	e: Trautwein F				Project Name: West Campus Upper Plate Job Number: 14064							
	SPECIFIC IN	IPUT DATA							L INPUT	5		
Highway Data				Si	te Cond	ditions	(Hard = 1	10, Sc	oft = 15)			
Average Daily	Traffic (Adt):	39,348 vehicle	s				A	utos:	15			
Peak Hour	Percentage:	9.80%			Med	dium Tru	ucks (2 A	xles):	15			
Peak H	our Volume:	3,856 vehicles	5		Hea	avy Truc	cks (3+ A	xles):	15			
Ve	hicle Speed:	50 mph		Ve	hicle N	Nix						
Near/Far La	ne Distance:	24 feet				cleType	1	Dav	Evening	Night	Dailv	
Site Data								71.9%	•	15.9%	94.13	
Bar	rier Height:	0.0 feet			Ме	edium Ti	ucks: 1	75.3%	7.0%	17.7%	2.18	
Barrier Type (0-W		0.0			H	leavy Ti	ucks: 6	60.4%	12.0%	27.6%	3.69	
Centerline Dis	. ,	44.0 feet		AL.	vian Co	uree El	evations	lin &	afl			
Centerline Dist.	to Observer:	44.0 feet		///	lise 30	Auto:			el)			
Barrier Distance	to Observer:	0.0 feet			Madium	n Truck:	0.0					
Observer Height (	Above Pad):	5.0 feet				y Truck			Grade Adj	ustment		
Pa	d Elevation:	0.0 feet			neav	y muck:	5. 0.0	04	Orade Auj	usument	. 0.0	
Roa	d Elevation:	0.0 feet		La	ne Equ	ıivalent	Distanc	e (in i	feet)			
F	Road Grade:	0.0%				Autos	s: 42.6	26				
	Left View:	-90.0 degree	s		Mediun	n Truck	s: 42.4	18				
	Right View:	90.0 degree	:S		Heav	y Truck:	s: 42.4	38				
FHWA Noise Mode	Calculation:	s										
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten	
Autos:	70.20	3.30		0.94		-1.20	-	4.61	0.0	00	0.00	
Medium Trucks:	81.00	-13.05		0.97		-1.20	-	4.87	0.0	00	0.00	
Heavy Trucks:	85.38	-10.76		0.96		-1.20	-	5.50	0.0	00	0.00	
Unmitigated Noise												
	Leq Peak Hou			eq Eve		Leq	Night		Ldn		NEL	
Autos:	73		71.1		69.4		65.8		73.4		73	
Medium Trucks:	67		65.8		61.5		60.7		68.1		68	
Heavy Trucks:	74		71.5		70.5		69.3		76.1		76	
Vehicle Noise:	77		74.9		73.3		71.3		78.4		78.	
Centerline Distanc	e to Noise Co	ontour (in feet)										
			ட	70 dE		65	dBA	6	0 dBA	55	dBA	
			Ldn: VEL:		159 168		344 362		740 781		1,59 1,68	

FHWA-RD-77-108 HIGHWAY NOI	SE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Barton St. Road Segment: n/o Van Buren Blvd.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 3,375 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 331 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 30 mph	Vehicle Mix
Near/Far Lane Distance: 18 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
	Medium Trucks: 75.3% 7.0% 17.7% 2.20%
Barrier Height: 0.0 feet	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 33.0 feet	
Centerline Dist. to Barrier: 33.0 feet Centerline Dist. to Observer: 33.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Autos: 0.000
	Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 32 140
Left View: -90.0 degrees	Medium Trucks: 31 864
Right View: 90.0 degrees	Heavy Trucks: 31.891
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distanc	e Finite Road Fresnel Barrier Atten Berm Atten
Autos: 61.75 -5.15	2.78 -1.20 -4.52 0.000 0.000
Medium Trucks: 73.48 -21.46	2.83 -1.20 -4.86 0.000 0.000
Heavy Trucks: 79.92 -19.17	2.83 -1.20 -5.69 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier at	,
	Evening Leq Night Ldn CNEL
Autos: 58.2 56.0	54.4 50.7 58.3 58.8
Medium Trucks: 53.6 51.7	47.4 46.7 54.1 54.3
Heavy Trucks: 62.4 59.5	58.5 57.3 64.1 64.4
Vehicle Noise: 64.2 61.6	60.1 58.5 65.4 65.8
Centerline Distance to Noise Contour (in feet)	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	16 35 76 164 17 07 00 170
CNEL:	17 37 80 172

Scenario: E Road Name: B	arton St.						t Name Number		Campus U	oper Plat	e			
Road Segment: n/														
SITE SPE Highway Data	CIFIC INP	UT DATA			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
					Sile Cont	nuona	(naru		,					
Average Daily Traffi		4,040 vehicles				1		Autos						
Peak Hour Perc	•	9.80%					rucks (2							
Peak Hour \		396 vehicles			неа	ivy iri	icks (3+	· Axies)	: 15					
Vehicle Near/Far Lane Di		30 mph 18 feet			Vehicle N	lix								
Near/Far Lane Di	stance:	18 leet			Vehic	cleTyp	е	Day	Evening	Night	Daily			
Site Data							Autos:	71.99	6 12.2%	15.9%	95.05			
Barrier	Height:	0.0 feet		1			Trucks:	75.39		17.7%				
Barrier Type (0-Wall, 1	-Berm):	0.0			н	eavy	Trucks:	60.49	6 12.0%	27.6%	3.11			
Centerline Dist. to	Barrier:	33.0 feet		H	Noise So	urco F	lovatio	ne (in t	oot)					
Centerline Dist. to Ol	oserver:	33.0 feet		H	10/30 00	Auto		D.000	001/					
Barrier Distance to Ol	oserver:	0.0 feet			Mediun			2.297						
Observer Height (Abov	e Pad):	5.0 feet				/ Truci		3.004	Grade Ad	iustment	· 0 0			
Pad El	evation:	0.0 feet								Juotinoni	. 0.0			
Road El	evation:	0.0 feet		1	Lane Equ	ivaler	nt Dista	nce (in	feet)					
Road	Grade:	0.0%				Auto		2.140						
		-90.0 degrees			Mediun			1.864						
Rigi	ht View:	90.0 degrees			Heavy	/ Truc	ks: 3	1.891						
FHWA Noise Model Ca														
		raffic Flow	Dis	stance	Finite I			snel	Barrier Att		m Atten			
Autos:	61.75	-4.32		2.7		-1.20		-4.52		000	0.00			
Medium Trucks:	73.48	-21.46		2.8		-1.20		-4.86		000	0.00			
Heavy Trucks:	79.92	-19.17		2.8	3	-1.20		-5.69	0.	000	0.00			
Unmitigated Noise Lev			arri		<u> </u>									
	Peak Hour	Leq Day		Leq E	vening	Lec	Night		Ldn		NEL			
Autos: Medium Trucks:	59.0 53.6		6.9 1.7		55.2 47.4			.6 6.7	59. 54.		59. 54.			
Heavy Trucks:	53.6 62.4		9.5		47.4 58.5			7.3	54. 64.		54 64			
Vehicle Noise:	64.4		9.5 1.8		60.4			.5	65.		65			
			1.0		00.4		50	.0	05.	0	05			
Centerline Distance to	Noise Con	tour (in feet)		70 (	dBA	65	i dBA		60 dBA	55	dBA			
		L	dn:		17	00	-	16	78		16			
		-							10		10			

Wednesday, September 28, 2022

FHWA-R	D-77-108 HIGHW	AY NOIS	E PREDIC	TION MC	DEL (9/12/	2021)		ĺ
Scenario: EA Road Name: Barton St. Road Segment: n/o Van B	uren Blvd.				<i>lame:</i> Wes mber: 1406	t Campus Up 4	oper Plate	3
SITE SPECIFIC I	NPUT DATA					EL INPUTS	5	
Highway Data			Site Con	ditions (H	lard = 10, 3	Soft = 15)		
Average Daily Traffic (Adt):	3,877 vehicles				Auto	s: 15		
Peak Hour Percentage:	9.80%		Me	dium Truc	ks (2 Axles	): 15		
Peak Hour Volume:	380 vehicles		He	avy Truck	s (3+ Axles	): 15		
Vehicle Speed:	30 mph		Vehicle I	lix				
Near/Far Lane Distance:	18 feet			cleType	Dav	Evening	Night	Daily
Site Data					itos: 71.9	•	15.9%	94.08%
Barrier Height:	0.0 feet		Me	dium Tru	cks: 75.3	% 7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	leavy Tru	cks: 60.4	% 12.0%	27.6%	3.73%
Centerline Dist. to Barrier:	33.0 feet		Naina Ca	uree Ele	vations (in	faati		
Centerline Dist. to Observer:	33.0 feet		NUISE 30	Autos:		leel)		
Barrier Distance to Observer:	0.0 feet		Madiu	n Trucks:	0.000			
Observer Height (Above Pad):	5.0 feet			v Trucks:		Grade Adj	ustment	0.0
Pad Elevation:	0.0 feet		Tieav	y muchs.	0.004	erade ridj	dounom.	0.0
Road Elevation:	0.0 feet		Lane Equ	ivalent E	Distance (ii	n feet)		
Road Grade:	0.0%			Autos:				
Left View:	-90.0 degrees			n Trucks:	01.001			
Right View:	90.0 degrees		Heav	y Trucks:	31.891			
FHWA Noise Model Calculation	าร							-
VehicleType REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Ben	m Atten
Autos: 61.75		-	.78	-1.20	-4.5			0.00
Medium Trucks: 73.4		-	.83	-1.20	-4.8			0.00
Heavy Trucks: 79.92	-18.57	2	.83	-1.20	-5.6	9 0.0	000	0.00
Unmitigated Noise Levels (with	nout Topo and ba	nrrier atte	enuation)					
VehicleType Leq Peak Ho			Evening	Leq N	•	Ldn		IEL
	8.8 56		55.0		51.3	58.9		59.4
		2.3	48.0		47.3	54.7		54.9
		).1	59.1		57.9	64.7		65.
Vehicle Noise: 6	4.8 62	2.2	60.7		59.1	66.0	)	66.4
Centerline Distance to Noise C	contour (in feet)							-
			0 dBA	65 dl		60 dBA		dBA
	La	fn:	18		39	83		180
	CNE		19		41	88		189

FH	WA-RD	-77-108 HIGH	WAY NC	DISE PR	EDICTION I	MODEL (S	9/12/2	021)					
Scenario: EAF Road Name: Bart Road Segment: n/o`	on St.	en Blvd.		Project Name: West Campus Upper Plate Job Number: 14064									
SITE SPECI				NOISE MODEL INPUTS									
Highway Data		POT DATA		Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic	· · ·	4,542 vehicle	es				Autos:	15					
Peak Hour Percen	tage:	9.80%			Medium T		/						
Peak Hour Vo	lume:	445 vehicles	6		Heavy Tru	ıcks (3+ A	(xles)	15					
Vehicle S	peed:	30 mph		Veh	icle Mix								
Near/Far Lane Dist	ance:	18 feet			VehicleTyp	e	Day	Evening	Night	Daily			
Site Data							71.9%		15.9%				
Barrier He	iaht <sup>.</sup>	0.0 feet			Medium 1	Trucks:	75.3%	5 7.0%	17.7%	1.88%			
Barrier Type (0-Wall, 1-B		0.0			Heavy 1	Trucks:	60.4%	5 12.0%	27.6%	3.18%			
Centerline Dist. to Ba		33.0 feet		Nois	se Source E	lovation	in t	n of l					
Centerline Dist. to Obse	erver:	33.0 feet		NOIS	Auto			eel)					
Barrier Distance to Obse	erver:	0.0 feet					000						
Observer Height (Above	Pad):	5.0 feet			ledium Truck		297	Out of a date					
Pad Elev		0.0 feet			Heavy Truck	ks: 8.0	004	Grade Adj	usiment	0.0			
Road Elev	ation:	0.0 feet		Lan	e Equivalen	t Distanc	:e (in	feet)					
Road G	rade:	0.0%			Auto	os: 32.1	140						
Left	View:	-90.0 degree	s	M	ledium Truck	ks: 31.6	364						
Right	View:	90.0 degree			Heavy Truck	ks: 31.	391						
FHWA Noise Model Calc	ulations	6											
VehicleType REN	1EL	Traffic Flow	Distan	ce F	inite Road	Fresn	el	Barrier Atte	en Ber	m Atten			
Autos:	61.75	-3.82		2.78	-1.20		-4.52	0.0	00	0.00			
Medium Trucks:	73.48	-20.86		2.83	-1.20		-4.86	0.0	00	0.00			
Heavy Trucks:	79.92	-18.57		2.83	-1.20		-5.69	0.0	00	0.00			
	19.92				=1.20								
Unmitigated Noise Level	s (with	out Topo and		ttenuat	ion)								
VehicleType Leq Pe	s (with eak Hou	r Leq Day	Le	ttenuati eq Eveni	i <b>on)</b> ng Leq	Night		Ldn		NEL			
VehicleType Leq Pe Autos:	<b>s (with</b> eak Hou 59	r Leq Day	57.4	ttenuati eq Eveni	ion) ng Leq 55.7	Night 52.1		59.7		60.			
VehicleType Leq Pe	<b>s (witho</b> eak Hou 59 54	out Topo and r Leq Day 5	57.4 52.3	ttenuati eq Eveni	i <b>on)</b> ng Leq 55.7 48.0	Night 52.1 47.3		59.7 54.7		60. 54.			
VehicleType Leq Pe Autos: Medium Trucks: Heavy Trucks:	<b>s (witho</b> eak Hou 59 54 63	n Leq Day Leq Day 5 .3	57.4 52.3 60.1	ttenuati eq Eveni	ion) ng Leq 55.7 48.0 59.1	Night 52.1 47.3 57.9	1	59.7 54.7 64.7		60. 54. 65.			
VehicleType Leq Pe Autos: Medium Trucks:	<b>s (witho</b> eak Hou 59 54	n Leq Day Leq Day 5 .3	57.4 52.3	ttenuati eq Eveni	i <b>on)</b> ng Leq 55.7 48.0	Night 52.1 47.3	1	59.7 54.7		60. 54. 65.			
VehicleType Leq Pe Autos: Medium Trucks: Heavy Trucks:	s (withe eak Hou 59 54 63 65	<i>r</i> Leq Day 5 3 0	57.4 52.3 60.1 62.4	<b>ttenuati</b> eq Eveni	ion) ing Leq 55.7 48.0 59.1 60.9	Night 52.1 47.3 57.9 59.2		59.7 54.7 64.7 66.2		60. 54. 65. 66.			
VehicleType Leq Pe Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	s (withe eak Hou 59 54 63 65	Dut Topo and r Leq Day 5 3 0 0 0 0 0 0 0 0 0 0 0 0 0	57.4 52.3 60.1 62.4	ttenuati eq Eveni	ion) ng Leq 55.7 48.0 59.1 60.9 65	Night 52.1 47.3 57.9 59.2		59.7 54.7 64.7 66.2 50 dBA		60. 54. 65. 66.			
VehicleType Leq Pe Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	s (withe eak Hou 59 54 63 65	Dut Topo and r Leq Day 5 3 0 0 0 0 0 0 0 0 0 0 0 0 0	57.4 52.3 60.1 62.4	<b>ttenuati</b> eq Eveni	ion) ing Leq 55.7 48.0 59.1 60.9	Night 52.1 47.3 57.9 59.2		59.7 54.7 64.7 66.2		60. 54. 65. 66.			

FHWA-RD-77-108 HIGHWAY	NOISE	PREDIC	TION M	ODEL (9	/12/20	021)				
Scenario: OYC Road Name: Barton St. Road Segment: n/o Van Buren Blvd.		Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA						L INPUTS	3			
Highway Data	, o	Site Con	ditions	(Hard =	10, Sc	oft = 15)				
Average Daily Traffic (Adt): 5,685 vehicles				A	Autos:	15				
Peak Hour Percentage: 9.80%		Me	dium Tru	icks (2 A	xles):	15				
Peak Hour Volume: 557 vehicles		He	avy Truc	ks (3+ A	xles):	15				
Vehicle Speed: 30 mph		Vehicle I	liv							
Near/Far Lane Distance: 18 feet	P		icleType		Dav	Evenina	Niaht	Daily		
Site Data		Veni			71.9%		15.9%			
Barrier Height: 0.0 feet		Me	edium Tr	ucks:	75.3%	7.0%	17.7%	2.20%		
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy Tr	ucks:	60.4%	12.0%	27.6%	3.73%		
Centerline Dist. to Barrier: 33.0 feet	-	N 0			(i f.	- 41				
Centerline Dist. to Observer: 33.0 feet	<i>'</i>	Noise So				et)				
Barrier Distance to Observer: 0.0 feet			Autos							
Observer Height (Above Pad): 5.0 feet			m Trucks			Crada Adi	untmont			
Pad Elevation: 0.0 feet		Heav	y Trucks	5: 8.0	104	Grade Adj	usuneni	. 0.0		
Road Elevation: 0.0 feet	1	Lane Equ	uivalent	Distanc	e (in i	feet)				
Road Grade: 0.0%			Autos	s: 32.1	40					
Left View: -90.0 degrees		Mediur	n Trucks	s: 31.8	864					
Right View: 90.0 degrees		Heav	y Trucks	s: 31.8	891					
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flow Di	stance	Finite	Road	Fresne	e/	Barrier Atte	en Bei	rm Atten		
Autos: 61.75 -2.88	2.78	8	-1.20		4.52	0.0	00	0.000		
Medium Trucks: 73.48 -19.20	2.83	3	-1.20		4.86	0.0	00	0.000		
Heavy Trucks: 79.92 -16.90	2.83	3	-1.20		-5.69	0.0	00	0.000		
Unmitigated Noise Levels (without Topo and barri	ier atten	uation)								
VehicleType Leq Peak Hour Leq Day	Leg Ev		Leq	Night		Ldn	-	NEL		
Autos: 60.4 58.3		56.6		53.0		60.6		61.0		
Medium Trucks: 55.9 54.0		49.7		48.9		56.3		56.6		
Heavy Trucks: 64.6 61.7		60.7		59.6		66.4		66.7		
Vehicle Noise: 66.4 63.8		62.4		60.8		67.7		68.0		
Centerline Distance to Noise Contour (in feet)										
	70 c		65 (		6	0 dBA	55	dBA		
Centerline Distance to Noise Contour (in feet) [ Ldn: CNEL:	70 c	dBA 23 24	65 (	1BA 50 53	Ê	0 dBA 108 113	55	dBA 232 244		

Scenario: OYC	P			Project Name: West Campus Upper Plate										
Road Name: Barto							Vumber:			ppor r iui	•			
Road Segment: n/o V		en Blvd.												
SITE SPECIF		PUT DATA		1	NOISE MODEL INPUTS									
Highway Data					Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (A	Adt):	6,350 vehicle	s					Autos.	15					
Peak Hour Percent	age:	9.80%			Mee	dium T	rucks (2	Axles).	15					
Peak Hour Volu	me:	622 vehicles			Hei	avy Tru	ıcks (3+	Axles).	15					
Vehicle Spe		30 mph		ŀ	Vehicle N	lix								
Near/Far Lane Dista	nce:	18 feet		ŀ	Vehi	cleTyp	e	Day	Evening	Night	Daily			
Site Data							Autos:	71.9%	6 12.2%	15.9%	94.70			
Barrier Hei	ght:	0.0 feet					Frucks:	75.3%	6 7.0%	17.7%	1.97			
Barrier Type (0-Wall, 1-Be	-	0.0			F	leavy	Frucks:	60.4%	6 12.0%	27.6%	3.34			
Centerline Dist. to Bar	rier:	33.0 feet		-	Noise So	urce E	levatio	ns (in f	eet)					
Centerline Dist. to Obser	ver:	33.0 feet		-		Auto		.000						
Barrier Distance to Obser		0.0 feet			Mediur			.297						
Observer Height (Above P		5.0 feet			Heav	y Truc	ks: 8	.004	Grade Ad	ljustment	: 0.0			
Pad Eleva		0.0 feet		-	1 F		4 Distan	6	6					
Road Eleva		0.0 feet		-	Lane Equ				teet)					
Road Gr		0.0%			Mediur	Auto		.140 .864						
Left V Right V		-90.0 degree 90.0 degree				y Truci		.891						
Right V	iew.	90.0 degree	5		neav	y muci	13. 31	.051						
FHWA Noise Model Calcu	lations													
VehicleType REMI		Traffic Flow	Di	stance	Finite		Fres		Barrier At		m Atten			
	61.75	-2.37		2.7		-1.20		-4.52		000	0.00			
	73.48	-19.20		2.8		-1.20		-4.86		000	0.00			
Heavy Trucks:	79.92	-16.90		2.8	33	-1.20		-5.69	0.	000	0.00			
Unmitigated Noise Levels	(witho	ut Topo and I	barri	ier atter	nuation)									
VehicleType Leq Pea				Leq E	vening	Leo	Night		Ldn		NEL			
Autos:	61.0		58.8		57.1		53.		61.		61			
Medium Trucks:	55.9		54.0		49.7		48		56.		56			
Heavy Trucks:	64.6		51.7		60.7		59.		66.		66			
Vehicle Noise:	66.6	5 (	54.0		62.5		60.	8	67.	в	68			
Centerline Distance to No.	ise Cor	ntour (in feet)	,							1				
			. , l	70	dBA	65	dBA		60 dBA		dBA			
			Ldn:		24		5		109		23			
		CN	IEL:		25		5	3	115	ò	24			

Wednesday, September 28, 2022

FHWA-R	D-77-108 HIGH	NAY N	OISE	PREDIC	TION M	ODEL (§	9/12/2	021)			
Scenario: HY Road Name: Barton St. Road Segment: n/o Van Bi	uren Blvd.					Name: \ Imber: 1		Campus L	Jpper	Plate	
SITE SPECIFIC I	NPUT DATA				N	OISE N	IODE		rs		
Highway Data			S	Site Con	ditions (	Hard =	10, S	oft = 15)			
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume: Vehicle Speed:	6,716 vehicle 9.80% 658 vehicles 30 mph			He	dium Tru avy Truc	cks (2 A		15			
Near/Far Lane Distance:	18 feet		v	/ehicle N			Dav	Evening	Nia	whet	Dailu
Site Data			_			utos:	Day 71.9%		15	9%	Daily 94.089
Barrier Height:	0.0 feet				edium Tri		75.3%			.7%	2.20%
Barrier Type (0-Wall, 1-Berm):	0.0			F	leavy Tr	UCKS:	60.4%	6 12.0%	2/	.6%	3.73%
Centerline Dist. to Barrier:	33.0 feet		٨	Voise So	urce Ele	evations	in f	eet)			
Centerline Dist. to Observer:	33.0 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 A	djustr	nent:	0.0
Pad Elevation:	0.0 feet			ane Equ	incolorit	Diotono	e (in	fact			
Road Elevation: Road Grade:	0.0 feet		-	ane Equ	Autos			ieelj			
Left View	0.0%			Madiu	n Trucks						
Right View:	-90.0 degree 90.0 degree				y Trucks						
FHWA Noise Model Calculation	ıs										
VehicleType REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	e/	Barrier A	tten	Bern	n Atten
Autos: 61.75			2.78	-	-1.20		-4.52		.000		0.00
Medium Trucks: 73.48			2.83	-	-1.20		-4.86		.000		0.00
Heavy Trucks: 79.92	-16.18		2.83	3	-1.20		-5.69	0	.000		0.00
Unmitigated Noise Levels (with	out Topo and I	oarrier	atteni	uation)							
VehicleType Leq Peak Ho	ur Leq Day	L	.eq Ev	ening/	Leq I	Vight		Ldn		CN	EL
		59.0		57.4		53.7		61			61.
		54.7		50.4		49.7		57			57.
		62.5		61.5		60.3		67			67.
Vehicle Noise: 6	7.2 0	64.6		63.1		61.5		68	.4		68.
Centerline Distance to Noise C	ontour (in feet)										
	1 7		70 d	04	65 0	ID A		60 dBA		55 a	IBA
			70 a	IBA	05 0	DA		JU UDA			
		.dn:	70 a	іва 26	05 0	56	L'	12	0	00 0	259

	FHWA-RI	D-77-108 HIGH	WAY NO	DISE PRE		10DEL (9/	12/202 <sup>.</sup>	1)					
	io: HYP ne: Barton St.					Name: W lumber: 14		mpus Up	per Plat	e			
Road Segme	<i>nt:</i> n/o Van Bu	ren Blvd.											
	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS									
Highway Data				Site C	onditions	(Hard = 10	0, Soft	= 15)					
Average Daily	Traffic (Adt):	7,381 vehicle	es			AL	itos:	15					
Peak Hour	Percentage:	9.80%			Medium Tr	ucks (2 Ax	les):	15					
Peak H	lour Volume:	723 vehicle	s		Heavy Tru	cks (3+ Ax	les):	15					
Ve	hicle Speed:	30 mph		Vehic	le Mix								
Near/Far La	ne Distance:	18 feet			ehicleType	e D	ay E	vening	Night	Daily			
Site Data						Autos: 7	1.9%	12.2%	15.9%	94.61%			
Ba	rrier Height:	0.0 feet			Medium T	rucks: 7	5.3%	7.0%	17.7%	2.00%			
Barrier Type (0-W		0.0			Heavy T	rucks: 60	0.4%	12.0%	27.6%	3.39%			
Centerline Di	. ,	33.0 feet		Noise	Source E	levations (	(in foot	9					
Centerline Dist.	to Observer:	33.0 feet		140/36	Auto			/					
Barrier Distance	to Observer:	0.0 feet		140	dium Truck	0.00							
Observer Height	(Above Pad):	5.0 feet			eavy Truck			rade Ad	iustment.	0.0			
P	ad Elevation:	0.0 feet							aounom	0.0			
Ro	ad Elevation:	0.0 feet		Lane	Equivalen	t Distance	(in fee	et)					
	Road Grade:	0.0%			Auto		10						
	Left View:	-90.0 degre	es		dium Truck								
	Right View:	90.0 degree	es	н	eavy Truck	s: 31.89	91						
FHWA Noise Mod	el Calculation	s		-									
VehicleType	REMEL	Traffic Flow	Distar		ite Road	Fresnel		arrier Atte	en Ber	m Atten			
Autos:	61.75			2.78	-1.20		1.52		000	0.00			
Medium Trucks:	73.48			2.83	-1.20		1.86		000	0.00			
Heavy Trucks:	79.92	-16.18		2.83	-1.20	-5	5.69	0.0	000	0.00			
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenuatio	n)								
VehicleType	Leq Peak Hou			eq Evening		Night	L	dn		VEL			
Autos:	61		59.5		7.8	54.2		61.7		62.3			
Medium Trucks:	56		54.7		).4	49.7		57.1		57.			
Heavy Trucks:	65		62.5		1.5	60.3		67.1		67.4			
		13	64.7	6	3.2	61.6		68.5	5	68.			
Vehicle Noise:	67	.0											
			)		1	1			1				
Vehicle Noise:		ontour (in feet		70 dBA		dBA	60	dBA		dBA			
Vehicle Noise:		ontour (in feet	) Ldn: NEL:		65 26 28	dBA 57 60	60	dBA 122 128		dBA 263 277			

FHWA-RD-77-108 HIGHWAY	IOISE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Sycamore Canyon Blvd. Road Segment: n/o Cottonwood Av.	Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 13,087 vehicles	Autos: 15								
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 1,283 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 45 mph	Vehicle Mix								
Near/Far Lane Distance: 68 feet	VehicleType Day Evening Night Dail								
Site Data	Autos: 71.9% 12.2% 15.9% 94.08								
Barrier Height: 0.0 feet	Medium Trucks: 75,3% 7,0% 17,7% 2,20								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73								
Centerline Dist. to Barrier: 55.0 feet	-								
Centerline Dist. to Observer: 55.0 feet	Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet	Autos: 0.000								
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297								
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 43.520								
Left View: -90.0 degrees	Medium Trucks: 43.316								
Right View: 90.0 degrees	Heavy Trucks: 43.336								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dist	ance Finite Road Fresnel Barrier Atten Berm Atte								
Autos: 68.46 -1.02	0.80 -1.20 -4.67 0.000 0.0								
Medium Trucks: 79.45 -17.34	0.83 -1.20 -4.87 0.000 0.0								
Heavy Trucks: 84.25 -15.04	0.83 -1.20 -5.38 0.000 0.0								
Unmitigated Noise Levels (without Topo and barrie									
VehicleType Leq Peak Hour Leq Day	Leq Evening Leq Night Ldn CNEL								
Autos: 67.0 64.9	63.2 59.6 67.2 6								
Medium Trucks: 61.7 59.8	55.5 54.8 62.2 6								
Heavy Trucks: 68.8 65.9	64.9 63.8 70.5 7								
Vehicle Noise: 71.5 69.0	67.5 65.6 72.6 7								
Centerline Distance to Noise Contour (in feet)	T T T								
	70 dBA 65 dBA 60 dBA 55 dBA								
Ldn:	82 177 381 8								
CNEL:	86 186 401 8								

FHWA	-RD-77	7-108 HIGH	IWAY	' NOISE	PREDIC	TION	IODEL (	9/12/2	021)					
Scenario: E+P Road Name: Sycamo							t Name: lumber:		Campus U	oper Plat	e			
Road Segment: n/o Cott	onwoo	d Av.												
SITE SPECIFIC	INPU	IT DATA			NOISE MODEL INPUTS									
Highway Data					Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (Adt	): 13,	855 vehicle	es					Autos.	15					
Peak Hour Percentage	e: 9	.80%			Medium Trucks (2 Axles): 15									
Peak Hour Volume	e: 1,3	358 vehicle	s		Hea	avy Tru	cks (3+ )	Axles).	15					
Vehicle Speed		45 mph			Vehicle N	lix								
Near/Far Lane Distance	e:	68 feet			Vehi	cleType	9	Day	Evening	Night	Daily			
Site Data							Autos:	71.9%	6 12.2%	15.9%	93.66			
Barrier Heigh	t:	0.0 feet			Me	dium T	rucks:	75.3%	6 7.0%	17.7%	2.08			
Barrier Type (0-Wall, 1-Berm		0.0			H	leavy T	rucks:	60.4%	6 12.0%	27.6%	4.26			
Centerline Dist. to Barrie	r: {	55.0 feet		t,	Noise So	urce F	levation	s (in f	eet)					
Centerline Dist. to Observe	r: t	55.0 feet		H	10/30 00	Auto		000						
Barrier Distance to Observe	r:	0.0 feet			Mediun			297						
Observer Height (Above Pad		5.0 feet				y Truck		004	Grade Ad	justment	0.0			
Pad Elevation		0.0 feet		-										
Road Elevation		0.0 feet		4	Lane Equ				feet)					
Road Grade		.0%				Auto		520						
Left Viev		90.0 degre			Mediun	n Truck y Truck		316 336						
Right Viev	V: 5	90.0 degre	es		neav	y TTUCK	5. 43.	330						
FHWA Noise Model Calculati	ions													
VehicleType REMEL	Tr	affic Flow	Di	stance	Finite	Road	Fresr	nel	Barrier Att	en Ber	m Atten			
Autos: 68	.46	-0.79		0.8	0	-1.20		-4.67	0.	000	0.00			
	.45	-17.34		0.8		-1.20		-4.87		000	0.00			
Heavy Trucks: 84	.25	-14.21		0.8	3	-1.20		-5.38	0.	000	0.00			
Unmitigated Noise Levels (w	vithout	Topo and	barri	ier atten	uation)									
VehicleType Leq Peak I	Hour	Leq Day	/	Leq E	vening	Leq	Night		Ldn	C	VEL			
Autos:	67.3		65.1		63.5		59.		67.		67			
Medium Trucks:	61.7		59.8		55.5		54.		62.		62			
Heavy Trucks:	69.7		66.8		65.8		64.6	-	71.		71			
Vehicle Noise:	72.1		69.5		68.0		66.3	2	73.	2	73			
Centerline Distance to Noise	Conto	our (in feet	)											
				70 (	dBA	65	dBA		60 dBA	55	dBA			
			Ldn:		90		194		417		89			
		C	NEL:		95		204		440		94			

Wednesday, September 28, 2022

Cottonv	Canyon Blvd. wood Av. IPUT DATA 15,033 vehicle 9.80% 1,473 vehicle 45 mph 68 feet 0.0 feet			He Vehicle I	Job Nu <b>N</b> <b>ditions (</b> dium Tru avy Truc	olse I Hard = cks (2 )	14064 <b>MODE</b> 10, So Autos: Axles):	15 15		ate
(Adt): ntage: olume: Speed: tance: <b>leight:</b>	15,033 vehic 9.80% 1,473 vehicle 45 mph 68 feet			Me He Vehicle I	ditions ( dium Tru avy Truc	Hard =	<b>10, So</b> Autos: Axles):	oft = 15) 15 15	S	
ntage: olume: Speed: tance: <b>leight:</b>	9.80% 1,473 vehicle 45 mph 68 feet			Me He Vehicle I	dium Tru avy Truc	cks (2 )	Autos: Axles):	15 15		
ntage: olume: Speed: tance: <b>leight:</b>	9.80% 1,473 vehicle 45 mph 68 feet		-	He Vehicle I	avy Truc	cks (2 )	Axles):	15		
blume: Speed: tance: leight:	1,473 vehicle 45 mph 68 feet	s	-	He Vehicle I	avy Truc					
Speed: tance: leight:	45 mph 68 feet	s	-	Vehicle I		ks (3+ )	Axles):			
tance: leight:	68 feet							15		
leight:					NIX					
	0.0 feet			VehicleType Day Evening Night						
	0.0 feet				A	utos:	71.9%	12.2%	15.99	6 94.089
				Me	edium Tru	ucks:	75.3%	7.0%	17.79	6 2.20%
	0.0			ŀ	leavy Tru	ucks:	60.4%	12.0%	27.69	% 3.73%
			1	Noise So	ource Ele	vation	s (in fe	eet)		
			L L		Autos	: 0.	000			
				Mediui	n Trucks	2.	297			
				Heav	y Trucks	: 8.	004	Grade Ad	justmei	nt: 0.0
			H							
			1	Lane Equ				reet)		
View: View:										
ulation	- s									
MEL		Dist	ance	Finite	Road	Fresr	iel	Barrier Att	en Be	erm Atten
68.46	-0.42	2	0.8	80	-1.20		-4.67	0.0	000	0.00
79.45	-16.74	Ļ	0.8	33	-1.20		-4.87	0.0	000	0.00
84.25	-14.44	Ļ	0.8	33	-1.20		-5.38	0.0	000	0.00
			Leq E	•	Leq N					CNEL
							-			68.
										63.
										71.
				68.1		66.2	<u> </u>	73.3	2	73.
loise Co	ontour (in fee	t)	70	dΒΔ	65.0	RA	6	O dBA	5	5 dBA
		I dn'	,01		00 0		-		-	900 900
	0									949
	Barrier: server: e Pad): vaation: vaation: Grade: View: View: view: eulation MEL 68.46 79.45 84.25 84.	Barrier:         55.0 feet           Berver:         50.0 feet           server:         0.0 feet           valion:         0.0 feet           valion:         0.0 feet           Sinder         0.0 feet           Valion:         0.0 feet           View:         90.0 degre           valion:         7.0 feet           View:         90.0 degre           valiations         MEL           Traffic Flow         68.46           Vext         16.7.6           Value         Leq Da           67.6         62.3           69.4         72.1           Joise Contour (in feet	Barrier:         55.0 feet           server:         55.0 feet           server:         0.0 feet           varion:         0.0 feet           varion:         0.0 feet           Sradion:         0.0 feet           Sradion:         0.0 feet           Sident:         90.0 degrees           view:         90.0 degrees           view:         90.0 degrees           view:         90.0 degrees           station:         0.164           68.46         -0.42           79.45         -16.74           84.25         -14.44           sc without Topo and barrie           teak Hour         Leg Day           67.6         65.5           62.3         60.4           69.4         66.5	larrier: 55.0 feet erver: 0.0 feet erver: 0.0 feet arrier: 55.0 feet erver: 0.0 feet ervalion: 0.0 feet Grade: 0.0% View: -90.0 degrees View: 90.0 degrees View: 0.0% View: -90.0 degrees View: 0.0% View: -90.0 degrees View: 90.0 degrees View:	Image         Sol 0 feet         Noise Sc           server:         55.0 feet         Medium           server:         0.0 feet         Medium           valion:         0.0 feet         Lane Equ           srade:         0.0%         Medium           View:         -90.0 degrees         Medium           view:         -90.0 degrees         Medium           view:         90.0 degrees         Sa           84.25         -16.74         0.83           84.25         -14.44         0.83           62.3         60.4         65.5           72.1         69.6         65.5           72.1         69.6         68.1           loise Contour (in feet)         70 dBA           Ldn:         90 degrees         10 degrees	Jarrier:         55.0         feet           server:         55.0         feet           server:         5.0         feet           valion:         0.0         feet           valion:         0.0         feet           range:         5.0         feet           valion:         0.0         feet           range:         0.0%         Lane Equivalent           server:         90.0         fegrees           View:         90.0         degrees           valion:         0.0         feet           MEL         Traffic Flow         Distance           View:         90.0         degrees           values         -16.74         0.83           subs         -120           79.45         -16.74         0.83           42.25         -14.44         0.83           62.3         60.4         56.1           62.3         60.4         56.1           69.4         66.5         65.5           72.1         69.6         68.1           loise Contour (in feet)         70 dBA         65 a           Lan:         90	Definition         Distance         Finite Read         Finite Read           partier:         55.0 feet         Autos:         0.0           server:         55.0 feet         Autos:         0.0           server:         0.0 feet         Autos:         0.0           vation:         0.0 feet         Lane Equivalent Distance         Finite Road         Fresr           srade:         0.0%         Autos:         43.         43.         43.           View:         90.0 degrees         Medium Trucks:         43.         43.         44.	Diamine:         55.0         feet           server:         55.0         feet           server:         5.0         feet           server:         5.0         feet           valion:         0.0         feet           valion:         0.0         feet           valion:         0.0         feet           rade:         0.0%         Medium Trucks:         2.297           read:         0.0         feet         Heavy Trucks:         8.004           valion:         0.0         feet         Lane Equivalent Distance (in 1           read:         0.0%         Medium Trucks:         43.316           Heavy Trucks:         43.336         Heavy Trucks:         43.336           vilations         Distance         Finite Road         Fresnel           68.46         -0.42         0.80         -1.20         -6.87           84.25         -14.44         0.83         -1.20         -5.87           84.25         -14.44         0.83         -1.20         -5.81           84 (bithubut Top and barrier attenuation)         Eek Hour         Leq Evening         Leq Night           67.6         65.5         63.8         60.2	Diamine:         55.0         Teet           server:         55.0         Teet           server:         5.0         Teet           server:         5.0         Teet           valion:         0.0         Teet           scalar         4.005:         4.004           grade:         0.0%         Autos:         43.520           View:         90.0         degrees         Medium Trucks:         43.336           scalations         Heavy Trucks:         43.336         Heavy Trucks:         43.336           scalations         Distance         Finite Road         Fresnel         Barrier Att           MEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Att           84.25         -14.44         0.83         -1.20         -5.38         0.0           184 without Topo and barrier attenuation)         Heavy         Lan         67.4         67.4         67.4         67.4         67.4         67.4         67.4 <td>Description         Description           Barrier:         55.0 feet           server:         55.0 feet           server:         55.0 feet           server:         5.0 feet           Pad):         5.0 feet           valion:         0.0 feet           View:         90.0 feet           Control of the train of t</td>	Description         Description           Barrier:         55.0 feet           server:         55.0 feet           server:         55.0 feet           server:         5.0 feet           Pad):         5.0 feet           valion:         0.0 feet           View:         90.0 feet           Control of the train of t

	FHWA-RD-	77-108 HIGHWA	AY NOISI	E PREDIC	TION M	IODEL (9	/12/20	)21)					
Road Nam	io: EAP ne: Sycamore Ca nt: n/o Cottonwo			Project Name: West Campus Upper Plate Job Number: 14064									
SITE	SPECIFIC INP	UT DATA		NOISE MODEL INPUTS									
Highway Data				Site Con	ditions	(Hard =	10, So	ft = 15)					
Average Daily	Traffic (Adt): 1	5,801 vehicles				A	Autos:	15					
Peak Hour	Percentage:	9.80%		Me	dium Tri	ucks (2 A	xles):	15					
Peak H	lour Volume: 1	,548 vehicles		He	avy Tru	cks (3+ A	xles):	15					
Ve	hicle Speed:	45 mph		Vehicle I	Aiv								
Near/Far La	ne Distance:	68 feet			cleType		Day	Evening	Night	Daily			
Site Data				ven			71.9%	12.2%	15.9%				
				1.4	, dium T		75.3%	7.0%	17.7%				
	rrier Height:	0.0 feet			leavy Ti		60.4%		27.6%				
Barrier Type (0-W	. ,	0.0		,	icavy ii	ucho.	00.470	12.070	21.070	4.157			
Centerline Di Centerline Dist		55.0 feet 55.0 feet		Noise Sc	urce El	evations	in fe	et)					
Barrier Distance					Auto	s: 0.0	000						
Observer Height (		0.0 feet 5.0 feet		Mediui	n Truck	s: 2.2	97						
	ad Elevation:	0.0 feet		Heav	y Truck	s: 8.0	04	Grade Ad	iustment	: 0.0			
	ad Elevation: ad Elevation:	0.0 feet		Lane Eq	uvalent	Distanc	e (in f	eet)					
	Road Grade:	0.0%		Lano Lq	Auto			000					
	Left View:	-90.0 degrees		Mediu	n Truck								
	Right View:	90.0 degrees			y Truck								
FHWA Noise Mode	el Calculations												
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	e/	Barrier Att	en Ber	m Atten			
Autos:	68.46	-0.22	0.0	80	-1.20		-4.67	0.0	000	0.000			
Medium Trucks:	79.45	-16.74	0.6	83	-1.20		4.87	0.0	000	0.000			
Heavy Trucks:	84.25	-13.71	0.8		-1.20		-5.38	0.0	000	0.00			
Unmitigated Noise				,									
VehicleType Autos:	Leq Peak Hour		,	Evening	Leq	Night		Ldn 68.0		NEL			
Autos: Medium Trucks:	67.8 62.3			64.0 56.1		60.4 55.4		68.0		68.4 63.0			
Heavy Trucks:	62.3 70.2			56.1 66.3		55.4 65.1		71.9		72.2			
Vehicle Noise:	70.2			68.6		66.7		71.5		72.			
Centerline Distand				06.0		00.7		13.	r	74.			
Centennie Distant	e to Noise Con	itour (in feet)	70	dBA	65	dBA	6	0 dBA	55	dBA			
		Ldr		97		210		452		975			
		CNEL		103		221		477		1,027			
										,			

FHWA-RD-77-108 HIGHWAY NO	DISE PREDICTION MODEL (9/12/2021)
Scenario: OYC Road Name: Sycamore Canyon Blvd. Road Segment: n/o Cottonwood Av.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 16,647 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 1,631 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 45 mph	Vehicle Mix
Near/Far Lane Distance: 68 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Centerline Dist. to Barrier: 55.0 feet	
Centerline Dist. to Observer: 55.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	Theavy Trucks. 0.004 Orace Adjustment. 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 43.520
Left View: -90.0 degrees	Medium Trucks: 43.316
Right View: 90.0 degrees	Heavy Trucks: 43.336
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distan	
Autos: 68.46 0.02	0.80 -1.20 -4.67 0.000 0.000
Medium Trucks: 79.45 -16.29	0.83 -1.20 -4.87 0.000 0.000
Heavy Trucks: 84.25 -14.00	0.83 -1.20 -5.38 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier a	,
	eq Evening Leq Night Ldn CNEL
Autos: 68.1 65.9	64.3 60.6 68.2 68.7
Medium Trucks: 62.8 60.9	56.5 55.8 63.2 63.4
Heavy Trucks:         69.9         67.0           Vehicle Noise:         72.6         70.1	<u>66.0</u> <u>64.8</u> <u>71.6</u> <u>71.9</u>
Vehicle Noise: 72.6 70.1	68.5 66.6 73.6 74.0
Centerline Distance to Noise Contour (in feet)	
🖵	70 dBA 65 dBA 60 dBA 55 dBA
Ldn: CNEL:	96 207 447 963
CNEL:	102 219 471 1,015

FHW	A-RD-	77-108 HIGH	WAY	' NOISE	PREDIC	TION	NODEL (	9/12/2	021)		
Scenario: OYCP	0.	Dial					t Name: Number:		Campus U	oper Plat	е
Road Name: Sycam Road Segment: n/o Co						<i>JUD 1</i>	vumber.	14004			
SITE SPECIFI	C INP	UT DATA			s						
Highway Data					Site Cond	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Ad	·	7,415 vehicle	es					Autos.			
Peak Hour Percentag		9.80%					rucks (2				
Peak Hour Volun		,707 vehicles	5		Hea	avy Tru	icks (3+ .	Axles).	15		
Vehicle Spee		45 mph			Vehicle N	lix					
Near/Far Lane Distan	ce:	68 feet		Γ	Vehi	cleTyp	e	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	6 12.2%	15.9%	93.759
Barrier Heig	ht:	0.0 feet					rucks:	75.3%		17.7%	
Barrier Type (0-Wall, 1-Ber	n):	0.0			H	leavy 1	rucks:	60.4%	6 12.0%	27.6%	4.15
Centerline Dist. to Barn	er:	55.0 feet			Noise So	urce E	levation	s (in f	eet)		
Centerline Dist. to Observ	er:	55.0 feet		F		Auto		000	,		
Barrier Distance to Observ	er:	0.0 feet			Mediun			297			
Observer Height (Above Pa	·	5.0 feet			Heav	y Truck	(s: 8.	004	Grade Ad	justment	0.0
Pad Elevati		0.0 feet		-			4 Di-4	6	f 4)		
Road Elevati		0.0 feet		Ľ.	Lane Equ			520	reet)		
Road Gra Left Vie		0.0% -90.0 degree			Mediur	Auto		520 316			
Right Vie		90.0 degree				y Truck		336			
5		50.0 dog.o.				,					
FHWA Noise Model Calcula											
VehicleType REME		Traffic Flow	Di	stance	Finite		Fresi		Barrier Att		m Atten
	8.46	0.20		0.8		-1.20		-4.67		000	0.00
	9.45 4.25	-16.29 -13.33		0.8 0.8		-1.20		-4.87 -5.38		000 000	0.00
						-1.20		-5.30	0.0	000	0.00
Unmitigated Noise Levels (			-		<u> </u>			1			
VehicleType Leq Peak				Leq E	vening	Leq	Night		Ldn		VEL
Autos: Medium Trucks:	68.3 62.8		66.1 60.9		64.5 56.5		60. 55.		68.4 63.2		68. 63.
Heavy Trucks:	70.5		67.7		66.6		65.		72.3		72
Vehicle Noise:	73.0		70.5		69.0		67.	-	74.		74
Centerline Distance to Nois											
Centernine Distance to Nois	e 001	iour (in leel,	, 	70 (	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		104		223		481		1,03
		0	NEL :		109		235		507		1.092

Wednesday, September 28, 2022

Scenario: HY							Project	Vame · V	Nost (	Campus Up	ner Plat	0			
Road Name: Sycamo	re Ca	anvon Blvd						mber:		Jampus Of	por Fiai				
Road Segment: n/o Cott															
SITE SPECIFIC	INP	UT DATA									s				
Highway Data					Site (	Conc	ditions (	Hard =	10, So	oft = 15)					
Average Daily Traffic (Adt	): 1	9,473 vehicle	s					,	Autos:	15					
Peak Hour Percentage	e.:	9.80%				Мес	dium Tru	cks (2 A	(xles):	15					
Peak Hour Volume	e: 1	1,908 vehicles				Hea	avy Truc	ks (3+ A	(xles):	15					
Vehicle Speed	1:	45 mph		F	Vehio	lo N	liv								
Near/Far Lane Distance	<b>)</b> .'	68 feet		-			cleType		Dav	Evening	Night	Daily			
Site Data								utos:	71.9%	•	15.9%				
Barrier Heigh	t.	0.0 feet				Ме	dium Tru	icks:	75.3%	7.0%	17.7%	2.20			
Barrier Type (0-Wall, 1-Berm	):	0.0				Н	leavy Tri	icks:	60.4%	12.0%	27.6%	3.73			
Centerline Dist. to Barrie		55.0 feet			Noise	So	urce Ele	vation	s (in f	eet)					
Centerline Dist. to Observe		55.0 feet					Autos	0.0	000						
Barrier Distance to Observe		0.0 feet			Me	diun	n Trucks	2.5	297						
Observer Height (Above Pad		5.0 feet			h	leav	y Trucks	. 8.0	004	Grade Ad	iustment	: 0.0			
Pad Elevation		0.0 feet		H											
Road Elevation		0.0 feet		-	Lane	Equ	ivalent			teet)					
Road Grade		0.0%					Autos								
Left Viev		-90.0 degree					n Trucks		316						
Right View	V:	90.0 degree	s			eavj	y Trucks	43.	336						
FHWA Noise Model Calculati															
VehicleType REMEL		Traffic Flow	Dis	stance		nite I	Road	Fresn	-	Barrier Att		rm Attei			
Autos: 68		0.70		0.8			-1.20		-4.67		000	0.0			
Medium Trucks: 79.		-15.61		0.8	-		-1.20		-4.87		000	0.0			
Heavy Trucks: 84		-13.32		0.8			-1.20		-5.38	0.0	000	0.0			
Unmitigated Noise Levels (w			barri												
VehicleType Leq Peak I Autos:	Hour 68.8		6.6	Leq E		g 5.0	Leq N	light 61.3	<u> </u>	Ldn 68.9		NEL 69			
Autos: Medium Trucks:	63.5		0.0 61.5			5.U 7.2		56.5		63.9		64			
Heavy Trucks:	70.6		51.5 57.7			6.7		50.5 65.5		72.3	-	72			
Vehicle Noise:	70.0		70.7		_	0.7 9.2		67.3		74.3		74			
			0.1		0	J.Z		07.0		74.3	,	/-			
Centerline Distance to Noise	Con	nour (in reet)		70	dBA		65 d	BA	(	60 dBA	55	dBA			
		1	dn:		1	07		230		496		1,06			

	FHWA-RD	-77-108 HIGH	WAY NO	ISE PRE	EDICTION I	MODEL (9	/12/2	021)						
Road Nam	io: HYP e: Sycamore C nt: n/o Cottonw			Project Name: West Campus Upper Plate Job Number: 14064										
	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS										
Highway Data				Site	Conditions	(Hard =	10, Sc	oft = 15)						
Average Daily	Traffic (Adt):	20,241 vehicle	s			A	Autos:	15						
Peak Hour	Percentage:	9.80%			Medium T	rucks (2 A	xles):	15						
Peak H	lour Volume:	1,984 vehicles			Heavy Tru	ıcks (3+ A	xles):	15						
Ve	hicle Speed:	45 mph		Vohi	cle Mix									
Near/Far La	ne Distance:	68 feet			VehicleTyp	<u>م</u>	Day	Evening	Night	Daily				
Site Data				_			71.9%		15.9%					
				_	Medium 1		75.3%		17.7%	2.11%				
	rrier Height:	0.0 feet			Heavy 1		60.4%		27.6%	4.09%				
Barrier Type (0-W	. ,	0.0			i leavy i	TUCKS.	00.47	12.070	27.070	4.057				
Centerline Di		55.0 feet		Nois	e Source E	levations	: (in fe	eet)						
Centerline Dist.		55.0 feet			Auto	os: 0.0	000							
Barrier Distance		0.0 feet		M	edium Truck	ks: 2.2	97							
Observer Height (	,	5.0 feet		F	leavy Truck	ks: 8.0	04	Grade Adj	ustment	0.0				
	ad Elevation: ad Elevation:	0.0 feet		1 200	Equivalen	t Dictore	o (in i	foot)						
	ad Elevation: Road Grade:	0.0 feet		Lane	Auto			eeŋ						
	Left View:	0.0%			edium Trucl									
		-90.0 degree			Heavy Truck									
	Right View:	90.0 degree	s		leavy much	13. 43.3	550							
FHWA Noise Mode	el Calculations	1												
VehicleType	REMEL	Traffic Flow	Distan	ce F	inite Road	Fresne	e/	Barrier Atte	en Ber	m Atten				
Autos:	68.46	0.86		0.80	-1.20	-	4.67	0.0	00	0.000				
Medium Trucks:	79.45	-15.61		0.83	-1.20	-	4.87	0.0	00	0.000				
Heavy Trucks:	84.25	-12.74		0.83	-1.20		-5.38	0.0	00	0.00				
Unmitigated Noise														
VehicleType	Leq Peak Hour			q Evenir	•	Night		Ldn		VEL				
Autos:	68.	-	6.8		65.1	61.5		69.1		69.				
Medium Trucks:	63.		51.5		57.2	56.5		63.9		64.				
Heavy Trucks:	71.		58.2		67.2	66.1		72.8		73.2				
Vehicle Noise:	73.		71.1		69.6	67.7		74.7	,	75.1				
Centerline Distand	ce to Noise Co	ntour (in feet)				10.4	_							
			L	70 dBA		dBA	6	0 dBA	55	dBA				
			Ldn:		114	245		528		1,138				
			IEL:		120	258		557		1.200				

FHWA-RD-77-108 F	IIGHWAY NO	DISE PRI	EDICTION	MODEL (9	0/12/202 <sup>.</sup>	1)	
Scenario: E Road Name: Meridian Pkwy. Road Segment: n/o Van Buren Blvd.				ct Name: V Number: 1		mpus Upp	ber Plate
SITE SPECIFIC INPUT DA	ТА			NOISE N	IODEL	INPUTS	
Highway Data		Site	Condition	s (Hard = '	10, Soft	= 15)	
Average Daily Traffic (Adt): 12,903 ve	hicles			A	Autos:	15	
Peak Hour Percentage: 9.80%			Medium 1	rucks (2 A	xles):	15	
Peak Hour Volume: 1,264 vel	nicles		Heavy Tr	ucks (3+ A	xles):	15	
Vehicle Speed: 45 mp	h	Vohi	icle Mix				
Near/Far Lane Distance: 50 fee	t	veni	VehicleTy	ne l	Dav E	vening	Night Daily
Site Data			101110101137		71.9%	12.2%	15.9% 94.08%
Barrier Height: 0.0 fe	ot		Medium	Trucks:	75.3%	7.0%	17.7% 2.20%
Barrier Type (0-Wall, 1-Berm): 0.0	el		Heavy	Trucks:	60.4%	12.0%	27.6% 3.73%
Centerline Dist. to Barrier: 56.0 fe	et						
Centerline Dist. to Observer: 56.0 fe		Nois	e Source			)	
Barrier Distance to Observer: 0.0 fe	et		Au				
Observer Height (Above Pad): 5.0 fe	et		edium Truc			and a date	
Pad Elevation: 0.0 fe	et		Heavy Truc	ks: 8.0	J04 G	rade Adju	stment: 0.0
Road Elevation: 0.0 fe	et	Lane	e Equivale	nt Distanc	e (in fee	et)	
Road Grade: 0.0%			Au	os: 50.3	359		
Left View: -90.0 de	egrees	M	edium Truc	ks: 50.1	183		
Right View: 90.0 de	egrees	1	Heavy Truc	ks: 50.2	200		
FHWA Noise Model Calculations							
VehicleType REMEL Traffic Fl	ow Distar	nce F	inite Road	Fresne	el Ba	arrier Attei	n Berm Atten
Autos: 68.46 -	1.08	-0.15	-1.20	) .	-4.67	0.00	0.000
	7.40	-0.13	-1.20		-4.87	0.00	
Heavy Trucks: 84.25 -1	5.11	-0.13	-1.20	) .	-5.37	0.00	0.000
Unmitigated Noise Levels (without Topo	and barrier a	attenuati	on)				
		eq Evenii	•	q Night		dn	CNEL
Autos: 66.0	63.9		62.2	58.6		66.2	66.6
Medium Trucks: 60.7	58.8		54.5	53.7		61.1	61.4
Heavy Trucks: 67.8	64.9		63.9	62.8		69.5	69.8
Vehicle Noise: 70.5	68.0		66.4	64.6		71.6	71.9
Centerline Distance to Noise Contour (in	feet)						
		70 dBA	-	5 dBA	60	dBA	55 dBA
	Ldn:		71	154		332	714
	CNEL:		75	162		350	753

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (	9/12/2	021)		
Scenario: Road Name: Road Segment:	Meridian Pk						Name: \ umber:		Campus Uj	oper Plat	e
SITE SP	ECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	s	
Highway Data				S	Site Con	ditions	Hard =	10, Sc	oft = 15)		
Average Daily Tra	ffic (Adt):	20.093 vehicle	s					Autos:	15		
Peak Hour Pe	rcentage:	9.80%			Me	dium Tru	icks (2 A	Axles):	15		
Peak Hou	· Volume:	1,969 vehicles	5		Hei	avy Truc	ks (3+ A	Axles):	15		
Vehic	le Speed:	45 mph			/ehicle N	<i>liv</i>					
Near/Far Lane	Distance:	50 feet				cleType		Day	Evening	Night	Daily
Site Data					VCIII			71.9%	•	15.9%	
		0.0.6			Me	edium Tr		75.3%		17.7%	1.419
Barrier Type (0-Wall,	r Height:	0.0 feet 0.0				leavy Tr		60.4%		27.6%	
Centerline Dist. t	,	56.0 feet									
Centerline Dist. to		56.0 feet		٨	loise So				eet)		
Barrier Distance to (		0.0 feet				Autos		000			
Observer Height (Ab		5.0 feet				n Trucks		297			
• 1	Elevation:	0.0 feet			Heav	y Trucks	:: 8.0	004	Grade Ad	ustment.	0.0
	Elevation:	0.0 feet		L	ane Equ	iivalent	Distand	ce (in i	feet)		
Roa	d Grade:	0.0%				Autos	50.	359	,		
1	eft View:	-90.0 degree	s		Mediur	n Trucks	: 50.	183			
Ri	ght View:	90.0 degree	s		Heav	y Trucks	50.	200			
FHWA Noise Model C											
	REMEL	Traffic Flow	Dis	tance	Finite		Fresn	-	Barrier Att		m Atten
Autos:	68.46	0.89		-0.15		-1.20		-4.67		000	0.00
Medium Trucks:	79.45	-17.40		-0.13		-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-13.56		-0.13	3	-1.20		-5.37	0.0	000	0.00
Unmitigated Noise Le					<u> </u>					Т	
	q Peak Hou		_	Leq Ev		Leq			Ldn		VEL
Autos:	68	-	65.9		64.2		60.6		68.		68
Medium Trucks:	60		58.8		54.5		53.7		61.		61.
Heavy Trucks:	69		66.5		65.5		64.3		71.		71.
Vehicle Noise:	72	.1	69.6		68.1		66.1		73.	1	73.
Centerline Distance t	o Noise Co	ntour (in feet)		70							(8.4
			L	70 d		65 (	IBA	-	0 dBA		dBA
			Ldn:		91		195		421		90
		CI	VEL:		96		206		444		951

Wednesday, September 28, 2022

FHW	A-RD-	77-108 HIGH\	VAY	NOISE	E PREI	оістіоі	N MOI	DEL (9	0/12/2	021)			
Scenario: EA			_							Campus	Uppe	r Plate	
Road Name: Meridia						Jo	b Nurr	nber: 1	4064				
Road Segment: n/o Var	n Bure	n Blvd.											
SITE SPECIFIC	C INP	UT DATA											
Highway Data					Site C	onditio	ns (H		- ·	oft = 15)			
Average Daily Traffic (Ad	·	4,821 vehicle	3						Autos:				
Peak Hour Percentag		9.80%				Medium			/				
Peak Hour Volum		,453 vehicles				Heavy	Trucks	(3+ A	xles).	15			
Vehicle Spee		45 mph		ŀ	Vehic	le Mix							
Near/Far Lane Distand	e:	50 feet		ľ	V	ehicleT	ype	1	Day	Evenin	g N	ight	Daily
Site Data							Aut	os:	71.9%	6 12.2	% 1	5.9%	94.089
Barrier Heigl	nt.	0.0 feet				Mediur	n Truc	ks:	75.3%	6 7.0	% 1	7.7%	2.20%
Barrier Type (0-Wall, 1-Bern		0.0				Heav	y Truc	ks: (	60.4%	6 12.0	% 2	7.6%	3.73%
Centerline Dist. to Barrie	er:	56.0 feet		ł	Noise	Source	Flev	ations	: (in f	eet)			
Centerline Dist. to Observe	er:	56.0 feet		ł			utos:		000				
Barrier Distance to Observe	er:	0.0 feet			Mo	dium Tri			97				
Observer Height (Above Pa	d):	5.0 feet				eavv Tr			04	Grade	Adiust	ment	0.0
Pad Elevatio	n:	0.0 feet											
Road Elevation	n:	0.0 feet			Lane	Equival	ent D	istanc	e (in	feet)			
Road Grad	le:	0.0%					utos:	50.3	359				
Left Vie	W:	-90.0 degree	8			dium Tri		50.1	183				
Right Vie	W:	90.0 degree	6		H	eavy Tri	ucks:	50.2	200				
FHWA Noise Model Calcula	tions												
VehicleType REMEL	. 1	Traffic Flow	Dis	tance	Fin	ite Roa	d	Fresn	e/	Barrier	Atten	Berr	n Atten
	3.46	-0.48		-0.1		-1.			-4.67		0.000		0.00
	9.45	-16.80		-0.1		-1.			-4.87		0.000		0.00
Heavy Trucks: 84	1.25	-14.50		-0.1	13	-1.	20		-5.37		0.000		0.00
Unmitigated Noise Levels (			arrie			·							
VehicleType Leq Peak				Leq E	Evening		.eq Nig			Ldn		CN	IEL
Autos:	66.6	-	4.5			2.8		59.2			6.8		67.
Medium Trucks:	61.3		9.4		-	5.1		54.3			61.7		62.
Heavy Trucks:	68.4		5.5		-	1.5		63.4			0.1		70.
Vehicle Noise:	71.1		8.6		6	7.0		65.2		7	2.2		72.
Centerline Distance to Nois	e Con	tour (in feet)	_										
			. L	70	dBA .		65 dB.		1	60 dBA		55	dBA
			.dn:			78		169		-	864		784
		CN	EL:		1	33		178		3	383		826

FH	WA-RD-7	7-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9	12/20	021)		
Scenario: EAP Road Name: Meri Road Segment: n/o	dian Pkwy						Name: W umber: 1		Campus Up	per Pla	te
SITE SPECI	FIC INPU	JT DATA				N	OISE M	ODE		s	
Highway Data	hway Data							0, So	ft = 15)		
Average Daily Traffic ( Peak Hour Percen Peak Hour Vol Vehicle Sp	tage: 9 ume: 2, peed:	011 vehicle 880% 157 vehicles 45 mph				avy Tru	A ucks (2 A: cks (3+ A:		15 15 15		
Near/Far Lane Dist	ance:	50 feet		-	Vehi	cleType	L	Day	Evening	Night	Daily
Site Data							Autos: 7	1.9%	12.2%	15.9%	95.08%
Barrier He Barrier Type (0-Wall, 1-B	erm):	0.0 feet 0.0				edium Ti Ieavy Ti		5.3% 0.4%		17.7% 27.6%	
Centerline Dist. to Ba Centerline Dist. to Obse		56.0 feet 56.0 feet		1	Noise So	urce El	evations	(in fe	et)		
Barrier Distance to Obse Observer Height (Above Pad Elev, Road Elev, Road Elev, Road G Left Right FHWA Noise Model Catcs	Pad): ation: ation: rade: ( View: - View:	0.0 feet 5.0 feet 0.0 feet 0.0 feet 0.0% 90.0 degree			Heav L <b>ane Equ</b> Mediur	Auto n Truck y Truck uivalent Auto n Truck y Truck	s: 2.2 s: 8.0 Distance s: 50.3 s: 50.1	97 04 <b>e (in 1</b> 59 83	Grade Adj	iustmen	t: 0.0
VehicleType REN		raffic Flow	Di	stance	Finite		Fresne		Barrier Atte		rm Atten
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	1.28 -16.80 -13.13		-0.1 -0.1 -0.1	3 3	-1.20 -1.20 -1.20	-	4.67 4.87 5.37	0.0	000 000 000	0.000
Unmitigated Noise Level		,			,					-	
	ak Hour	Leq Day		Leg E		Leq	Night		Ldn	-	NEL
Autos: Medium Trucks: Heavy Trucks:	68.4 61.3 69.8		66.3 59.4 66.9		64.6 55.1 65.9		61.0 54.3 64.8		68.5 61.7 71.5	,	69.0 62.0 71.8
Vehicle Noise:	72.5		70.0		68.5		66.5		73.6		73.
Centerline Distance to No	oise Cont	our (in feet	)								
		, , , , , , ,	1	70 0	1BA	65	dBA	6	0 dBA	55	5 dBA
			Ldn: VEL:		97 102		209 220		450 475		969 1,023

FHWA-RD-77-108 HIGHWAY	NOISE	PREDIC		IODEL (9	)/12/20	021)		
Scenario: OYC Road Name: Meridian Pkwy. Road Segment: n/o Van Buren Blvd.				Name: N lumber: 1		Campus Up	per Plate	
SITE SPECIFIC INPUT DATA			N	IOISE N	IODE	L INPUTS	3	
Highway Data	5	Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 15,703 vehicles					Autos:	15		
Peak Hour Percentage: 9.80%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume: 1,539 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed: 45 mph		Vehicle I	Mise					
Near/Far Lane Distance: 50 feet	<u> </u>				Dav	Evening	Night	Dailu
Site Data		ven	icleType		71.9%	•	•	Daily 94.08%
			, edium T		71.9% 75.3%		17.7%	2.20%
Barrier Height: 0.0 feet			Heavy T		75.3% 60.4%		27.6%	3.73%
Barrier Type (0-Wall, 1-Berm): 0.0		,	ieavy i	uchs.	00.470	12.070	27.0%	3.13%
Centerline Dist. to Barrier: 56.0 feet	٨	Voise So	ource El	evations	; (in fe	et)		
Centerline Dist. to Observer: 56.0 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		Heav	y Truck	s: 8.0	004	Grade Adj	ustment:	0.0
Pad Elevation: 0.0 feet	-	_						
Road Elevation: 0.0 feet	L	ane Eq		Distanc		eet)		
Road Grade: 0.0%			Auto					
Left View: -90.0 degrees			m Truck					
Right View: 90.0 degrees		Heav	ry Truck	s: 50.2	200			
FHWA Noise Model Calculations								
	tance		Road	Fresn	-	Barrier Atte		n Atten
Autos: 68.46 -0.23	-0.15	-	-1.20		-4.67	0.0		0.000
Medium Trucks: 79.45 -16.55	-0.13	-	-1.20		-4.87	0.0		0.000
Heavy Trucks: 84.25 -14.25	-0.13	3	-1.20		-5.37	0.0	00	0.000
Unmitigated Noise Levels (without Topo and barrie		· · · ·						
VehicleType Leq Peak Hour Leq Day	Leq Ev	•	Leq	Night		Ldn	CN	
Autos: 66.9 64.7		63.1		59.4		67.0		67.5
Medium Trucks: 61.6 59.6		55.3		54.6		62.0		62.2
Heavy Trucks: 68.7 65.8		64.8		63.6		70.4		70.7
		67.3		65.4		72.4	ŀ	72.8
Vehicle Noise: 71.4 68.9								
Vehicle Noise: 71.4 68.9 Centerline Distance to Noise Contour (in feet)							-	
Centerline Distance to Noise Contour (in feet)	70 a		65	dBA	6	0 dBA	55 a	
	70 a	1BA 81 86	65	dBA 175 185	6	0 dBA 378 399	55 a	IBA 814 859

	FHWA-RD	-77-108 HIGH	NAY N	IOISE P	REDICT	ION MO	DDEL (9	/12/20	021)						
	o: OYCP			Project Name: West Campus Upper Plate											
Road Name Road Segmen	e: Meridian Pk				Job Number: 14064										
				- 1											
SITE S Highway Data	SPECIFIC IN	PUT DATA		¢,	NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)										
• •				31	le Conui	uons (i			,						
Average Daily	, ,	22,893 vehicle	s		Madi			utos:	15 15						
	Percentage: our Volume:	9.80% 2.244 vehicles					cks (2 A. ks (3+ A.		15						
	hicle Speed:	45 mph					13 (J+ A	xies).	15						
Near/Far Lar		50 feet		Ve	ehicle Mi										
	ie Distance.	50 1001			Vehicl			Day	Evening	Night	Daily				
Site Data								71.9%		15.9%					
Bar	rier Height:	0.0 feet				ium Tru		75.3%		17.7%	1.519				
Barrier Type (0-Wa	. ,	0.0			He	avy Tru	ICKS: (	60.4%	12.0%	27.6%	3.459				
Centerline Dis		56.0 feet		No	oise Sou	rce Ele	vations	(in fe	et)						
Centerline Dist. t		56.0 feet				Autos.	0.0	00	,						
Barrier Distance t		0.0 feet			Medium	Trucks.	2.2	97							
Observer Height (/	,	5.0 feet			Heavy	Trucks.	8.0	04	Grade Ad	iustment.	0.0				
	d Elevation: d Elevation:	0.0 feet 0.0 feet		1.2	ne Equi	alont	Dictore	o (in t	(act)						
	la Elevation: Road Grade:	0.0 reet		La	ine Lyun	Autos.			eeŋ						
r	Left View:	-90.0 degree	c .		Medium										
	Right View:	90.0 degree			Heavy										
FHWA Noise Mode	Calculation														
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite R	oad	Fresne	e/	Barrier Att	en Ber	m Atten				
Autos:	68.46	1.45		-0.15		-1.20	-	4.67	0.0	000	0.00				
Medium Trucks:	79.45	-16.55		-0.13		-1.20	-	4.87	0.0	000	0.00				
Heavy Trucks:	84.25	-12.95		-0.13		-1.20	-	5.37	0.0	000	0.00				
Unmitigated Noise															
	Leq Peak Hou			Leq Eve		Leq N	•		Ldn		VEL				
Autos:	68		6.4		64.7		61.1		68.		69				
Medium Trucks:	61		59.6		55.3		54.6		62.0		62				
Heavy Trucks: Vehicle Noise:	70		67.1 70.2		66.1 68.7		64.9 66.7		71.7		72				
			0.2		68.7		66.7		73.0	5	74				
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dE	BA	65 d	BA	6	i0 dBA	55	dBA				
		1	.dn:		100		215	-	463		99				
		~	IEL:		105		227		488		1,05				

Wednesday, September 28, 2022

FHW/	-RD-77	-108 HIGH\	NAY	NÕISE	PREDIC	TION M	ODEL (S	0/12/2	021)					
Scenario: HY						Project	Name: V	Vest (	Campus Up	per Plat	е			
Road Name: Meridia						Job Ni	umber: 1	4064						
Road Segment: n/o Van	Buren I	Blvd.												
SITE SPECIFIC Highway Data	INPU	T DATA			Site Con					6				
					Sile Com	unions (		Autos:	,					
Average Daily Traffic (Ad		422 vehicle 80%	s		Ma	dium Tru								
Peak Hour Percentag Peak Hour Volum		80% 03 vehicles				avy Truc								
Vehicle Spee		45 mph					N3 (3+ A	ixies).	15					
Near/Far Lane Distanc		45 mpn 50 feet			Vehicle I	lix								
Near/Far Lane Distanc	9. :	50 Teet			Vehi	cleType		Day	Evening	Night	Daily			
Site Data						A	utos:	71.9%	12.2%	15.9%	94.08			
Barrier Heigh	t:	0.0 feet			Me	edium Tr		75.3%		17.7%				
Barrier Type (0-Wall, 1-Bern	):	0.0			F	leavy Tr	ucks:	60.4%	12.0%	27.6%	3.739			
Centerline Dist. to Barrie	r: 5	6.0 feet		-	Noise So	urce Ele	vations	in f	eet)					
Centerline Dist. to Observe	r: 5	6.0 feet		F		Autos		000			-			
Barrier Distance to Observe	r:	0.0 feet			Mediur	n Trucks	. 0.0	297						
Observer Height (Above Pac	) <i>:</i>	5.0 feet				y Trucks		04	Grade Adj	ustment	0.0			
Pad Elevatio	n:	0.0 feet												
Road Elevatio		0.0 feet		_	Lane Equ				feet)					
Road Grad	••••••	0%				Autos								
Left Vier		0.0 degree	s			n Trucks								
Right Vier	V: 9	0.0 degree	s		Heav	y Trucks	50.2	200						
FHWA Noise Model Calculat														
VehicleType REMEL		affic Flow	Dis	stance	Finite		Fresn		Barrier Atte		m Atten			
	.46	0.69		-0.1	-	-1.20		-4.67	0.0		0.00			
	.45	-15.62		-0.1	-	-1.20		-4.87	0.0		0.00			
Heavy Trucks: 84	.25	-13.33		-0.1	3	-1.20		-5.37	0.0	00	0.00			
Unmitigated Noise Levels (w			oarrie		,									
VehicleType Leq Peak		Leq Day		Leq E	vening	Leq I			Ldn		VEL			
Autos: Medium Trucks:	67.8		65.7		64.0		60.4		67.9		68			
	62.5		60.6		56.3		55.5		62.9		63			
Heavy Trucks:	69.6		6.7		65.7		64.6		71.3		71.			
Vehicle Noise:	72.3	6	89.8		68.2		66.3		73.4		73.			
Centerline Distance to Noise	Conto	ur (in feet)												
				70	dBA	65 c			60 dBA	55	dBA			
											93			
		-	_dn: IEL:		94 99		202 213		436 459		989			

FHWA	-RD-77-108	HIGHWA	y noise	E PREDIC	TION M	ODEL (S	9/12/20	21)				
Scenario: HYP Road Name: Meridiar Road Segment: n/o Van			Project Name: West Campus Upper Plate Job Number: 14064									
SITE SPECIFIC	INPUT DA	ATA			N	IOISE N	IODE		5			
Highway Data				Site Con	ditions	(Hard =	10, So	ft = 15)				
Average Daily Traffic (Adt,	: 26,612 v	ehicles					Autos:	15				
Peak Hour Percentage	9.80%			Mee	dium Tra	ucks (2 A	(xles):	15				
Peak Hour Volume	: 2,608 ve	ehicles		Hei	avy Truc	cks (3+ A	(xles)	15				
Vehicle Speed	: 45 m	ph		Vehicle N	Nix							
Near/Far Lane Distance	: 50 fe	et			cleType		Day	Evening	Night	Daily		
Site Data							71.9%	12.2%	15.9%			
Barrier Heigh	: 0.0 f	eet		Me	edium Ti	rucks:	75.3%	7.0%	17.7%	1.60%		
Barrier Type (0-Wall, 1-Berm				F	leavy Ti	rucks:	60.4%	12.0%	27.6%	3.49%		
Centerline Dist. to Barrie	r: 56.0 f	eet		Noise So	urce Fl	evation	: (in fe	ef)				
Centerline Dist. to Observe	r: 56.0 f	eet			Auto		000	00				
Barrier Distance to Observe	r: 0.0 f	eet		Mediur	n Truck:		297					
Observer Height (Above Pad	: 5.0 f	eet			y Truck			Grade Adj	ustment	0.0		
Pad Elevation	n: 0.0 f	eet										
Road Elevation	0.01	eet		Lane Equ				eet)				
Road Grade	0.070				Autos							
Left View		legrees			n Truck							
Right View	/: 90.0 c	legrees		Heav	y Truck:	s: 50.1	200					
FHWA Noise Model Calculati	ons											
VehicleType REMEL	Traffic F	low Di	istance	Finite	Road	Fresn	el I	Barrier Atte	en Ber	m Atten		
Autos: 68.		2.10	-0.1		-1.20		-4.67	0.0		0.000		
Medium Trucks: 79.		15.62	-0.1		-1.20		-4.87	0.0		0.000		
Heavy Trucks: 84.	25 -1	12.24	-0.1	13	-1.20		-5.37	0.0	00	0.000		
Unmitigated Noise Levels (w	ithout Topo	and barr	ier attei	nuation)								
VehicleType Leq Peak I		q Day		vening	Leq	Night		Ldn		VEL		
Autos:	69.2	67.1		65.4		61.8		69.4		69.8		
Medium Trucks:	62.5	60.6		56.3		55.5		62.9		63.2		
Heavy Trucks:	70.7	67.8		66.8		65.6		72.4		72.7		
Vehicle Noise:	73.4	70.9		69.4		67.4		74.5		74.8		
Centerline Distance to Noise	Contour (in	n feet)										
				dBA	65	dBA	6	0 dBA	55	dBA		
		Ldn:		111		239		515		1,110		
		CNEL:		117		252		544		1,171		

FHWA-RD-77-108 HIGHWAY NO	DISE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Day St. Road Segment: n/o Alessandro Blvd.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 9,913 vehicles Peak Hour Percentage: 9,80% Peak Hour Volume: 972 vehicles	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15
Vehicle Speed: 25 mph	Vehicle Mix
Near/Far Lane Distance: 36 feet	Vehicle Type Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Centerline Dist. to Barrier: 44.0 feet	
Centerline Dist. to Observer: 44.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Autos: 0.000
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 40.460
Left View: -90.0 degrees	Medium Trucks: 40.241
Right View: 90.0 degrees	Heavy Trucks: 40.262
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distan	ce Finite Road Fresnel Barrier Atten Berm Atten
Autos: 58.73 0.32	1.28 -1.20 -4.61 0.000 0.000
Medium Trucks: 70.80 -15.99	1.31 -1.20 -4.87 0.000 0.000
Heavy Trucks: 77.97 -13.70	1.31 -1.20 -5.50 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier	ttenuation)
VehicleType Leq Peak Hour Leq Day L	eq Evening Leq Night Ldn CNEL
Autos: 59.1 57.0	55.3 51.7 59.3 59.7
Medium Trucks: 54.9 53.0	48.7 47.9 55.3 55.6
Heavy Trucks: 64.4 61.5	60.5 59.3 66.1 66.4
Vehicle Noise: 65.9 63.2	61.8 60.3 67.2 67.5
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn: CNEL:	29 62 133 287 30 65 140 301

FH	NA-RD-	77-108 HIGH	IVVAT	NUISE	PREDIC		NODEL (	9/12/2	021)				
Scenario: E+P									Campus U	oper Plat	е		
Road Name: Day						Job I	lumber:	14064					
Road Segment: n/o A	lessand	ro Blvd.											
SITE SPECI	FIC INF	UT DATA			NOISE MODEL INPUTS								
Highway Data					Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (	4 <i>dt):</i> 1	0,579 vehicle	es					Autos:					
Peak Hour Percent		9.80%					rucks (2 )						
Peak Hour Volu		,037 vehicle	s		Hea	avy Tru	icks (3+ )	Axles):	15				
Vehicle Sp		25 mph			Vehicle N	lix							
Near/Far Lane Dista	nce:	36 feet			Vehi	cleType	е	Day	Evening	Night	Daily		
Site Data							Autos:	71.9%	12.2%	15.9%	94.45		
Barrier Hei	ght:	0.0 feet			Me	dium 1	rucks:	75.3%	7.0%	17.7%	2.06		
Barrier Type (0-Wall, 1-Be	-	0.0			н	leavy 1	rucks:	60.4%	12.0%	27.6%	3.49		
Centerline Dist. to Ba	rrier:	44.0 feet		5	Noise So	urce F	levation	s (in fi	pet)				
Centerline Dist. to Obse	rver:	44.0 feet		H	10/30 00	Auto		000					
Barrier Distance to Obse	rver:	0.0 feet			Mediun			297					
Observer Height (Above F	Pad):	5.0 feet				/ Truck		004	Grade Ad	iustment.	0.0		
Pad Eleva		0.0 feet		-									
Road Eleva		0.0 feet		4	Lane Equ				feet)				
Road Gr		0.0%				Auto		460					
Left V		-90.0 degree			Mediun			241					
Right V	lew:	90.0 degree	es		Heavy	/ Truck	(S. 40.	262					
FHWA Noise Model Calcu	lations												
VehicleType REM	EL	Traffic Flow	Di	stance	Finite I	Road	Fresr	nel	Barrier Att	en Ber	m Atten		
Autos:	58.73	0.62		1.2		-1.20		-4.61		000	0.00		
Medium Trucks:	70.80	-15.99		1.3		-1.20		-4.87		000	0.00		
Heavy Trucks:	77.97	-13.70		1.3	1	-1.20		-5.50	0.0	000	0.00		
Unmitigated Noise Levels	(withou	ut Topo and	barri	ier atten	uation)								
	ak Hour			Leq E	vening	Leq	Night		Ldn		VEL		
Autos:	59.4		57.3		55.6		52.0		59.		60		
Medium Trucks:	54.9		53.0		48.7		47.9		55.3		55		
Heavy Trucks:	64.4		61.5		60.5		59.3		66.		66		
Vehicle Noise:	65.9	)	63.3		61.9		60.3	3	67.3	3	67		
Centerline Distance to No	ise Cor	tour (in feet	)	-		-							
				70 (	dBA	65	dBA		60 dBA		dBA		
			Ldn:		29		62		134		28		
			NEL:		30		65		141		304		

Wednesday, September 28, 2022

	FHWA-RD	-77-108 HIGH\	VAY N	IOISE	PREDIC	TION MO	ODEL (9/	12/2021	)		
Scenario: E	A					Project I	Vame: W	est Car	npus Up	per Plat	e
Road Name: D						Job Ni	ımber: 14	064			
Road Segment: n	/o Alessan	dro Blvd.									
	CIFIC IN	PUT DATA					OISE MO			;	
Highway Data				1	Site Con	ditions (	Hard = 1	0, Soft	= 15)		
Average Daily Trafi	ic (Adt):	11,387 vehicles	6					utos:	15		
Peak Hour Perc		9.80%					cks (2 Ax		15		
Peak Hour	Volume:	1,116 vehicles			Hea	avy Truc	ks (3+ Ax	les):	15		
	Speed:	25 mph			Vehicle N	<i>lix</i>					
Near/Far Lane D	istance:	36 feet		F		cleType	D	ay E	vening	Night	Daily
Site Data						A	utos: 7	1.9%	12.2%	15.9%	94.089
Barrier	Heiaht:	0.0 feet			Me	edium Tru	ucks: 7	5.3%	7.0%	17.7%	2.209
Barrier Type (0-Wall, 1		0.0			H	leavy Tru	ucks: 6	0.4%	12.0%	27.6%	3.73%
Centerline Dist. to	Barrier:	44.0 feet			Noise So	urce Ele	vations	(in feet)	)		
Centerline Dist. to O	bserver:	44.0 feet		F		Autos					
Barrier Distance to O	bserver:	0.0 feet			Mediur	n Trucks	. 0.00	-			
Observer Height (Abo		5.0 feet				y Trucks			ade Adju	ustment.	0.0
	levation:	0.0 feet									
	levation:	0.0 feet		1	Lane Equ				t)		
	Grade:	0.0%				Autos					
	eft View:	-90.0 degree				n Trucks					
Rig	ht View:	90.0 degree	6		Heav	y Trucks	40.26	52			
FHWA Noise Model Ca	lculations	;		-							
VehicleType R	EMEL	Traffic Flow	Dista		Finite		Fresnel		rrier Atte	n Ber	m Atten
Autos:	58.73	0.93		1.2	-	-1.20		1.61	0.0		0.00
Medium Trucks:	70.80	-15.39		1.3		-1.20		1.87	0.0		0.00
Heavy Trucks:	77.97	-13.10		1.3	1	-1.20	-5	5.50	0.0	00	0.00
Unmitigated Noise Lev			-								
	Peak Hou			Leg Ei	vening	Leq N	•	Lo		CI	VEL
Autos:	59.		7.6		55.9		52.3		59.9		60.
Medium Trucks:	55.		3.6		49.3		48.5		55.9		56.
Heavy Trucks:	65.		2.1		61.1		59.9		66.7		67.
Vehicle Noise:	66.	5 6	3.8		62.5		60.9		67.8		68.
Centerline Distance to	Noise Co	ntour (in feet)		-							
				70 0	dBA	65 d	BA	60 0	1BA	55	dBA
			.dn: EL:		31		68 71		146 153		314 331

Site Data         Autos:         71.9%         12.2%         15.9%         94.           Barrier Height:         0.0 feet         Medium Trucks:         71.9%         12.2%         15.9%         94.           Barrier Height:         0.0 feet         Medium Trucks:         73.9%         17.7%         2.           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         44.0 feet         Noise Source Elevations (in feet)         3.           Centerline Dist. to Observer:         44.0 feet         Noise Source Elevations (in feet)         Autos:         0.00           Deserver Height (Above Pad):         5.0 feet         Medium Trucks:         2.297         Medium Trucks:         2.297           Observer:         0.0 feet         Left View:         -90.0 degrees         Heavy Trucks:         40.040           Road Grade:         0.0%         Left View:         -90.0 degrees         Medium Trucks:         40.262           FHWA Noise Model Calculations         Vehice Type         REMEL         Triffic Flow         Distance         Finite Road         Fersnel         Barrier Atten         Berm Atten           Autos:         58.73         1.19         1.20         -4.61         0.000         0		FHWA-RD	0-77-108 HIGHW	AY NOISI	E PREDIC	TION MO	DEL (9/12	/2021)		
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         12,053 vehicles         Autos:         15           Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Vehicle Speed:         25 mph         Heavy Trucks (3+ Axles):         15           Near/Far Lane Distance:         36 feet         Vehicle Mix         Vehicle Mix           Barrier Height:         0.0 feet         Autos:         7.19%         12.2%         15.3%         94.           Barrier Distance to Observer:         44.0 feet         Medium Trucks:         60.4%         12.0%         27.6%         34.           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         0.0         Medium Trucks:         0.00         Medium Trucks:         2.297           Observer: Height Vikov:         90.0 degrees         Red Grade:         0.0%         Medium Trucks:         40.261         4.060           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Autos:         40.400         4.61         0.000         0           Vehicle Type         RBarit View:         90.0 degrees         Heavy T	Road Nan	ne: Day St.	ndro Blvd.						pper Plat	te
Average Daily Traffic (Ad):         12,053 vehicles         Autos:         15           Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         1,181 vehicles         Heavy Trucks (34 Axles):         15           Vehicle Speed:         25 mph         Vehicle Type         Day         Evening         Night         Day           Site Data         Autos:         71.9%         12.2%         15.%         94.4           Barrier Theight:         0.0 feet         Medium Trucks:         75.3%         70.9%         17.7%         2.           Barrier Type (0-Wall, 1-Berm):         0.0         Feet         Medium Trucks:         70.9%         17.7%         2.           Centerline Dist. to Barrier:         44.0 feet         Autos::         0.00         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos::         40.261         Heavy Trucks:         40.241           Right View:         90.0 degrees         Heavy Trucks:         40.261         Heavy Trucks:         40.261           FHWA Noise Model Calculations         VehicleType	SITE	SPECIFIC IN	IPUT DATA			NC	ISE MOD	EL INPUT	s	
Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         1,181 vehicles         Heavy Trucks (2 Axles):         15           Vehicle Speet         25 mph         Vehicle Speet         25 mph           Near/Far Lane Distance:         36 feet         Vehicle Mix         15           Site Data         Autos:         71.9%         12.2%         15.9%         94.           Barrier Height:         0.0 feet         Medium Trucks:         73.9%         7.0%         17.7%         2.           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         44.0 feet         Moise Source Elevations (in feet)         Noise Source Elevations (in feet)         0.00         Medium Trucks:         2.297         Heavy Trucks:         0.000         Medium Trucks:         2.297         Heavy Trucks:         0.00         Medium Trucks:         2.297         Heavy Trucks:         0.00         Medium Trucks:         4.0 460         Lane Equivalent Distance (in feet)         0.0         0.0         Medium Trucks:         4.0 460         Medium Trucks:	Highway Data				Site Con	ditions (H	lard = 10,	Soft = 15)		
Peak Hour Volume:         1,181 vehicles Vehicle Speed:         25 mph           Near/Far Lane Distance:         36 feet         Vehicle Mix           Site Data         Autos:         71.9%         12.2%           Barrier Height:         0.0 feet         Autos:         71.9%         12.2%           Barrier Height:         0.0 feet         Medium Trucks:         75.3%         7.0%         17.7%           Barrier Dist. to Diserver:         40.0 feet         Medium Trucks:         0.0         16.0%           Barrier Dist. to Diserver:         40.0 feet         Moles         0.0         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297         0.00           Read Grade:         0.0 feet         Autos:         40.460         Medium Trucks:         40.262           Road Grade:         0.0%         Autos:         40.460         Medium Trucks:         40.262           FHWA Noise Model Calculations         Vehicle Type         RBMP View:         90.0 degrees         Heavy Trucks:         40.262           FHWA Noise Model Calculations         Vehicle Type         RBMP View:         90.0 degrees         Heavy Trucks:         40.61         0.000         0.0           Medium	Average Daily	Traffic (Adt):	12,053 vehicles				Auto	s: 15		
Vehicle Speed:         25 mph 36 feet           Vehicle Mix           Vehicle Type         Day         Evening         Night         Distance           Site Data         Autos:         71.9%         12.9%         15.9%         94.0%           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Diserver:         44.0 feet         Medium Trucks:         75.3%         7.0%         17.7%         2.           Barrier Type (0-Wall, 1-Berm):         0.0         Feet         Autos:         60.4%         12.0%         27.6%         3.           Centerline Dist. to Observer:         44.0 feet         Autos:         0.00         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         40.0460         Medium Trucks:         40.241           Right View:         90.0 degrees         Heavy Trucks:         40.241         Heavy Trucks:         40.262           FHWA Noise Model Calcutations         Vehicle Type         RefMeL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrie Atten           Medium Trucks:	Peak Hour	Percentage:	9.80%		Mee	dium Truc	ks (2 Axles	s): 15		
Near/Far Lane Distance:         36 feet         Venicie mix         Venicie mix         Night         Di           Site Data         Autos:         71.9%         12.2%         15.9%         94.           Barrier Height:         0.0 feet         Medium Trucks:         71.9%         12.2%         15.9%         94.           Barrier Type (0-Walt, 1-Berm):         0.0 feet         Medium Trucks:         73.9%         7.0%         17.7%         2.           Centerline Dist. to Barrier:         44.0 feet         Moise Source Elevations (in feet)         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Medium Trucks:         2.297         Medium Trucks:         2.297           Observer Height (Above Pad):         0.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Medium Trucks:         40.460         Medium Trucks:         40.261           Robed Calculations         90.0 degrees         Medium Trucks:         40.261         Medium Trucks:         40.260           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Al           Autos:         58.73 <td< td=""><td>Peak H</td><td>lour Volume:</td><td>1,181 vehicles</td><td></td><td>Hei</td><td>avy Truck</td><td>s (3+ Axles</td><td>s): 15</td><td></td><td></td></td<>	Peak H	lour Volume:	1,181 vehicles		Hei	avy Truck	s (3+ Axles	s): 15		
Near/Far Lane Distance:         36 feet         VehicleType         Day         Evening         Night         Day           Site Data         Autos:         71.9%         12.9%         15.9%         94.0%           Barrier Type (0-Wall, 1-Berm):         0.0         64.0%         12.0%         27.6%         37.7%         2.           Barrier Type (0-Wall, 1-Berm):         0.0         64.0%         12.0%         27.6%         3.           Centerline Dist. to Barrier:         44.0 feet         Autos:         0.00         Medium Trucks:         2.297           Observer:         0.0 feet         Autos:         0.00         Medium Trucks:         2.297           Observer:         0.0 feet         Autos:         0.00         Medium Trucks:         40.241           Road Grade:         0.0%         Lare Equivalent Distance (in feet)         Autos:         40.241           Robit View:         90.0 degrees         Heavy Trucks:         40.241         Heavy Trucks:         40.0           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Medium Trucks:         70.80         57.9         56.2         52.6         60.1         <	Ve	hicle Speed:	25 mph		Vohiclo	liv				
Site Data         Autos:         71.9%         12.2%         15.9%         94.           Barrier Height:         0.0 feet         Medium Trucks:         71.9%         12.2%         15.9%         94.           Barrier Type (0-Walt, 1-Berm):         0.0         Centerline Dist. to Barrier:         44.0 feet         Medium Trucks:         71.9%         12.2%         15.9%         94.           Centerline Dist. to Barrier:         44.0 feet         Noise Source Elevations (in feet)           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0 feet         Lane Equivalent Distance (in feet)         Matos:         40.400           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.61         0.000           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.61         0.000         0           Medium Trucks:         71.9%         12.2%         15.9%         1.31         -1.20         -4.61         0.000         0           Medium Trucks:         70.80         -15.39         1.3	Near/Far La	ne Distance:	36 feet				Dav	Evening	Night	Daily
Barrier Height:         0.0 feet         Medium Trucks:         75.3%         7.0%         17.7%         2.           Barrier Type (0-Wall, 1-Berm):         0.0         10.0         Heavy Trucks:         60.4%         12.0%         27.6%         3.           Centerline Dist. to Diserver:         44.0 feet         Moise Source Elevations (in feet)         Autos:         0.000           Barrier Distance to Observer:         44.0 feet         Autos:         0.000         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Autos:         0.000         Medium Trucks:         2.297           Road Grade:         0.0%         Left View:         -90.0 degrees         Medium Trucks:         4.029           FHWA Noise Model Calcutations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.61         0.000         Co           Medium Trucks:         77.9         -13.10         1.31         -1.20 <td>Sito Data</td> <td></td> <td></td> <td></td> <td>veni</td> <td></td> <td></td> <td>•</td> <td></td> <td></td>	Sito Data				veni			•		
Barrier Tyse (V-Wall, 1-Bern; Centerline Dist. to Barrier:         44.0 feet         Heavy Trucks:         60.4%         12.0%         27.8%         3.           Centerline Dist. to Observer:         44.0 feet         Autos:         0.000         Meany Trucks:         60.4%         12.0%         27.8%         3.           Deserver Height (Above Pad):         5.0 feet         Autos:         0.000         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.0.04         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Autos:         40.0460         Medium Trucks:         40.241           Right View:         90.0 degrees         Heavy Trucks:         40.241         Heavy Trucks:         40.241           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Medium Trucks:         70.79         1.31         -1.20         -4.61         0.000         C           Umitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leq Night					M					
Barner Type (Vertine Dist. to Barrier:         44.0 feet           Centerline Dist. to Diserver:         44.0 feet           Barrier Distance to Observer:         44.0 feet           Barrier Distance to Observer:         0.0 feet           Barrier Distance to Observer:         0.0 feet           Pad Elevation:         0.0 feet           Road Grade:         0.0 feet           Road Grade:         0.0 feet           Road Grade:         0.0 feet           Autos:         40.0 feet           Road Grade:         0.0 feet           Road Grade:         0.0 feet           VehicleType         REMEL           VehicleType         REMEL           VehicleType         Red Kings           Heavy Trucks:         70.80           VehicleType         Leq Peak Hour           Leq Peak Hour         Leq Pering           Leq VenicleType         Leq Reak Hour           Leq Peak Hour         Leq Vening           VehicleType         Leq Reak Hour           Leq Sol         55.5           Heavy Trucks:         55.5           Heavy Trucks:         55.5           Heavy Trucks:         55.5           Heavy Trucks:         55.5										
Centerline Dist. to Observer:         44.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Autos:         4.040           Road Grade:         0.0%         Medium Trucks:         4.0.262         Medium Trucks:         4.0.262           FHWA Noise Model Calcutations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Berrin Atten         Berrin Atten         Berrin Atten         Berrin Atten         Berrin Atten         Medium Trucks:         7.13.1         1.20         -4.61         0.000         C           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.61         0.000         C           Ummitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Neak Hour         Leq Day         Leq Reging         Leq Night         Ldn         CNEL           Autos:		. ,							27.070	0.02 /
Barrier Distance to Observer:         0.0 feet         Auros:         0.000           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Autos:         40.460           Road Cirade:         0.0%         Autos:         40.460         Medium Trucks:         40.241           Right View:         90.0 degrees         Heavy Trucks:         40.460         Medium Trucks:         40.460           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrn Atten           Medium Trucks:         58.73         1.19         1.28         -1.20         -4.61         0.000         C           Medium Trucks:         70.97         -13.10         1.31         -1.20         -5.50         0.000         C           Umitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leq Peak Hour         Leq Vering         Leq Night         Ldn         CNEL           Autos:         65.5         53.6         49.3         48.5<					Noise So	urce Elev	vations (in	feet)		
Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad 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         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Medium Trucks:         40.261           Wehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atte						Autos:	0.000			
Pad Elevation:         0.0 feet         Heavy Trucks:         8.004         Grade Adjustment.         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)         Autos:         40.40           Road Grade:         0.0%         Autos:         40.40         Medium Trucks:         40.241           Wehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Berring           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Berring           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.61         0.000         CO           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.61         0.000         CO           Unmitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leq Peak Hour         Leq Day         Leq Right         Ldn         CNEL           Autos:         60.0         57.9         56.2         52.6         60.1         Medium Trucks:         55.5         53.6         49.3         48.5         55.9         Heavy Tr					Mediur	n Trucks:	2.297			
Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Read Grade:         0.0%         Autos:         40.460           Left View:         -90.0 degrees         Medium Trucks:         40.241           Right View:         90.0 degrees         Finite Road         Fresnel         Barrier Atten         Berrer Atten           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrer Atten           Medium Trucks:         58.73         1.19         1.28         -1.20         -4.61         0.000         CO           Heavy Trucks:         77.97         -13.10         1.31         -1.20         -4.67         0.000         CO           Unmitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leq Peak Hour         Leq Zevening         Leq Night         Ldn         CNEL           Autos:         60.0         57.9         56.2         52.6         60.1           Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         66.5         63.9         62.5         60.9         67.9           Vehicle Noise:         66.5         6	•	,			Heav	y Trucks:	8.004	Grade Ad	ljustment	: 0.0
Road Grade:         0.0%         Autos:         40.460           Left View:         -90.0 degrees         Medium Trucks:         40.241           Heavy Trucks:         40.262         Medium Trucks:         40.262           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten           Autos:         58.73         1.19         1.28         -1.20         -4.61         0.000         C           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.61         0.000         C           Heavy Trucks:         77.97         -13.10         1.31         -1.20         -5.50         0.000         C           Unmitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Revening         Leq Night         Ldn         CNEL           Autos:         65.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Vehicle Noise:         66.5         63.9					Lane Fou	ivalent l	)istance (i	n feet)		
Indian Tracks:         40.241           Left View:         -90.0 degrees           Right View:         90.0 degrees           PHWA Noise Model Calculations         Heavy Tracks:         40.241           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Alt           Autos:         58.73         1.19         1.28         -1.20         -4.61         0.000         C           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.67         0.000         C           Medium Trucks:         70.80         -15.39         1.31         -1.20         -5.50         0.000         C           Unmitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leg Peak Hour         Leg Day         Leg Viewing         Leg Night         Ldn         CNEL           Autos:         60.0         57.9         56.2         50.0         60.1         Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         65.0         62.1         61.1         59.9         66.7         Vehicle Noise:         66.5         63.9         62.5 <td< td=""><td></td><td></td><td></td><td></td><td>Lano Lqu</td><td></td><td></td><td></td><td></td><td></td></td<>					Lano Lqu					
Right View:         90.0 degrees         Heavy Trucks:         40.262           FHWA Noise Model Calculations         Personal         Fresnel         Barrier Atten         Berry Atten           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berry Atten           Mutos:         58.73         1.19         1.28         -1.20         -4.61         0.000         CC           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.67         0.000         CC           Unmitigated Noise Levels (without Topo and barrier attenuation)         1.31         -1.20         -5.50         0.000         CC           Unmitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Lan         CNEL           Autos:         60.0         57.9         56.2         52.6         60.1           Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         66.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distanc					Mediur					
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrn Atten           Autos:         58.73         1.19         1.28         -1.20         -4.61         0.000         0           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.67         0.000         0           Heavy Trucks:         77.97         -13.10         1.31         -1.20         -5.50         0.000         0           Umnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Zvening         Leq Night         Ldn         CNEL           Autos:         60.0         57.9         56.2         52.6         60.1           Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         65.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         TO dBA         65 dBA         60 dBA         55 dBA										
Autos:         58.73         1.19         1.28         -1.20         -4.67         0.000         C           Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.67         0.000         C           Heavy Trucks:         77.97         -13.10         1.31         -1.20         -5.50         0.000         C           Unntilgated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Ldn         CNEL           Autos:         60.0         57.9         56.2         52.6         60.1         Medium Trucks:         55.5         53.6         49.3         48.5         55.9         Heavy Trucks:         65.0         62.1         61.1         59.9         66.7         Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         TO dBA         65 dBA         60 dBA         55 dBA	FHWA Noise Mod	el Calculation:	s							
Medium Trucks:         70.80         -15.39         1.31         -1.20         -4.87         0.000         C           Heavy Trucks:         77.97         -13.10         1.31         -1.20         -5.50         0.000         C           Unmitigated Noise Levels (without Topo and barrier attenuation)          -12.0         -5.50         0.000         C           Vehicle Type         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         60.0         57.9         56.2         52.6         60.1         Medium Trucks:         55.5         53.6         49.3         48.5         55.9         Heavy Trucks:         66.5         63.9         62.5         60.9         67.9         Centerline Distance to Noise Contour (in feet)           Centerline Distance to Noise Contour (in feet)	VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Bei	rm Atten
Heavy Trucks:         77.97         -13.10         1.31         -1.20         -5.50         0.000         C           Unnitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leq Peak Hour         Leq Qay         Leq Vening         Leq Night         Ldn         CNEL           Autors:         60.0         57.9         56.2         52.6         60.1           Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         66.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         TO dBA         65 dBA         60 dBA         55 dBA	Autos:	58.73	1.19	1.1	28	-1.20	-4.6	1 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:         60.0         57.9         56.2         52.6         60.1           Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         65.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA	Medium Trucks:	70.80	-15.39	1.3	31	-1.20	-4.8	7 0.	000	0.00
Vehicle Type         Leq Peak Hour         Leq Day         Leq Vening         Leq Night         Ldn         CNEL           Autos:         60.0         57.9         56.2         52.6         60.1           Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         65.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA						-1.20	-5.5	0 0.	000	0.000
Autos:         60.0         57.9         56.2         52.6         60.1           Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         65.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA					,	( N	in the	l da		
Medium Trucks:         55.5         53.6         49.3         48.5         55.9           Heavy Trucks:         65.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA					•	Leq N	-	-		NEL 60.6
Heavy Trucks:         65.0         62.1         61.1         59.9         66.7           Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)           70 dBA         65 dBA         60 dBA         55 dBA										56.2
Vehicle Noise:         66.5         63.9         62.5         60.9         67.9           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA										56. 67.(
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA										68.2
70 dBA 65 dBA 60 dBA 55 dBA					02.0		00.5	07.	5	00.4
	Centernile Distan	Le lo MOISE CL	intour (in reet)	70	dBA	65 dE	BA	60 dBA	55	dBA
			Ld		-					316
CNEL: 33 72 154										333

FHWA-RD-77-108 HIGHWAY NO	ISE PREDICTION MODEL (9/12/2021)
Scenario: OYC Road Name: Day St. Road Segment: n/o Alessandro Blvd.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 12,893 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 1,264 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 25 mph	Vehicle Mix
Near/Far Lane Distance: 36 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Centerline Dist. to Barrier: 44.0 feet	
Centerline Dist. to Observer: 44.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Autos: 0.000
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 40.460
Left View: -90.0 degrees	Medium Trucks: 40.241
Right View: 90.0 degrees	Heavy Trucks: 40.262
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distan	
Autos: 58.73 1.47	1.28 -1.20 -4.61 0.000 0.000
Medium Trucks: 70.80 -14.85	1.31 -1.20 -4.87 0.000 0.000
Heavy Trucks: 77.97 -12.56	1.31 -1.20 -5.50 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier a	ttenuation)
	q Evening Leq Night Ldn CNEL
Autos: 60.3 58.1	56.5 52.8 60.4 60.9
Medium Trucks: 56.1 54.1	49.8 49.1 56.5 56.7
Heavy Trucks: 65.5 62.6	61.6 60.5 67.2 67.5
Vehicle Noise: 67.0 64.4	63.0 61.4 68.3 68.7
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	34 74 158 341 36 77 167 359
CNEL	

FHW	A-RD-	77-108 HIGH	IWAY	NOISE	PREDIC	TION	NODEL (	9/12/2	021)					
Scenario: OYCP									Campus U	oper Plat	е			
Road Name: Day St						Job I	Number:	14064						
Road Segment: n/o Ale	ssand	ro Blvd.												
SITE SPECIFI	C INP	UT DATA			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
Highway Data					Site Cond	ditions	(Hard =	10, Se						
Average Daily Traffic (Ad		3,559 vehicle	es					Autos:						
Peak Hour Percentag		9.80%					rucks (2							
Peak Hour Volum		,329 vehicle	s		Hea	avy Tru	icks (3+ .	Axles):	15					
Vehicle Spee		25 mph			Vehicle N	lix								
Near/Far Lane Distand	e:	36 feet		Γ	Vehi	cleTyp	е	Day	Evening	Night	Daily			
Site Data							Autos:	71.9%	5 12.2%	15.9%	94.379			
Barrier Heigi	ht:	0.0 feet					Frucks:	75.3%		17.7%				
Barrier Type (0-Wall, 1-Berr	n):	0.0			H	leavy T	rucks:	60.4%	12.0%	27.6%	3.54			
Centerline Dist. to Barri	er:	44.0 feet		F	Noise So	urce E	levation	s (in f	eet)					
Centerline Dist. to Observ	er:	44.0 feet		F		Auto		000						
Barrier Distance to Observ		0.0 feet			Mediun	n Truc	ks: 2.	297						
Observer Height (Above Pa	·	5.0 feet			Heav	y Truck	ks: 8.	004	Grade Ad	justment.	0.0			
Pad Elevation		0.0 feet		F										
Road Elevatio		0.0 feet		2	Lane Equ				reet)					
Road Grad Left Vie		0.0%			Mediur	Auto		460 241						
Right Vie		-90.0 degree				y Truck		262						
Night vie	w.	90.0 degre	63		neav,	y 1100	(3. 40	202						
FHWA Noise Model Calcula	tions													
VehicleType REMEL		Traffic Flow	Di	istance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten			
	8.73	1.70		1.2		-1.20		-4.61		000	0.00			
	0.80	-14.85		1.3		-1.20		-4.87		000	0.00			
Heavy Trucks: 7	7.97	-12.56		1.3	1	-1.20		-5.50	0.0	000	0.00			
Unmitigated Noise Levels (	withou	ut Topo and	barri	ier atter	uation)									
VehicleType Leq Peak	Hour	Leq Day	/	Leq E	vening	Leq	Night		Ldn	CI	VEL			
Autos:	60.5		58.4		56.7		53.		60.		61			
Medium Trucks:	56.1		54.1		49.8		49.		56.		56			
Heavy Trucks:	65.5		62.6		61.6		60.	-	67.3		67.			
Vehicle Noise:	67.1		64.4		63.0		61.	5	68.4	1	68			
Centerline Distance to Nois	e Con	tour (in feet	)											
				70	dBA	65	dBA	(	60 dBA	55	dBA			
			Ldn:		34		74		159		34			
		0	NEL:		36		78		168		36			

Wednesday, September 28, 2022

FHWA	-RD-	77-108 HIGHV	VAY N	OISE			ODEL (9	/12/2	021)		
Scenario: HY				_		Project	Name: V	Vest (	Campus Up	per Plat	e
Road Name: Day St.						Job N	umber: 1	4064			
Road Segment: n/o Ale	ssand	ro Blvd.									
SITE SPECIFIC	INP	UT DATA							L INPUTS	3	
Highway Data					Site Con	ditions	Hard =	10, So	oft = 15)		
Average Daily Traffic (Ad	t): 1	5,094 vehicles	6				A	utos:	15		
Peak Hour Percentag	e:	9.80%					icks (2 A				
Peak Hour Volum	e: 1	,479 vehicles			Hea	avy Truc	:ks (3+ A	xles):	15		
Vehicle Spee	d:	25 mph		ŀ	Vehicle A	<i>lix</i>					
Near/Far Lane Distanc	e:	36 feet		ŀ		cleType	1	Day	Evening	Night	Daily
Site Data								71.9%		15.9%	
Barrier Heigh	t.	0.0 feet			Me	edium Tr	ucks:	75.3%	5 7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Bern		0.0			H	leavy Tr	ucks: 0	50.4%	12.0%	27.6%	3.73%
Centerline Dist. to Barrie	er:	44.0 feet		ŀ	Noise So	urco El	ovations	(in f	oot)		
Centerline Dist. to Observe	er:	44.0 feet		ŀ	110/30 00	Auto					
Barrier Distance to Observe	er:	0.0 feet			Modiur	n Trucks					
Observer Height (Above Pag	1):	5.0 feet				v Trucks			Grade Adj	ustment	· 0.0
Pad Elevatio	n:	0.0 feet						-		aounom	. 0.0
Road Elevatio	n:	0.0 feet		L	Lane Equ	ıivalent	Distanc	e (in	feet)		
Road Grad	e:	0.0%				Autos		60			
Left Vie	N:	-90.0 degrees	6			n Trucks		41			
Right Vie	N:	90.0 degrees	\$		Heav	y Trucks	s: 40.2	62			
FHWA Noise Model Calculat	ions										
VehicleType REMEL		Traffic Flow	Dista		Finite	Road	Fresne		Barrier Atte	en Ber	rm Atten
	.73	2.15		1.2		-1.20		4.61	0.0		0.00
	.80	-14.17		1.3		-1.20		4.87	0.0		0.00
Heavy Trucks: 77	.97	-11.87		1.3	31	-1.20	-	5.50	0.0	00	0.00
Unmitigated Noise Levels (v	vithou	ıt Topo and b	arrier	atter	nuation)						
VehicleType Leq Peak				.eq E	vening	Leq	Night		Ldn		NEL
Autos:	61.0		8.8		57.1		53.5		61.1		61.
Medium Trucks:	56.7		4.8		50.5		49.8		57.2		57.
Heavy Trucks:	66.2		3.3		62.3		61.2		67.9		68.
Vehicle Noise:	67.7	6	5.1		63.7		62.1		69.0		69.
Centerline Distance to Noise	e Con	tour (in feet)									
Centennie Distance to Nois			1	70	dBA	CE .	'BA		50 dBA	55	dBA
Centennie Distance to Nois				70	ава	05 0				00	
Centennie Distance to Nois		L	dn:	70	<i>ава</i> 38	05 (	82		176	00	379

	FHWA-RD	-77-108 HIGHWA	Y NOIS	E PREDIC	TION M	ODEL (9	/12/20	21)		
Scenario: Road Name: Road Segment:	Day St.	dro Blvd.				Name: V umber: 1		ampus Upp	oer Plate	
SITE SP	ECIFIC IN	PUT DATA			N	OISE M	ODEL	INPUTS		
Highway Data				Site Con	ditions (	(Hard = 1	10, Sof	ft = 15)		
Average Daily Tra	affic (Adt):	15,759 vehicles				A	utos:	15		
Peak Hour Pe	rcentage:	9.80%		Me	dium Tru	icks (2 A	xles):	15		
Peak Hou	r Volume:	1,544 vehicles		He	avy Truc	:ks (3+ A	xles):	15		
Vehic	le Speed:	25 mph		Vehicle I	Nix					
Near/Far Lane	Distance:	36 feet			cleType	1	Day	Evening	Night	Daily
Site Data							71.9%	12.2%	15.9%	94.33%
Barrie	er Height:	0.0 feet		Me	edium Tr	ucks: 7	75.3%	7.0%	17.7%	2.10%
Barrier Type (0-Wall		0.0		ŀ	leavy Tr	ucks: 6	60.4%	12.0%	27.6%	3.57%
Centerline Dist.	,	44.0 feet		Noise So	urco Ek	ovations	(in for	of		
Centerline Dist. to	Observer:	44.0 feet		110/30 00	Autos					
Barrier Distance to	Observer:	0.0 feet		Modiu	n Trucks	. 0.0				
Observer Height (Ab	ove Pad):	5.0 feet			y Trucks			Grade Adju	stment:	0.0
Pad	Elevation:	0.0 feet								
Road	Elevation:	0.0 feet		Lane Equ				eet)		
Ro	ad Grade:	0.0%			Autos		60			
	Left View:	-90.0 degrees		Mediur	n Trucks	s: 40.2	41			
R	ight View:	90.0 degrees		Heav	y Trucks	s: 40.2	62			
FHWA Noise Model	Calculations	3		1						
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	e/ E	Barrier Attei	n Berr	n Atten
Autos:	58.73	2.35	1.	28	-1.20	-	4.61	0.00	00	0.000
Medium Trucks:	70.80	-14.17	1.	31	-1.20	-	4.87	0.00	00	0.000
Heavy Trucks:	77.97	-11.87	1.	31	-1.20	-	5.50	0.00	00	0.000
Unmitigated Noise L	evels (witho		rier atte	nuation)						
	eq Peak Hou			Evening	Leq I			Ldn	CN	
Autos:	61.			57.3		53.7		61.3		61.8
Medium Trucks:	56.	• • •	-	50.5		49.8		57.2		57.4
Heavy Trucks:	66.			62.3		61.2		67.9		68.2
Vehicle Noise:	67.	.7 65.	1	63.7		62.1		69.1		69.4
Centerline Distance	to Noise Co	ntour (in feet)	1	1						
				) dBA	65 0		60	0 dBA	55 (	dBA
		Ldr		38		82		177		381
		CNEL	2	40		86		186		401

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Frederick St. Road Segment: n/o Cactus Av.	Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 10,147 vehicles	Autos: 15								
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 994 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 40 mph	Vehicle Mix								
Near/Far Lane Distance: 36 feet	VehicleType Day Evening Night Dai								
Site Data	Autos: 71.9% 12.2% 15.9% 94.0								
Barrier Height: 0.0 feet	Medium Trucks: 75,3% 7,0% 17,7% 2,2								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.7								
Centerline Dist. to Barrier: 44.0 feet									
Centerline Dist. to Observer: 44.0 feet	Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet	Autos: 0.000								
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297								
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 40.460								
Left View: -90.0 degrees	Medium Trucks: 40.241								
Right View: 90.0 degrees	Heavy Trucks: 40.262								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dista									
Autos: 66.51 -1.62	1.28 -1.20 -4.61 0.000 0.								
Medium Trucks: 77.72 -17.93	1.31 -1.20 -4.87 0.000 0.								
Heavy Trucks: 82.99 -15.64	1.31 -1.20 -5.50 0.000 0.								
Unmitigated Noise Levels (without Topo and barrier	ttenuation)								
VehicleType Leq Peak Hour Leq Day	eq Evening Leq Night Ldn CNEL								
Autos: 65.0 62.8	61.2 57.5 65.1 6								
Medium Trucks: 59.9 58.0	53.6 52.9 60.3 6								
Heavy Trucks: 67.5 64.6	63.6 62.4 69.2 6								
Vehicle Noise: 69.9 67.3	65.8 64.0 71.0 7								
Centerline Distance to Noise Contour (in feet)									
	70 dBA 65 dBA 60 dBA 55 dBA								
	51 111 238 5								
Ldn: CNEL:	54 116 251 5								

	FHWA-RD	-77-108 HIGH	WAY N	OISE P	REDICT		DDEL (S	9/12/20	021)		
	o: E+P e: Frederick St nt: n/o Cactus /		Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	PUT DATA				N	DISE N	IODE		s	
Highway Data				Si	te Cond	itions (	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	10,812 vehicle	s				/	Autos:	15		
Peak Hour	Percentage:	9.80%			Medi	ium Tru	cks (2 A	xles):	15		
Peak H	our Volume:	1,060 vehicles	5		Hear	vy Truci	ks (3+ A	xles):	15		
Ve	hicle Speed:	40 mph		Ve	hicle Mi	ix					
Near/Far La	ne Distance:	36 feet		-		leType		Dav	Evening	Niaht	Daily
Site Data								71.9%	•	15.9%	
	rier Height:	0.0 feet			Med	dium Tru	icks:	75.3%	7.0%	17.7%	2.069
Barrier Type (0-W	•	0.0			He	eavy Tru	icks:	60.4%	12.0%	27.6%	3.509
Centerline Dis	. ,	44.0 feet									
Centerline Dist.		44.0 feet		NO	oise Sou				et)		
Barrier Distance	to Observer:	0.0 feet			Medium	Autos		000 297			
Observer Height (	Above Pad):	5.0 feet				Trucks		004	Grade Ad	iustment	0.0
Pa	ad Elevation:	0.0 feet			Tieavy	TTUCKS	0.0	/04	Orade Au	usunent	0.0
Roa	La	ne Equi	ivalent	Distanc	e (in f	feet)					
F	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree	:S		Medium						
	Right View:	90.0 degree	:S		Heavy	Trucks	40.2	262			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dista		Finite R		Fresn	-	Barrier Att		m Atten
Autos:	66.51	-1.32		1.28		-1.20		-4.61		000	0.00
Medium Trucks:	77.72	-17.93		1.31		-1.20		-4.87		000	0.00
Heavy Trucks:	82.99	-15.64		1.31		-1.20		-5.50	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou			Leq Eve		Leq N			Ldn		VEL
Autos:	65.		63.1		61.5		57.8		65.4		65
Medium Trucks: Heavy Trucks:	59. 67.	-	58.0 64.6		53.6 63.6		52.9 62.4		60.3 69.2		60. 69.
Vehicle Noise:	70.		04.0 67.4		65.9		64.1		71.1		71.
					03.5		04.1		71.		71.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dE	A	65 d	BA	6	0 dBA	55	dBA
			Ldn:		52	50 0	112	. °	241		51

Wednesday, September 28, 2022

FHWA-R	D-77-108 HIGHWA	Y NOISE	PREDIC	TION MC	DDEL (9/1	2/2021)		
Scenario: EA				Project N	lame: We	est Campus Up	per Plate	
Road Name: Frederick	St.			Job Nu	mber: 140	064		
Road Segment: n/o Cactus	s Av.							
SITE SPECIFIC I	NPUT DATA					DEL INPUTS	6	
Highway Data			Site Cond	ditions (I		, Soft = 15)		
Average Daily Traffic (Adt):	11,656 vehicles					tos: 15		
Peak Hour Percentage:	9.80%				cks (2 Axle	,		
Peak Hour Volume:	1,142 vehicles		Hea	avy Truck	ks (3+ Axle	es): 15		
Vehicle Speed:	40 mph	-	Vehicle N	lix				
Near/Far Lane Distance:	36 feet	-	Vehi	cleType	Da	y Evening	Night Da	aily
Site Data				AL	utos: 71	.9% 12.2%	15.9% 94.	.08
Barrier Height:	0.0 feet		Me	dium Tru	icks: 75	.3% 7.0%	17.7% 2.	.20
Barrier Type (0-Wall, 1-Berm):	0.0		H	leavy Tru	icks: 60	.4% 12.0%	27.6% 3.	.73
Centerline Dist. to Barrier:	44.0 feet	H	Noise So	urce Fle	vations (i	n feet)		
Centerline Dist. to Observer:	44.0 feet	f		Autos		,		
Barrier Distance to Observer:	0.0 feet		Mediun	n Trucks:	0.000			
Observer Height (Above Pad):	5.0 feet			v Trucks:			ustment: 0.0	)
Pad Elevation:	0.0 feet							
Road Elevation:	0.0 feet	4	Lane Equ			, ,		
Road Grade:	0.0%			Autos:		-		
Left View:	-90.0 degrees			n Trucks:	10.21			
Right View:	90.0 degrees		Heav	y Trucks:	40.262	2		
FHWA Noise Model Calculation	ıs							
VehicleType REMEL	Traffic Flow	Distance	Finite		Fresnel	Barrier Atte	en Berm A	tten
Autos: 66.51	-1.01	1.2	8	-1.20	-4.	61 0.0	00 0	0.00
Medium Trucks: 77.72	-17.33	1.3	1	-1.20	-4.	87 0.0	00 0	0.00
Heavy Trucks: 82.99	-15.04	1.3	1	-1.20	-5.	50 0.0	00 0	0.00
Unmitigated Noise Levels (with	nout Topo and bar	rier atten	nuation)					
VehicleType Leq Peak Ho			vening	Leq N	•	Ldn	CNEL	
	5.6 63.4		61.8		58.1	65.7		66
	0.5 58.	-	54.2		53.5	60.9		61
	8.1 65.:		64.2		63.0	69.8		70
Vehicle Noise: 7	0.5 67.9	9	66.4		64.6	71.6		71
Centerline Distance to Noise C	ontour (in feet)	1					I	-
			dBA	65 di		60 dBA	55 dBA	
	Ldr	1.	56		121	261		56
	CNEL		59		128	275		593

F	HWA-RD	77-108 HIGH	WAY NO	DISE	PREDIC		IODEL (9	/12/20	021)				
Scenario: EA Road Name: Fr Road Segment: n/o	ederick St				Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPEC	CIFIC IN	PUT DATA							L INPUTS	;			
Highway Data				S	Site Con	ditions	(Hard =	10, So	oft = 15)				
Average Daily Traffic	c (Adt):	12,321 vehicle	s				A	Autos:	15				
Peak Hour Perce	entage:	9.80%			Me	dium Tr	ucks (2 A	xles):	15				
Peak Hour V	'olume:	1,207 vehicles			Hei	avy Tru	cks (3+ A	xles):	15				
Vehicle	Speed:	40 mph		v	/ehicle N	Nix							
Near/Far Lane Di	stance:	36 feet		-		cleType		Dav	Evening	Night	Daily		
Site Data					1011			71.9%		15.9%			
Barrier I	leiaht:	0.0 feet			Me	edium T	rucks:	75.3%	7.0%	17.7%	2.08%		
Barrier Type (0-Wall, 1-		0.0			F	leavy T	rucks:	60.4%	12.0%	27.6%	3.52%		
Centerline Dist. to	,	44.0 feet			loise So	urce F	levations	in fe	et)				
Centerline Dist. to Ob	server:	44.0 feet		Ê		Auto			.00				
Barrier Distance to Ob	server:	0.0 feet			Mediur	n Truck							
Observer Height (Abov	e Pad):	5.0 feet				y Truck	u	04	Grade Adj	ustment.	0.0		
Pad Ele	evation:	0.0 feet						-					
Road Ele	evation:	0.0 feet		L	ane Equ		t Distanc		feet)				
	Grade:	0.0%				Auto							
	ft View:	-90.0 degree				n Truck							
Righ	t View:	90.0 degree	s		Heav	y Truck	s: 40.2	262					
FHWA Noise Model Cal	culations												
		Traffic Flow	Distar		Finite		Fresn		Barrier Atte		m Atten		
Autos:	66.51	-0.76		1.28		-1.20		4.61	0.0		0.000		
Medium Trucks:	77.72	-17.33		1.31		-1.20		-4.87	0.0		0.000		
Heavy Trucks:	82.99	-15.04		1.31		-1.20		-5.50	0.0	00	0.000		
Unmitigated Noise Leve					,								
	Peak Hour			eq Ev	ening	Leq	Night		Ldn		VEL		
Autos: Medium Trucks:	65.8		53.7		62.0		58.4		66.0		66.4		
	60.5 68.1		58.6 55.2		54.2 64.2		53.5 63.0		60.9 69.8		61.2 70.1		
Heavy Trucks: Vehicle Noise:	70.6		55.2 58.0		64.2		63.0		69.8 71.7		70.1		
					6.00		04.7		/1./		72.0		
Centerline Distance to	Noise Cor	ntour (in feet)		70 d	RA	65	dBA	6	0 dBA	55	dBA		
			Ldn:	100	БА 57	00	ивя 122	6	264	55	UDA 569		
			IEL:		60		122		204		599		
		Ci			00		123		210		535		

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)								
Scenario: OYC Road Name: Frederick St. Road Segment: n/o Cactus Av.	Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 12,508 vehicles	Autos: 15								
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 1,226 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 40 mph	Vehicle Mix								
Near/Far Lane Distance: 36 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%								
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%								
Centerline Dist. to Barrier: 44.0 feet									
Centerline Dist. to Observer: 44.0 feet	Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet	Autos: 0.000								
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 40.460								
Left View: -90.0 degrees	Medium Trucks: 40.241								
Right View: 90.0 degrees	Heavy Trucks: 40.262								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dista	nce Finite Road Fresnel Barrier Atten Berm Atten								
Autos: 66.51 -0.71	1.28 -1.20 -4.61 0.000 0.000								
Medium Trucks: 77.72 -17.02	1.31 -1.20 -4.87 0.000 0.000								
Heavy Trucks: 82.99 -14.73	1.31 -1.20 -5.50 0.000 0.000								
Unmitigated Noise Levels (without Topo and barrier									
	eq Evening Leq Night Ldn CNEL								
Autos: 65.9 63.7	62.1 58.4 66.0 66.5								
Medium Trucks: 60.8 58.9	54.6 53.8 61.2 61.5								
Heavy Trucks: 68.4 65.5	64.5 63.3 70.1 70.4								
Vehicle Noise: 70.8 68.2	66.7 64.9 71.9 72.2								
Centerline Distance to Noise Contour (in feet)									
L	70 dBA 65 dBA 60 dBA 55 dBA								
Ldn:	59 127 274 590								
CNEL:	62 134 288 621								

	FHWA-RD	-77-108 HIGHWA	Y NOISE	PREDIC	TION MC	DEL (9/1:	2/2021)						
	o: OYCP e: Frederick S t: n/o Cactus /			Project Name: West Campus Upper Plate Job Number: 14064									
SITE S	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS									
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily 1	Traffic (Adt):	13,173 vehicles				Aut	os: 15						
Peak Hour I	Percentage:	9.80%		Me	dium Truc	ks (2 Axle	s): 15						
Peak Ho	our Volume:	1,291 vehicles		He	avy Truck	s (3+ Axle	s): 15						
Veh	nicle Speed:	40 mph	-	Vehicle Mix									
Near/Far Lan	ne Distance:	36 feet	ŀ		cleType	Da	v Evening	Night	Daily				
Site Data							9% 12.2%	15.9%	,				
	rier Heiaht:	0.0 feet		Me	edium Tru		3% 7.0%	17.7%					
Barrier Type (0-Wa		0.0 reet		Heavy Trucks: 60.4% 12.0% 27.6% 3.5									
Centerline Dis	. ,	44.0 feet			-								
Centerline Dist. t		44.0 feet	-	Noise So		vations (ii	,						
Barrier Distance t		0.0 feet		Autos: 0.000									
Observer Height (/		5.0 feet		Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0									
	d Elevation:	0.0 feet		Heav	y Trucks:	8.004	Grade Ad	ijustment	: 0.0				
Roa	Road Elevation: 0.0 feet					Distance (	ïn feet)						
Road Grade: 0.0%					Autos:	40.460	)						
	Left View:	-90.0 degrees		Mediur	n Trucks:	40.241							
	Right View:	90.0 degrees		Heav	y Trucks:	40.262							
FHWA Noise Mode	1		1				1						
VehicleType	REMEL		Distance	Finite		Fresnel	Barrier At		m Atten				
Autos: Medium Trucks:	66.51 77.72	-0.47 -17.02	1.2 1.3	-	-1.20 -1.20	-4.		000 000	0.00				
Heavy Trucks:	82.99	-14.73	1.3		-1.20	-4.		000	0.00				
•					=1.20	-0.1	. 0.	000	0.00				
Unmitigated Noise			1	/ I									
	Leq Peak Hou			vening	Leq N	•	Ldn		NEL				
Autos: Medium Trucks:	66. 60.		-	62.3 54.6		58.7 53.8	66. 61.		66. 61.				
Heavy Trucks:	60.			54.6 64.5		53.8 63.3	70.		70				
Vehicle Noise:	70.			66.8		65.0	70.		70				
Centerline Distance			,	00.0		05.0	12.	0	12				
Centernine Distance	e to Noise Co	mour (in reel)	70	dBA	65 dl	BA	60 dBA	55	dBA				
		Ldn		60		128	276	6	59				

Wednesday, September 28, 2022

FHWA-F	RD-77-108 HIGHWA	Y NOISI			ODEL (9/	12/2021)	_				
Scenario: HY Road Name: Frederick Road Segment: n/o Cactu			Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC I	NPUT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)								
Highway Data			Site Con	ditions (	Hard = 10	), Soft = 15)	)				
Average Daily Traffic (Adt):	14,646 vehicles				AL	itos: 15					
Peak Hour Percentage:	9.80%		Me	dium Tru	cks (2 Ax	<i>les):</i> 15					
Peak Hour Volume:	1,435 vehicles		He	avy Truc	ks (3+ Ax	<i>les):</i> 15					
Vehicle Speed:	40 mph		Vehicle I	Air							
Near/Far Lane Distance:	36 feet			cleType	D	ay Evenir	na Ni	ght Daily			
Site Data						1.9% 12.2	•	5.9% 94.08%			
Barrier Height:	0.0 feet		Me	edium Tri		5.3% 7.0		7.7% 2.20%			
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0			leavy Tru		0.4% 12.0		7.6% 3.73%			
Centerline Dist. to Barrier:	44.0 feet										
Centerline Dist. to Observer:	44.0 feet		Noise So								
Barrier Distance to Observer:	0.0 feet			Autos	. 0.00	-					
Observer Height (Above Pad):	5.0 feet			n Trucks							
Pad Elevation: 0.0 feet			Heav	y Trucks	: 8.00	4 Grade	Aajust	ment: 0.0			
Road Elevation:		Lane Equ	livalent	Distance	(in feet)						
Road Grade:	0.0%			Autos	: 40.46	i0					
Left View:	-90.0 degrees		Mediur	n Trucks	: 40.24	1					
Right View:	90.0 degrees		Heav	y Trucks	40.26	2					
FHWA Noise Model Calculatio											
VehicleType REMEL		Distance	Finite		Fresnel			Berm Atten			
Autos: 66.5			28	-1.20		.61	0.000	0.00			
Medium Trucks: 77.7			31	-1.20		.87	0.000	0.00			
Heavy Trucks: 82.9	9 -14.04	1.3	31	-1.20	-5	5.50	0.000	0.00			
Unmitigated Noise Levels (wit			,								
VehicleType Leq Peak Ho			Evening	Leq N	•	Ldn		CNEL			
	6.6 64.4		62.8		59.1	-	6.7	67.			
	1.5 59.6		55.2		54.5		31.9	62.			
	9.1 66.2	-	65.2		64.0		70.8	71.			
	1.5 68.9	1	67.4		65.6		72.6	72.			
Centerline Distance to Noise (	Contour (in feet)	=-	dBA	05	0.4	co		55 JDA			
	1.1.		66 GBA	65 d	BA 141	60 dBA	304	55 dBA 655			
	Ldn. CNFL		69		141 149		304 320	65			
	CNEL.		69		149		020	690			

	FHWA-RD	0-77-108 HIGHW	VAY NOIS	SE PREDIC	TION M	ODEL (9/	12/20	21)				
	o: HYP e: Frederick S nt: n/o Cactus			Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Con	ditions (	Hard = 1	0, Sof	ft = 15)				
Average Daily	Traffic (Adt):	15,311 vehicles				Au	utos:	15				
Peak Hour	Percentage:	9.80%		Me	dium Tru	cks (2 Ax	les):	15				
Peak H	our Volume:	1,500 vehicles		He	avy Truc	ks (3+ Ax	les):	15				
Ve	hicle Speed:	40 mph		Vehicle Mix								
Near/Far La	ne Distance:	36 feet			icleType	0	ay	Evening	Night	Daily		
Site Data				veni			ay 1.9%	12.2%	15.9%			
				Autos: 71.9% 12.2% 15.9% Medium Trucks: 75.3% 7.0% 17.7%								
	rier Height:	0.0 feet			leavy Tr		0.4%	12.0%	27.6%			
Barrier Type (0-W	. ,	0.0							21.070	0.007		
Centerline Dis Centerline Dist		44.0 feet		Noise So	ource Ele	evations	(in fee	et)		_		
		44.0 feet			Autos	0.00	00					
Barrier Distance		0.0 feet		Mediur	m Trucks	: 2.29	97					
Observer Height (	Above Pad): ad Elevation:	5.0 feet		Heav	y Trucks	: 8.00	)4	Grade Ad	justment	: 0.0		
Pad Elevation: 0.0 feet Road Elevation: 0.0 feet				Lane Equ	uivalent	Distanco	(in fe	oof)				
	Road Grade:	0.0 reet		Lune Lye	Autos							
,	Left View:	-90.0 degrees		Mediu	m Trucks							
	Right View:	90.0 degrees			ry Trucks							
FHWA Noise Mode	el Calculation:	s										
VehicleType	REMEL	Traffic Flow	Distance			Fresnei		Barrier Att	en Ber	m Atten		
Autos:	66.51	0.18		.28	-1.20		4.61		000	0.000		
Medium Trucks:	77.72	-16.34		.31	-1.20		1.87		000	0.000		
Heavy Trucks:	82.99	-14.04		.31	-1.20	-5	5.50	0.0	000	0.00		
Unmitigated Noise					(	E-det.		1 1 1				
VehicleType Autos:	Leq Peak Hou 66		4.6	Evening 63.0	Leq I	vignt 59.3		Ldn 66.9		NEL 67.4		
Autos: Medium Trucks:	61		4.0 9.6	55.2		59.3 54.5		61.9		62.3		
Heavy Trucks:	69		9.6 6.2	55.2 65.2		54.5 64.0		70.8	-	71.		
Vehicle Noise:	71		0.2 9.0	67.5		65.6		70.8		71.		
			5.0	07.5		00.0		12.0	U	13.		
Centerline Distand	e to Noise Co	ontour (in feet)	7	0 dBA	65 0	IBA	60	) dBA	55	dBA		
		L	dn:	66		142		307		661		
		CN	EL:	70		150		323		696		

Scenario: E         Project Name: West Campus Upper Plate           Road Name: Alessandro Blvd.         Job Number: 14064           Road Segment: w/o Barton St.         Job Number: 14064           Sitte SPECIFIC INPUT DATA         NOISE MODEL INPUTS           Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         42 275, vehicles
Highway Data Site Conditions (Hard = 10, Soft = 15)
Average Daily Treffic (Adt), 40.075 vehicles
Average Daily Traffic (Adt): 42,275 vehicles Autos: 15
Peak Hour Percentage: 9.80% Medium Trucks (2 Axles): 15
Peak Hour Volume: 4,143 vehicles Heavy Trucks (3+ Axles): 15
Vehicle Speed: 55 mph Vehicle Mix
Near/Far Lane Distance: 42 feet Vehicle Type Day Evening Night Daily
Site Data Autos: 71.9% 12.2% 15.9% 94.08
Barrier Height: 0.0 feet Medium Trucks: 75.3% 7.0% 17.7% 2.20
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 60.4% 12.0% 27.6% 3.73
Controlling Dist to Borriory 60.0 feet
Centerline Dist to Observer: 60.0 feet
Barrier Distance to Observer: 0.0 feet Autos: 0.000
Darrier Distance to Observer         0.0 reet         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0
Pad Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)
Road Grade: 0.0% Autos: 56.427
Left View: -90.0 degrees Medium Trucks: 56.270
Right View: 90.0 degrees Heavy Trucks: 56.285
FHWA Noise Model Calculations
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten
Autos: 71.78 3.20 -0.89 -1.20 -4.69 0.000 0.0
Medium Trucks: 82.40 -13.12 -0.87 -1.20 -4.88 0.000 0.0
Heavy Trucks: 86.40 -10.82 -0.87 -1.20 -5.34 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: 72.9 70.8 69.1 65.4 73.0 73
Medium Trucks: 67.2 65.3 61.0 60.2 67.6 67
Heavy Trucks: 73.5 70.6 69.6 68.5 75.2 75
Vehicle Noise: 76.7 74.3 72.7 70.6 77.7 76
Centerline Distance to Noise Contour (in feet)
70 dBA 65 dBA 60 dBA 55 dBA
Ldn: 196 422 910 1,96
CNEL: 207 446 961 2.06

	FHWA-RD	0-77-108 HIGI	HWAY N	OISE	PREDIC	TION N	IODEL (	9/12/2	021)				
Scenari Road Nam Road Segmer	e: Alessandro				Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	PUT DATA				1	IOISE N	IODE		s			
Highway Data				5	Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	46,599 vehic	les					Autos:	15				
Peak Hour	Percentage:	9.80%			Med	dium Tr	ucks (2 A	Axles):	15				
Peak H	our Volume:	4,567 vehicle	es		Heavy Trucks (3+ Axles): 15								
	hicle Speed:	55 mph		١	Vehicle Mix								
Near/Far Lar	ne Distance:	42 feet			Vehio	cleType		Day	Evening	Night	Daily		
Site Data							Autos:	71.9%	12.2%	15.9%	94.639		
Bar	rier Height:	0.0 feet			Me	dium T	rucks:	75.3%	7.0%	17.7%	1.999		
Barrier Type (0-W	•	0.0			н	leavy T	rucks:	60.4%	12.0%	27.6%	3.389		
Centerline Dis	st. to Barrier:	60.0 feet		,	loise So	urco E	evation	s (in fi	oof)				
Centerline Dist.	to Observer:	60.0 feet		,	10/30 00	Auto		000					
Barrier Distance	to Observer:	0.0 feet			Mediun			297					
Observer Height (J	Above Pad):	5.0 feet				y Truck		D04	Grade Ad	iustment.	0.0		
	ad Elevation:	0.0 feet 0.0 feet											
Roa		1	ane Equ				feet)						
F	Road Grade:	0.0%				Auto		427					
	Left View:	-90.0 degre			Medium Trucks: 56.270 Heavy Trucks: 56.285								
	Right View:	90.0 degre	es		neav	y TTUCK	s. 50.	200					
FHWA Noise Mode	el Calculation:	S											
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite I	Road	Fresn	iel	Barrier Att	en Ber	m Atten		
Autos:	71.78	3.65		-0.89		-1.20		-4.69		000	0.00		
Medium Trucks:	82.40	-13.12		-0.87		-1.20		-4.88		000	0.00		
Heavy Trucks:	86.40	-10.82	2	-0.87	7	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise	Levels (with	out Topo and	l barrier	r atten	uation)								
VehicleType	Leq Peak Hou	r Leq Da		Leq Ev	rening	Leq	Night		Ldn		VEL		
Autos:	73		71.2		69.5		65.9		73.5		73.		
Medium Trucks:	67		65.3		61.0		60.2		67.6		67.		
Heavy Trucks:	73		70.6		69.6		68.5		75.2		75.		
Vehicle Noise:	76	.9	74.5		72.9		70.8	3	77.9	9	78.		
Centerline Distanc	e to Noise Co	ontour (in fee	t)										
				70 a		65	dBA		60 dBA		dBA		
			Ldn:		201		433		932		2,009		
		0	NEL:		212		457		985		2,12		

Wednesday, September 28, 2022

FHWA-F	RD-77-108 HIGHW	AY NOISI	e predic	TION MC	DEL (9/12	/2021)					
Scenario: EA				Project N	lame: Wes	t Campus Up	per Plate				
Road Name: Alessand				Job Nu	mber: 1406	64					
Road Segment: w/o Barto	n St.										
SITE SPECIFIC	NPUT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)								
Highway Data			Site Cond	ditions (H		· · · ·					
Average Daily Traffic (Adt):	48,561 vehicles				Auto						
Peak Hour Percentage:	9.80%				sks (2 Axles	/					
Peak Hour Volume:	4,759 vehicles		Hea	avy Truck	s (3+ Axles	s): 15					
Vehicle Speed:	55 mph		Vehicle N	lix							
Near/Far Lane Distance:	42 feet			cleType	Day	Evening	Night Daily				
Site Data				AL	itos: 71.9	9% 12.2%	15.9% 94.08%				
Barrier Height:	0.0 feet		Me	edium Tru	cks: 75.3	3% 7.0%	17.7% 2.20%				
Barrier Type (0-Wall, 1-Berm):	0.0		H	leavy Tru	cks: 60.4	% 12.0%	27.6% 3.73%				
Centerline Dist. to Barrier:	60.0 feet		Noise So	urce Ele	vations (in	feet)					
Centerline Dist. to Observer:	60.0 feet			Autos:							
Barrier Distance to Observer:	0.0 feet		Mediun	n Trucks:							
Observer Height (Above Pad):	5.0 feet			v Trucks:		Grade Adiu	ustment: 0.0				
Pad Elevation:											
Road Elevation:	0.0 feet		Lane Equ		Distance (i	n feet)					
Road Grade:	0.0%			Autos:							
Left View:	-90.0 degrees			n Trucks:	00.210						
Right View:	90.0 degrees		Heav	y Trucks:	56.285						
FHWA Noise Model Calculatio	ns										
VehicleType REMEL		Distance	Finite	Road	Fresnel	Barrier Atte	n Berm Atten				
Autos: 71.7		-0.		-1.20	-4.6						
Medium Trucks: 82.4		-0.		-1.20	-4.8						
Heavy Trucks: 86.4	0 -10.22	-0.	87	-1.20	-5.3	4 0.0	0.00				
Unmitigated Noise Levels (wit	hout Topo and ba	rrier atte	nuation)								
VehicleType Leq Peak H			Evening	Leq N	•	Ldn	CNEL				
	3.5 71		69.7		66.0	73.6	74.				
	7.8 65		61.6		60.8	68.2					
	4.1 71		70.2		69.1	75.8					
Vehicle Noise:	7.3 74	.9	73.3		71.2	78.3	78.				
Centerline Distance to Noise	Contour (in feet)										
		70	dBA	65 dl	BA	60 dBA	55 dBA				
			UDA	00 01							
	Ld		215	00 01	463	998	2,150				

	FHWA-RD	-77-108 HIGHWA	Y NOISE	PREDIC	TION N	IODEL (S	9/12/20	)21)				
	io: EAP e: Alessandro nt: w/o Barton :			Project Name: West Campus Upper Plate Job Number: 14064								
	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS								
Highway Data			5	Site Con	ditions	(Hard =	10, So	ft = 15)				
	Percentage:	52,885 vehicles 9.80%		Autos: 15 Medium Trucks (2 Axles): 15 Honey Trucks (2) Axles): 15								
	our Volume:	5,183 vehicles		Heavy Trucks (3+ Axles): 15								
	hicle Speed:	55 mph	١	Vehicle Mix								
Near/Far La	ne Distance:	42 feet		Vehi	cleType		Day	Evening	Night	Daily		
Site Data						Autos:	71.9%	12.2%	15.9%	94.56%		
Bai	rier Heiaht:	0.0 feet		Me	edium T	rucks:	75.3%	7.0%	17.7%	2.02%		
Barrier Type (0-W		0.0		F	leavy T	rucks:	60.4%	12.0%	27.6%	3.42%		
Centerline Dis	. ,	60.0 feet	-				. <i>(i.e. f.</i> -	- 41				
Centerline Dist.	to Observer:	60.0 feet	<i>'</i>	voise So		levations		et)				
Barrier Distance	to Observer:	0.0 feet		Autos: 0.000 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					's: 8.0	004	Grade Adj	usimeni	0.0		
Roa	L	ane Equ	iivalen	t Distanc	e (in f	ieet)						
F	Road Grade:	0.0%			Auto	s: 56.4	127					
	Left View:	-90.0 degrees		Mediur	n Truck	s: 56.2	270					
	Right View:	90.0 degrees		Heav	y Truck	s: 56.2	285					
FHWA Noise Mode	el Calculations	5										
VehicleType	REMEL		listance	Finite	Road	Fresn	-	Barrier Atte	en Ber	m Atten		
Autos:	71.78	4.19	-0.89	-	-1.20		-4.69	0.0		0.000		
Medium Trucks:	82.40	-12.52	-0.87		-1.20		-4.88	0.0		0.000		
Heavy Trucks:	86.40	-10.22	-0.87	7	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise												
	Leq Peak Hou		Leg Ev	•	Leq	Night		Ldn		NEL		
Autos:	73			70.1		66.4		74.0		74.		
Medium Trucks:	67			61.6		60.8		68.2		68.		
Heavy Trucks:	74			70.2		69.1		75.8		76.1		
Vehicle Noise:	77	.5 75.1		73.4		71.4		78.5	5	78.		
Centerline Distanc	e to Noise Co	ntour (in feet)			-							
			70 a		65	dBA	6	0 dBA		dBA		
		Ldn		220		473		1,019		2,196		
		CNEL		232		500		1,077		2,319		

F	HWA-RD	-77-108 HIGH	WAY I	NOISE	PREDIC		ODEL (9	/12/20	)21)				
Scenario: OY Road Name: Ale Road Segment: w/o	essandro				Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPEC	IFIC IN	PUT DATA			NOISE MODEL INPUTS								
Highway Data					Site Con	ditions	(Hard =	10, So	ft = 15)				
Average Daily Traffic	(Adt):	49,805 vehicle	s				A	utos:	15				
Peak Hour Perce	entage:	9.80%			Me	dium Tru	icks (2 A	xles):	15				
Peak Hour V	olume:	4,881 vehicles	6		He	avy Truc	:ks (3+ A	xles):	15				
Vehicle	Speed:	55 mph		5	Vehicle I	Mix							
Near/Far Lane Dis	stance:	42 feet				icleType	1	Dav	Evening	Night	Dailv		
Site Data								71.9%	•	15.9%			
Barrier H	leiaht <sup>.</sup>	0.0 feet			Me	edium Tr	ucks:	75.3%	7.0%	17.7%	2.20%		
Barrier Type (0-Wall, 1-	•	0.0			ŀ	Heavy Tr	ucks:	50.4%	12.0%	27.6%	3.73%		
Centerline Dist. to E		60.0 feet		H	N 0-			6 K.	- 41				
Centerline Dist. to Ob	server:	60.0 feet		Ľ	Noise So				et)				
Barrier Distance to Ob	server:	0.0 feet			Madiu	Auto: m Truck:							
Observer Height (Above	e Pad):	5.0 feet				y Trucks			Grade Adji	ustment	.00		
Pad Ele	Pad Elevation: 0.0 feet							-		usunent	0.0		
Road Elevation: 0.0 feet					Lane Equ	uivalent	Distanc	e (in f	eet)				
Road	Grade:	0.0%				Autos							
	t View:	-90.0 degree	s			m Trucks							
Righ	t View:	90.0 degree	es		Heav	ry Trucks	s: 56.2	85					
FHWA Noise Model Cal	culations												
VehicleType RE	MEL	Traffic Flow	Dist	ance	Finite	Road	Fresne		Barrier Atte	en Ber	m Atten		
Autos:	71.78	3.91		-0.8		-1.20		4.69	0.0		0.000		
Medium Trucks:	82.40	-12.41		-0.8		-1.20		4.88	0.0		0.000		
Heavy Trucks:	86.40	-10.11		-0.8	7	-1.20		5.34	0.0	00	0.000		
Unmitigated Noise Leve			barriei	r atten	uation)								
	Peak Houi			Leq E	vening	Leq	Night		Ldn		VEL		
Autos:	73.	-	71.5		69.8		66.2		73.7		74.2		
Medium Trucks:	67.	-	66.0		61.7		60.9		68.3		68.6		
Heavy Trucks:	74.		71.3		70.3		69.2		75.9		76.2		
Vehicle Noise:	77.	4	75.0		73.4		71.3		78.4		78.8		
Centerline Distance to I	Voise Co	ntour (in feet)											
			L	70 (	dBA	65 (	dBA	6	0 dBA	55	dBA		
			Ldn:		219		471		1,015		2,187		
		CI	VEL:		231		497		1,071		2,308		

FHWA-RD-77-108 HIGHWAY	' NOISI	E PREDIC	TION	IODEL (	9/12/2	021)				
Scenario: OYCP Road Name: Alessandro Blvd. Road Segment: w/o Barton St.		Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS								
Highway Data		Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 54,129 vehicles					Autos:	15				
Peak Hour Percentage: 9.80%		Mee	dium Tr	ucks (2 A	Axles):	15				
Peak Hour Volume: 5,305 vehicles		Hei	avy Tru	cks (3+ A	Axles):	15				
Vehicle Speed: 55 mph		Vehicle Mix								
Near/Far Lane Distance: 42 feet		Vehi	cleType	•	Day	Evening	Night	Daily		
Site Data				Autos:	71.9%	12.2%	15.9%	94.55%		
Barrier Height: 0.0 feet		Me	edium T	rucks:	75.3%	7.0%	17.7%	2.02%		
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy T	rucks:	60.4%	12.0%	27.6%	3.43%		
Centerline Dist. to Barrier: 60.0 feet		Noise So	urco F	lovation	s (in fi	oof)				
Centerline Dist. to Observer: 60.0 feet		110/30 00	Auto		000					
Barrier Distance to Observer: 0.0 feet		Mediur	n Truck		297					
Observer Height (Above Pad): 5.0 feet			y Truck		004	Grade Ad	ustment.	0.0		
Pad Elevation: 0.0 feet										
Road Elevation: 0.0 feet		Lane Equ				leet)				
Road Grade: 0.0%			Auto n Truck		427 270					
Left View: -90.0 degrees Right View: 90.0 degrees			y Truck		285					
right view. 50.0 degrees		riour	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0. 00.	200					
FHWA Noise Model Calculations										
	stance	Finite		Fresh	-	Barrier Att		m Atten		
Autos: 71.78 4.29	-0.		-1.20		-4.69		000	0.00		
Medium Trucks: 82.40 -12.41	-0.		-1.20		-4.88		000	0.00		
Heavy Trucks: 86.40 -10.11	-0.	87	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise Levels (without Topo and barri	ier atte	nuation)								
VehicleType Leq Peak Hour Leq Day	Leq I	Evening	Leq	Night		Ldn		VEL		
Autos: 74.0 71.8		70.2		66.5		74.1		74.		
Medium Trucks: 67.9 66.0		61.7		60.9		68.3		68.		
Heavy Trucks: 74.2 71.3		70.3		69.2		75.9		76.		
Vehicle Noise: 77.6 75.2		73.5		71.5	)	78.6	5	78.		
Centerline Distance to Noise Contour (in feet)										
	70	dBA	65	dBA	6	60 dBA		dBA		
Ldn:		223		481		1,036		2,233		
CNEL:		236		508		1,094		2,357		

Wednesday, September 28, 2022

FHWA-F	D-77-108 HIGHWA	Y NOISE	PREDIC	TION M	ODEL (9/'	12/2021)					
Scenario: HY Road Name: Alessandr					Name: W Imber: 14	est Campus Up 064	oper Plate				
Road Segment: w/o Barton	n St.										
SITE SPECIFIC I	NPUT DATA		NOISE MODEL INPUTS								
Highway Data			Site Con	ditions (	Hard = 10	), Soft = 15)					
Average Daily Traffic (Adt):	58,590 vehicles				AL	<i>itos:</i> 15					
Peak Hour Percentage:	9.80%		Med	dium Tru	cks (2 Ax	<i>les):</i> 15					
Peak Hour Volume:	5,742 vehicles		Hea	avy Truc	ks (3+ Ax	<i>les):</i> 15					
Vehicle Speed:	55 mph	H	Vehicle N	lix							
Near/Far Lane Distance:	42 feet	H		cleType	D	ay Evening	Night	Daily			
Site Data						1.9% 12.2%	15.9%	94.08%			
Barrier Height:	0.0 feet		Me	dium Tr	ucks: 75	5.3% 7.0%	17.7%	2.20%			
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Tr	ucks: 60	0.4% 12.0%	27.6%	3.73%			
Centerline Dist. to Barrier:	60.0 feet	H	Noise So	uree El	vetione	(in fact)					
Centerline Dist. to Observer:	60.0 feet	H	Noise 30	Autos	,	,					
Barrier Distance to Observer:	0.0 feet		Madium		. 0.00						
Observer Height (Above Pad):	5.0 feet		Medium Trucks: 2.297 Heavy Trucks: 8,004 Grade Adjustment: 0								
Pad Elevation:		neav	y mucks	. 0.00	4 07000 Auj	usunent.	0.0				
Road Elevation:	0.0 feet		Lane Equ	ıivalent	Distance	(in feet)					
Road Grade:	0.0%			Autos	: 56.42	7					
Left View:	-90.0 degrees			n Trucks		0					
Right View:	90.0 degrees		Heav	y Trucks	56.28	5					
FHWA Noise Model Calculatio	ns										
VehicleType REMEL		Distance	Finite	Road	Fresnel		en Berr	n Atten			
Autos: 71.7		-0.8		-1.20			000	0.00			
Medium Trucks: 82.4		-0.8		-1.20			000	0.00			
Heavy Trucks: 86.4	0 -9.41	-0.8	37	-1.20	-5	0.34 0.0	000	0.00			
Unmitigated Noise Levels (with	hout Topo and bar	rier atter	nuation)								
VehicleType Leq Peak Ho			vening	Leq I		Ldn		IEL			
	4.3 72.3	-	70.5		66.9	74.4		74.			
	8.6 66.		62.4		61.6	69.0	-	69.3			
	4.9 72.0		71.0		69.9	76.6		76.			
Vehicle Noise: 7	8.1 75.3	7	74.1		72.1	79.1	1	79.			
Centerline Distance to Noise C	Contour (in feet)										
		70	dBA	65 c	IBA	60 dBA	55 0	dBA			
			244	-	525	1.131		2.437			
	Ldn	1:	244		525	1,101		2, 107			

	FHWA-RD	-77-108 HIGHWA	Y NOISE			ODEL (9	/12/20	121)				
	o: HYP e: Alessandro nt: w/o Barton s			Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Con	ditions (	Hard = 1	10, So	ft = 15)				
Average Daily	Traffic (Adt):	62,914 vehicles				A	lutos:	15				
Peak Hour	Percentage:	9.80%		Me	dium Tru	cks (2 A	xles):	15				
Peak H	our Volume:	6,166 vehicles		He	avy Truc	ks (3+ A	xles):	15				
Ve	hicle Speed:	55 mph	-	Vehicle I	<i>liv</i>							
Near/Far La	ne Distance:	42 feet	H		cleType		Day	Evening	Night	Daily		
Site Data				Veni			71.9%	12.2%	15.9%			
				1.44	edium Tri		75.3%	7.0%	17.7%	2.05%		
	rier Height:	0.0 feet			leavy Tri		50.4%		27.6%	3.47%		
Barrier Type (0-W	. ,	0.0			icavy m	20103.	50.470	12.070	27.070	0.4770		
Centerline Dis Centerline Dist.		60.0 feet 60.0 feet		Noise So	urce Ele	vations	(in fe	et)				
Barrier Distance		0.0 feet			Autos	: 0.0	00					
Observer Height (				Mediur	n Trucks	: 2.2	97					
	ad Elevation:	5.0 feet 0.0 feet		Heav	y Trucks	: 8.0	04	Grade Adj	ustment:	0.0		
	Road Elevation: 0.0 feet					Distanc	o (in f	oof)				
	Road Grade:	0.0%	-	Lano Lqu	Autos			000				
1	Left View:	-90.0 degrees		Mediu	n Trucks							
	Right View:	90.0 degrees			y Trucks							
FHWA Noise Mode	el Calculations	;										
VehicleType	REMEL	Traffic Flow D	istance	Finite	Road	Fresne	e/ I	Barrier Atte	en Ber	m Atten		
Autos:	71.78	4.94	-0.8	19	-1.20	-	4.69	0.0	00	0.000		
Medium Trucks:	82.40	-11.70	-0.8		-1.20		4.88	0.0		0.000		
Heavy Trucks:	86.40	-9.41	-0.8		-1.20	-	5.34	0.0	00	0.000		
Unmitigated Noise						1						
	Leq Peak Hou		,	vening	Leq I			Ldn		VEL		
Autos:	74. 68			70.8 62.4		67.2		74.8		75.2		
Medium Trucks:	68. 74.			62.4 71.0		61.6 69.9		69.0 76.6		69.3 76.9		
Heavy Trucks: Vehicle Noise:	74.			71.0		72.2		76.6		76.9		
				74.2		12.2		79.2		79.6		
Centerline Distance	e to Noise Co	ntour (in feet)	70	dBA	65 a	IBA	6	0 dBA	55	dBA		
		Ldn:		248	25 0	534		1.151	50	2.480		
		CNEL:		262		564		1,216		2,619		
								,		,		

FHWA-RD-77-108 HIGHWAY NC	ISE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Alessandro Blvd. Road Segment: e/o Barton St.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 42,360 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 4,151 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 55 mph	Vehicle Mix
Near/Far Lane Distance: 42 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Centerline Dist. to Barrier: 60.0 feet	Naine Davies Flourdiane (in fact)
Centerline Dist. to Observer: 60.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Autos: 0.000 Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 56.427
Left View: -90.0 degrees	Medium Trucks: 56.270
Right View: 90.0 degrees	Heavy Trucks: 56.285
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distan	
	-0.89 -1.20 -4.69 0.000 0.000
	-0.87 -1.20 -4.88 0.000 0.000
Heavy Trucks: 86.40 -10.81	-0.87 -1.20 -5.34 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier a	ttenuation)
VehicleType Leq Peak Hour Leq Day Le	q Evening Leq Night Ldn CNEL
Autos: 72.9 70.8	69.1 65.5 73.0 73.5
Medium Trucks: 67.2 65.3	61.0 60.2 67.6 67.9
Heavy Trucks: 73.5 70.6	69.6 68.5 75.2 75.5
Vehicle Noise: 76.7 74.3	72.7 70.6 77.7 78.1
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	196 423 911 1,963
CNEL:	207 446 962 2,072

FHWA-RD-77-108 HIGHWA	Y NOIS	E PREDIC	TION MO	ODEL (S	/12/20	21)		
Scenario: E+P Road Name: Alessandro Blvd. Road Segment: e/o Barton St.				Name: \ umber: 1		ampus Up	oper Plate	е
SITE SPECIFIC INPUT DATA			N	OISE N	ODE		s	
Highway Data		Site Cond	ditions (	'Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 46,351 vehicles					Autos:	15		
Peak Hour Percentage: 9.80%		Med	dium Tru	cks (2 A	xles):	15		
Peak Hour Volume: 4,542 vehicles		Hea	avy Truc	ks (3+ A	xles):	15		
Vehicle Speed: 55 mph		Vehicle N	lix					
Near/Far Lane Distance: 42 feet		Vehi	cleType		Day	Evening	Night	Daily
Site Data			A	utos:	71.9%	12.2%	15.9%	94.59%
Barrier Height: 0.0 feet		Me	dium Tri	ucks:	75.3%	7.0%	17.7%	2.01%
Barrier Type (0-Wall, 1-Berm): 0.0		H	leavy Tri	ucks:	60.4%	12.0%	27.6%	3.419
Centerline Dist. to Barrier: 60.0 feet		Noise So	urco Ele	vations	(in fo	of)		
Centerline Dist. to Observer: 60.0 feet		10130 00	Autos		000	01/		
Barrier Distance to Observer: 0.0 feet		Mediur	n Trucks		297			
Observer Height (Above Pad): 5.0 feet			y Trucks		04	Grade Ad	iustment:	0.0
Pad Elevation: 0.0 feet					- -			
Road Elevation: 0.0 feet		Lane Equ				eet)		
Road Grade: 0.0%			Autos					
Left View: -90.0 degrees			n Trucks v Trucks					
Right View: 90.0 degrees		neav	y mucks	. 30.4	00			
FHWA Noise Model Calculations								
	Distance	Finite	Road	Fresn	e/ I	Barrier Atte	en Ber	m Atten
Autos: 71.78 3.62		.89	-1.20		-4.69		000	0.00
Medium Trucks: 82.40 -13.11		.87	-1.20		-4.88		000	0.00
Heavy Trucks: 86.40 -10.81	-0	.87	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels (without Topo and bar	rier atte	enuation)						
VehicleType Leq Peak Hour Leq Day		Evening	Leq N	Vight		Ldn		VEL
Autos: 73.3 71.2		69.5		65.9		73.5		73.
Medium Trucks: 67.2 65.3	-	61.0		60.2		67.6		67.
Heavy Trucks: 73.5 70.6		69.6		68.5		75.2		75.
Vehicle Noise: 76.9 74.5	0	72.9		70.8		77.9	9	78.
Centerline Distance to Noise Contour (in feet)								
		0 dBA	65 a		6	0 dBA		dBA
Ldn		201		433		932		2,008
CNEL	2	212		457		984		2,120

Wednesday, September 28, 2022

FHWA	RD-77-108 HI	GHWAY N	IOISE I	PREDIC		ODEL (9	/12/2	021)			
Scenario: EA Road Name: Alessan				Project Name: West Campus Upper Plate Job Number: 14064							
Road Segment: e/o Barte	on St.										
SITE SPECIFIC	INPUT DAT	A						L INPUTS	;		
Highway Data			S	ite Cond	ditions (	Hard = 1	10, Sc	oft = 15)			
Average Daily Traffic (Adt)	: 48,659 veh	nicles				A	Autos:	15			
Peak Hour Percentage	: 9.80%			Med	dium Tru	icks (2 A	xles):	15			
Peak Hour Volume	: 4,769 vehi	cles		Hea	avy Truc	ks (3+ A	xles):	15			
Vehicle Speed	55 mph		v	ehicle N	lix						
Near/Far Lane Distance	: 4 <u>2</u> feet		-		cleType	1	Day	Evening	Night	Daily	
Site Data							71.9%	•	15.9%	94.089	
Barrier Heigh	: 0.0 fee	•		Me	dium Tr	ucks:	75.3%	7.0%	17.7%	2.209	
Barrier Type (0-Wall, 1-Berm		L.		h	leavy Tr	ucks: 6	60.4%	12.0%	27.6%	3.739	
Centerline Dist. to Barrie		t	-								
Centerline Dist. to Observe		t	N	loise So				eet)			
Barrier Distance to Observe	: 0.0 fee	t			Autos	. 0.0					
Observer Height (Above Pad	: 5.0 fee	t			n Trucks			Our de Adi			
Pad Elevation		t		Heav	y Trucks	: 8.0	104	Grade Adjı	istment:	0.0	
Road Elevation	: 0.0 fee	t	L	ane Equ	iivalent	Distanc	e (in i	feet)			
Road Grade	0.0%				Autos	: 56.4	27				
Left View	-90.0 deg	rees		Mediun	n Trucks	56.2	270				
Right View	: 90.0 deg	grees		Heav	y Trucks	56.2	85				
FHWA Noise Model Calculati											
VehicleType REMEL	Traffic Flo		ance	Finite		Fresne		Barrier Atte		m Atten	
Autos: 71.		.81	-0.89		-1.20		4.69	0.0		0.00	
Medium Trucks: 82.			-0.87		-1.20		4.88	0.0		0.00	
Heavy Trucks: 86.	40 -10.	.21	-0.87		-1.20	-	5.34	0.0	00	0.00	
Unmitigated Noise Levels (w											
VehicleType Leq Peak I			Leq Ev	•	Leq I	•		Ldn	CI	VEL	
Autos:	73.5	71.4		69.7		66.1		73.6		74.	
Medium Trucks:	67.8	65.9		61.6		60.8		68.2		68.	
Heavy Trucks:	74.1	71.2		70.2		69.1		75.8		76.	
Vehicle Noise:	77.3	74.9		73.3		71.2		78.3		78.	
Centerline Distance to Noise	Contour (in fe	eet)					_				
		L	70 d		65 c		6	60 dBA	55	dBA	
		Ldn:		215		464		999		2.153	
		CNEL:		213		490		1.055		2.273	

	FHWA-RD	0-77-108 HIGHV	VAY NOI	SE PRED		NODEL (S	9/12/20	)21)		
Scenario Road Name Road Segmen	e: Alessandro					t Name: \ Number: `		Campus Up	oper Plat	e
SITE S	PECIFIC IN	PUT DATA							S	
Highway Data				Site Co	onditions	(Hard =	10, So	ft = 15)		
Average Daily 7	Traffic (Adt):	52,650 vehicles	;			,	Autos:	15		
Peak Hour F	Percentage:	9.80%		٨	ledium Ti	rucks (2 A	xles):	15		
Peak Ho	our Volume:	5,160 vehicles		F	leavy Tru	icks (3+ A	xles):	15		
Veh	icle Speed:	55 mph		Vehicl	Mix					
Near/Far Lan	e Distance:	42 feet			hicleType	•	Day	Evening	Night	Daily
Site Data							71.9%	12.2%	15.9%	
				-	Medium 1		75.3%	7.0%	17.7%	
	rier Height:	0.0 feet			Heavy 7		60.4%		27.6%	
Barrier Type (0-Wa	. ,	0.0 60.0 feet							27.070	0.4470
Centerline Dis Centerline Dist. ti		60.0 feet		Noise	Source E	levations	s (in fe	et)		
Barrier Distance to		0.0 feet			Auto	os: 0.0	000			
Observer Height (A		5.0 feet		Med	ium Truck	(s: 2.2	297			
	d Elevation:	0.0 feet		He	avy Truck	(s: 8.0	004	Grade Ad	iustment	: 0.0
	d Elevation:	0.0 feet		Lane F	quivalen	t Distand	e (in f	eet)		
	oad Grade:	0.0%		Lano	Auto			000		
	Left View:	-90.0 degrees		Med	ium Truck					
	Right View:	90.0 degrees			avy Truck					
FHWA Noise Mode	I Calculations	S								
VehicleType	REMEL	Traffic Flow	Distanc	e Fini	te Road	Fresn	el i	Barrier Att	en Ber	m Atten
Autos:	71.78	4.17	-	0.89	-1.20		-4.69	0.0	000	0.000
Medium Trucks:	82.40	-12.51	-1	0.87	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	86.40	-10.21	-	0.87	-1.20		-5.34	0.0	000	0.000
Unmitigated Noise					,					
	Leq Peak Hou	1 1		q Evening		Night		Ldn		NEL
Autos:	73		1.7	70		66.4		74.0	-	74.5
Medium Trucks:	67		5.9	61		60.8		68.2		68.5
Heavy Trucks:	74		1.2	70		69.1		75.8		76.1
Vehicle Noise:	77		5.0	73	.4	71.4		78.5	ō	78.8
Centerline Distance	e to Noise Co	ontour (in feet)								
				70 dBA		dBA	6	0 dBA		dBA
			dn:	22		473		1,019		2,196
		CN	EL:	23	2	500		1,076		2,319

FHWA-RD-77-108 HIGH	WAY NOI	SE PREDICTIO	N MODEL (9/12	/2021)	
Scenario: OYC Road Name: Alessandro Blvd. Road Segment: e/o Barton St.			ject Name: Wes bb Number: 1406		er Plate
SITE SPECIFIC INPUT DATA				DEL INPUTS	
Highway Data		Site Conditio	ons (Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt): 50,399 vehicl	s		Auto	os: 15	
Peak Hour Percentage: 9.80%		Mediun	n Trucks (2 Axle	s): 15	
Peak Hour Volume: 4,939 vehicle		Heavy	Trucks (3+ Axle	s): 15	
Vehicle Speed: 55 mph		Vehicle Mix			
Near/Far Lane Distance: 42 feet		Vehicle7	Tvpe Dav	Evening N	light Daily
Site Data			Autos: 71.9	•	5.9% 94.08%
Barrier Height: 0.0 feet		Mediui	m Trucks: 75.	3% 7.0% <sup>-</sup>	7.7% 2.20%
Barrier Type (0-Wall, 1-Berm): 0.0		Heav	y Trucks: 60.4	4% 12.0% 2	27.6% 3.73%
Centerline Dist. to Barrier: 60.0 feet		Noine Cours	e Elevations (in	faati	
Centerline Dist. to Observer: 60.0 feet			utos: 0.000	(Teel)	
Barrier Distance to Observer: 0.0 feet		Medium Tr			
Observer Height (Above Pad): 5.0 feet		Heavy Tr		Grade Adjus	tment: 0.0
Pad Elevation: 0.0 feet		neavy n	UCKS. 0.004	Grade Adjus	unent. 0.0
Road Elevation: 0.0 feet		Lane Equiva	lent Distance (i	n feet)	
Road Grade: 0.0%		A	lutos: 56.427		
Left View: -90.0 degre	s	Medium Tr			
Right View: 90.0 degre	s	Heavy Tr	ucks: 56.285		
FHWA Noise Model Calculations					
VehicleType REMEL Traffic Flow	Distanc	e Finite Roa	d Fresnel	Barrier Atten	Berm Atten
Autos: 71.78 3.96	-1	0.89 -1.	.20 -4.6	9 0.000	0.000
Medium Trucks: 82.40 -12.35	-1	0.87 -1	.20 -4.8	8 0.000	0.000
Heavy Trucks: 86.40 -10.06	-1	0.87 -1.	.20 -5.3	0.000	0.000
Unmitigated Noise Levels (without Topo and		tenuation)			
VehicleType Leq Peak Hour Leq Day			Leq Night	Ldn	CNEL
Autos: 73.7	71.5	69.8	66.2	73.8	74.2
Medium Trucks: 68.0	6.0	61.7	61.0	68.4	68.6
Heavy Trucks: 74.3	71.4	70.4	69.2	76.0	76.3
Vehicle Noise: 77.5	75.0	73.4	71.4	78.5	78.8
Centerline Distance to Noise Contour (in feet	1			1	
		70 dBA	65 dBA	60 dBA	55 dBA
	Ldn: IEL:	220	475 501	1,023	2,204
		233		1.080	2.327

FHWA	-RD-77	7-108 HIGH	WAY	' NOISE	PREDIC	TION	NODEL (	9/12/2	021)				
Scenario: OYCP Road Name: Alessan Road Segment: e/o Barte		/d.					t Name: lumber:		Campus Uj	oper Plat	e		
SITE SPECIFIC	INPU	JT DATA			NOISE MODEL INPUTS								
Highway Data					Site Cond	ditions	(Hard =	10, Se	oft = 15)				
Average Daily Traffic (Adt,	: 54	,390 vehicle	es					Autos:	15				
Peak Hour Percentage	: 9	.80%			Med	dium T	rucks (2	Axles):	15				
Peak Hour Volume	5,3	330 vehicle:	5		Hea	avy Tru	icks (3+ .	Axles):	15				
Vehicle Speed		55 mph		ŀ	Vehicle N	lix							
Near/Far Lane Distance	e -	42 feet		ŀ	Vehi	cleTyp	e	Day	Evening	Night	Daily		
Site Data							Autos:	71.9%	5 12.2%	15.9%	94.519		
Barrier Heigh	:	0.0 feet			Me	dium 1	rucks:	75.3%	5 7.0%	17.7%	2.049		
Barrier Type (0-Wall, 1-Berm		0.0			H	leavy T	rucks:	60.4%	5 12.0%	27.6%	3.45%		
Centerline Dist. to Barrie	e (	60.0 feet		ŀ	Noise So	urce F	levation	s (in f	eef)				
Centerline Dist. to Observe	e (	60.0 feet		ŀ	110/30 00	Auto		000					
Barrier Distance to Observe		0.0 feet			Mediun			297					
Observer Height (Above Pad		5.0 feet				y Truck		004	Grade Ad	justment	: 0.0		
Pad Elevation		0.0 feet		-									
Road Elevation		0.0 feet		-	Lane Equ				feet)				
Road Grade		.0%			Mediur	Auto		427					
Left View		90.0 degree				n Truci y Truci		270 285					
Right View	·. :	90.0 degree	25		neav,	y muci		205					
FHWA Noise Model Calculati	ons												
VehicleType REMEL	Tr	affic Flow	Di	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten		
Autos: 71.		4.31		-0.8		-1.20		-4.69		000	0.00		
Medium Trucks: 82.		-12.35		-0.8		-1.20		-4.88		000	0.00		
Heavy Trucks: 86.	40	-10.06		-0.8	17	-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise Levels (w	ithout	Topo and	barri	ier atter	nuation)								
VehicleType Leq Peak I		Leq Day		Leq E	vening	Leg	Night		Ldn		NEL		
Autos:	74.0		71.9		70.2		66.		74.		74.		
Medium Trucks:	68.0		66.0		61.7		61.		68.4		68.		
Heavy Trucks:	74.3		71.4		70.4		69.		76.		76.		
Vehicle Noise:	77.6		75.2		73.6		71.	5	78.	ö	79.		
Centerline Distance to Noise	Conto	our (in feet,	)										
				70	dBA	65	dBA		50 dBA		dBA		
			Ldn:		225		484		1,043		2,246		
		C/	VEL:		237		511		1.101		2.372		

Wednesday, September 28, 2022

FHWA-	RD-77-108 HIGH	IWAY NO	ISE PREDI		DDEL (9/12	/2021)					
Scenario: HY Road Name: Alessand Road Segment: e/o Barto					<i>lame:</i> Wes mber: 1406	t Campus Up 34	per Plate				
SITE SPECIFIC	INPUT DATA		NOISE MODEL INPUTS								
Highway Data			Site Co	nditions (l	Hard = 10,	Soft = 15)					
Average Daily Traffic (Adt)	59,226 vehicle	es			Auto	s: 15					
Peak Hour Percentage	9.80%		M	edium Truc	cks (2 Axles	s): 15					
Peak Hour Volume	5,804 vehicle	s	H	eavy Truck	s (3+ Axles	s): 15					
Vehicle Speed	55 mph		Vehicle	Mix							
Near/Far Lane Distance	42 feet			nicleType	Day	Evening	Night Daily				
Site Data					utos: 71.9	•	15.9% 94.089				
Barrier Height	0.0 feet		٨	ledium Tru	icks: 75.3	3% 7.0%	17.7% 2.209				
Barrier Type (0-Wall, 1-Berm)				Heavy Tru	icks: 60.4	12.0%	27.6% 3.73				
Centerline Dist. to Barrier			Noine C	ouroo Elo	vations (in	faat					
Centerline Dist. to Observer	: 60.0 feet		NOISe 3	Autos		leel)					
Barrier Distance to Observer	0.0 feet		14-16	m Trucks:	0.000						
Observer Height (Above Pad)	5.0 feet			vv Trucks.		Grade Adi	ustment: 0.0				
Pad Elevation	0.0 feet		пеа	vy mucks.	0.004	Orade Auja	usanena. 0.0				
Road Elevation	0.0 feet		Lane Ec	uivalent l	Distance (i	n feet)					
Road Grade	0.0%			Autos:	56.427						
Left View	-90.0 degre	es		im Trucks:	00.210						
Right View	90.0 degre	es	Hea	vy Trucks:	56.285						
FHWA Noise Model Calculatio	ons										
VehicleType REMEL	Traffic Flow	Distan	ce Finite	Road	Fresnel	Barrier Atte	en Berm Atten				
Autos: 71.3			-0.89	-1.20	-4.6						
Medium Trucks: 82.4			-0.87	-1.20	-4.8						
Heavy Trucks: 86.4	40 -9.36		-0.87	-1.20	-5.3	4 0.0	00 0.00				
Unmitigated Noise Levels (wi	thout Topo and	barrier a	ttenuation)								
VehicleType Leq Peak H			q Evening	Leq N	5	Ldn	CNEL				
	74.4	72.2	70.8		66.9	74.5					
	68.7	66.7	62.4		61.7	69.1					
	75.0	72.1	71.1		69.9	76.7					
Vehicle Noise:	78.2	75.7	74.1	l	72.1	79.2	79				
Centerline Distance to Noise	Contour (in feet						1				
			70 dBA	65 d	BA	60 dBA	55 dBA				
		Ldn: NEL:	245 259		529 558	1,139 1,203	2,45				

	FHWA-RI	0-77-108 HIGH	WAYN	OISE	PREDIC	TION MC	DEL (9/12	/2021)					
	o: HYP e: Alessandro nt: e/o Barton				Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	IPUT DATA				NC	ISE MOD	EL INPUT	s				
Highway Data				5	Site Conc	litions (H	lard = 10,	Soft = 15)					
Average Daily	Traffic (Adt):	63,217 vehicle	es				Auto	s: 15					
Peak Hour	Percentage:	9.80%			Med	lium Truc	ks (2 Axle	s): 15					
Peak H	our Volume:	6,195 vehicle	s		Hea	avy Truck	s (3+ Axle	s): 15					
Ve	hicle Speed:	55 mph			Vehicle M	liv							
Near/Far La	ne Distance:	42 feet		-		cleType	Day	Evening	Night	Daily			
Site Data					venic		tos: 71.9	•	15.99				
					Mo	AL dium Tru			17.79				
	rier Height:	0.0 feet				leavy Tru			27.69				
Barrier Type (0-W	. ,	0.0				eavy IIu	UN3. 00.4	F/0 12.070	27.0	0 3.437			
Centerline Dis		60.0 feet		1	Noise So	urce Ele	ations (in	feet)					
Centerline Dist.		60.0 feet				Autos:	0.000						
Barrier Distance		0.0 feet			Medium	n Trucks:	2.297						
Observer Height (		5.0 feet			Heavy	Trucks:	8.004	Grade Ac	ljustmer	nt: 0.0			
	ad Elevation: ad Elevation:	0.0 feet		,	ano Equ	ivalont I	Distance (i	n foot)					
	a Elevation: Road Grade:	0.0 feet		-	Lane Lyu	Autos:		n leey					
,	Left View:	0.0%			Madium	n Trucks:							
	Right View:	-90.0 degree				/ Trucks: / Trucks:							
	Night view.	90.0 degree	:5		neavy	r mucho.	30.203						
FHWA Noise Mode		-											
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite F		Fresnel	Barrier At		erm Atten			
Autos:	71.78	4.96		-0.89		-1.20	-4.6		000	0.00			
Medium Trucks:	82.40	-11.65		-0.87		-1.20	-4.8		000	0.00			
Heavy Trucks:	86.40	-9.36		-0.87	7	-1.20	-5.3	4 0.	000	0.00			
Unmitigated Noise													
	Leq Peak Hou			Leq Ev	•	Leq N		Ldn		CNEL			
Autos:	74		72.5		70.8		67.2	74.	-	75.			
Medium Trucks:	68		66.7		62.4		61.7	69.		69.			
Heavy Trucks:	75		72.1		71.1		69.9	76.		77.0			
Vehicle Noise:	78	.3	75.9		74.3		72.2	79.	3	79.0			
Centerline Distanc	e to Noise Co	ontour (in feet	)										
Centerline Distanc	e to Noise Co			70 a		65 dl		60 dBA		5 dBA			
Centerline Distanc	e to Noise Co		) Ldn: NEL:	70 a	1BA 249 263	65 dl	537 567	60 dBA 1,158 1,223	3	5 dBA 2,494 2.634			

FHWA-RD-77-108 HIGHWAY I	OISE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Alessandro Blvd. Road Segment: e/o Meridian Pkwy.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 44,072 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 4,319 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 45 mph	Vehicle Mix
Near/Far Lane Distance: 42 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
Barrier Height: 0.0 feet	Medium Trucks: 75,3% 7,0% 17,7% 2,20%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Centerline Dist. to Barrier: 60.0 feet	
Centerline Dist. to Observer: 60.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Autos: 0.000
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 56.427
Left View: -90.0 degrees	Medium Trucks: 56.270
Right View: 90.0 degrees	Heavy Trucks: 56.285
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Dist	nce Finite Road Fresnel Barrier Atten Berm Atten
Autos: 68.46 4.25	-0.89 -1.20 -4.69 0.000 0.00
Medium Trucks: 79.45 -12.07	-0.87 -1.20 -4.88 0.000 0.00
Heavy Trucks: 84.25 -9.77	-0.87 -1.20 -5.34 0.000 0.00
Unmitigated Noise Levels (without Topo and barried	attenuation)
	eq Evening Leq Night Ldn CNEL
Autos: 70.6 68.5	66.8 63.2 70.8 71.
Medium Trucks: 65.3 63.4	59.1 58.3 65.7 66.
Heavy Trucks: 72.4 69.5	68.5 67.4 74.1 74.
Vehicle Noise: 75.1 72.6	71.0 69.1 76.2 76.
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	155 334 719 1,549
CNEL:	163 352 758 1,633

	FHWA-RD	-77-108 HIGHWA	Y NOIS	E PREDIC	TION MOI	DEL (9/	12/2021)					
Road Nam	io: E+P e: Alessandro nt: e/o Meridiar				Project Na Job Nurr			us Up	per Plate	e		
SITE	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Con	ditions (H	ard = 1	0, Soft = 1	15)				
Average Daily	Traffic (Adt):	50,059 vehicles				A	utos: 18	5				
Peak Hour	Percentage:	9.80%		Mee	dium Truck	ks (2 Ax	les): 15	5				
Peak H	our Volume:	4,906 vehicles		Hei	avy Trucks	s (3+ Ax	<i>les):</i> 15	5				
	hicle Speed:	45 mph		Vehicle N	lix							
Near/Far La	ne Distance:	42 feet		Vehi	cleType	D	ay Eve	ning	Night	Daily		
Site Data					Aut	los: 7	1.9% 12	2.2%	15.9%	94.799		
Ba	rier Height:	0.0 feet		Me	edium Truc	:ks: 7	5.3% 7	.0%	17.7%	1.93%		
Barrier Type (0-W	•	0.0		F	leavy Truc	:ks: 6	0.4% 12	2.0%	27.6%	3.28%		
Centerline Di	st. to Barrier:	60.0 feet		Noico So	urce Elev	ations	(in foot)					
Centerline Dist.	to Observer:	60.0 feet		10136 30	Autos:	0.00	. /					
Barrier Distance	to Observer:	0.0 feet		Mediur	n Trucks:	2.29						
Observer Height (	Above Pad):	5.0 feet			y Trucks:	8.00		le Adi	ustment:	0.0		
Pa	ad Elevation:	0.0 feet						10 / 10)	aounom.	0.0		
Roa	ad Elevation:	0.0 feet		Lane Equ	ivalent D							
	Road Grade:	0.0%			Autos:	56.42						
	Left View:	-90.0 degrees			n Trucks:	56.27						
	Right View:	90.0 degrees		Heav	y Trucks:	56.28	35					
FHWA Noise Mode	el Calculations											
VehicleType	REMEL		Distance			Fresne		er Atte		m Atten		
Autos:	68.46	4.84		.89	-1.20		1.69	0.0		0.00		
Medium Trucks:	79.45	-12.07		.87	-1.20		4.88	0.0		0.00		
Heavy Trucks:	84.25	-9.77	-0	.87	-1.20	-{	5.34	0.0	00	0.00		
Unmitigated Noise			rier atte	enuation)								
VehicleType	Leq Peak Hou			Evening	Leq Nig		Ldn			VEL		
Autos:	71.			67.4		63.8		71.3		71.		
Medium Trucks:	65.			59.1		58.3		65.7		66.		
Heavy Trucks:	72.		-	68.5		67.4		74.1		74.		
Vehicle Noise:	75.	3 72.	8	71.3		69.3		76.4		76.		
Centerline Distant	e to Noise Co	ntour (in feet)							-			
				) dBA	65 dB		60 dB.		55	dBA		
		Ldr		159		343		739		1,59		
		CNEL		168		362		779		1,679		

Wednesday, September 28, 2022

FHW	A-RD	-77-108 HIGHW	ATNO	ISE	PREDIC	TION M	ODEL (S	9/12/2	021)		
Scenario: EA						Project	Name: \	Nest (	Campus Up	per P	late
Road Name: Alessa	indro	Blvd.				Job N	umber: 1	14064			
Road Segment: e/o Me	eridiar	i Pkwy.									
SITE SPECIFI	C IN	PUT DATA			0.11					5	
Highway Data					Site Con	aitions			,		
Average Daily Traffic (A	·	50,625 vehicles						Autos:			
Peak Hour Percenta	-	9.80%					icks (2 A				
Peak Hour Volur		4,961 vehicles			He	avy Truc	:ks (3+ A	(xles):	15		
Vehicle Spe		45 mph		h	Vehicle I	<i>lix</i>					
Near/Far Lane Distan	ce:	42 feet		F	Vehi	cleType		Day	Evening	Night	t Daily
Site Data						A	utos:	71.9%	12.2%	15.9	% 94.08
Barrier Heig	ht.	0.0 feet			Me	edium Tr	ucks:	75.3%	7.0%	17.7	% 2.20
Barrier Type (0-Wall, 1-Ber		0.0			ŀ	leavy Ti	ucks:	60.4%	12.0%	27.6	% 3.73
Centerline Dist. to Barr	ier:	60.0 feet		b	Noise So	urce El	evation	: (in fe	pet)		
Centerline Dist. to Observ	er:	60.0 feet		H		Autos		000			
Barrier Distance to Observ	er:	0.0 feet			Modiu	n Trucks		297			
Observer Height (Above Pa	id):	5.0 feet				v Trucks		004	Grade Ad	ustme	nt 0.0
Pad Elevati	on:	0.0 feet								aoumo	
Road Elevati	on:	0.0 feet		4	Lane Equ	ıivalent	Distanc	e (in :	feet)		
Road Gra	de:	0.0%				Autos	56.4	427			
Left Vie	ew:	-90.0 degrees			Mediur	n Trucks	56.2	270			
Right Vie	ew:	90.0 degrees			Heav	y Trucks	56.2	285			
FHWA Noise Model Calcula	tions	1									
VehicleType REME		Traffic Flow	Distan		Finite		Fresn	-	Barrier Atte		lerm Atter
	8.46	4.85		-0.8	-	-1.20		-4.69	0.0		0.00
Medium Trucks: 7	9.45	-11.46		-0.8	7	-1.20		-4.88	0.0	000	0.00
Heavy Trucks: 8	4.25	-9.17		-0.8	7	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels (											
VehicleType Leq Peal				eq E	vening	Leq	Night		Ldn		CNEL
Autos:	71.		9.1		67.4		63.8		71.4		71
Medium Trucks:	65.		1.0		59.7		58.9		66.3		66
Heavy Trucks:	73.		).1		69.1		68.0		74.7		75
Vehicle Noise:	75.	7 73	3.2		71.6		69.7		76.8	3	77
Centerline Distance to Nois	se Co	ntour (in feet)						r		1	
				70	dBA	65 (	1BA	6	60 dBA	1 4	55 dBA
		L	in:		170 179		366 386		788 831		1,69 1,79

FHWA-RD-	77-108 HIGHWAY	NOISE	E PREDIC		IODEL (S	/12/20	021)		
Scenario: EAP Road Name: Alessandro E Road Segment: e/o Meridian					Name: \ lumber: 1		Campus Up	per Plat	e
SITE SPECIFIC INF	PUT DATA						L INPUTS	;	
Highway Data			Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt): 5	6,612 vehicles				/	Autos:	15		
Peak Hour Percentage:	9.80%				ucks (2 A				
Peak Hour Volume: 5	5,548 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	45 mph		Vehicle I	Mix					
Near/Far Lane Distance:	42 feet			icleType		Day	Evening	Night	Daily
Site Data					Autos:	71.9%	12.2%	15.9%	94.70%
Barrier Height:	0.0 feet		Me	edium T	rucks:	75.3%	7.0%	17.7%	1.96%
Barrier Type (0-Wall, 1-Berm):	0.0		ŀ	leavy T	rucks:	60.4%	12.0%	27.6%	3.33%
Centerline Dist. to Barrier:	60.0 feet		Noise So	urce E	lovations	(in fa	oof)		
Centerline Dist. to Observer:	60.0 feet		110/30 00	Auto		000			
Barrier Distance to Observer:	0.0 feet		Mediu	m Truck	- 0.0	97			
Observer Height (Above Pad):	5.0 feet			v Truck	•••	04	Grade Adj	ustment.	0.0
Pad Elevation:	0.0 feet					-			
Road Elevation:	0.0 feet		Lane Equ				feet)		
Road Grade:	0.0%			Auto					
Left View:	-90.0 degrees			m Truck					
Right View:	90.0 degrees		Heav	y Truck	s: 56.2	285			
FHWA Noise Model Calculations									
VehicleType REMEL	Traffic Flow Di	istance	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos: 68.46	5.37	-0.8		-1.20		4.69	0.0		0.000
Medium Trucks: 79.45	-11.46	-0.8	87	-1.20		-4.88	0.0	00	0.000
Heavy Trucks: 84.25	-9.17	-0.8	87	-1.20		-5.34	0.0	00	0.000
Unmitigated Noise Levels (without	ut Topo and barri	ier attei	nuation)						
VehicleType Leq Peak Hour		Leq E	ening	Leq	Night		Ldn		VEL
Autos: 71.7			67.9		64.3		71.9		72.3
Medium Trucks: 65.9			59.7		58.9		66.3		66.6
Heavy Trucks: 73.0			69.1		68.0		74.7		75.0
Vehicle Noise: 75.9	73.4		71.8		69.9		76.9		77.3
Centerline Distance to Noise Con	ntour (in feet)								
		70	dBA	65	dBA	6	60 dBA	55	dBA
	Ldn:		174		375		807		1,739
	CNEL:		183		395		852		1,835

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)								
Scenario: OYC Road Name: Alessandro Blvd. Road Segment: e/o Meridian Pkwy.	Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 52,834 vehicles	Autos: 15								
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 5,178 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 45 mph	Vehicle Mix								
Near/Far Lane Distance: 42 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%								
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%								
Centerline Dist. to Barrier: 60.0 feet	Naine Davies Flowstings (in fact)								
Centerline Dist. to Observer: 60.0 feet	Noise Source Elevations (in 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	Theavy Thucks. 8.004 Grade Adjustment. 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 56.427								
Left View: -90.0 degrees	Medium Trucks: 56.270								
Right View: 90.0 degrees	Heavy Trucks: 56.285								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dista									
Autos: 68.46 5.04	-0.89 -1.20 -4.69 0.000 0.00								
Medium Trucks: 79.45 -11.28	-0.87 -1.20 -4.88 0.000 0.00								
Heavy Trucks: 84.25 -8.98	-0.87 -1.20 -5.34 0.000 0.00								
Unmitigated Noise Levels (without Topo and barrier	attenuation)								
	eq Evening Leq Night Ldn CNEL								
Autos: 71.4 69.3	67.6 64.0 71.6 72.0								
Medium Trucks: 66.1 64.2	59.9 59.1 66.5 66.4								
Heavy Trucks: 73.2 70.3	<u>69.3</u> <u>68.2</u> <u>74.9</u> <u>75.</u>								
Vehicle Noise: 75.9 73.4	71.8 69.9 77.0 77.								
Centerline Distance to Noise Contour (in feet)									
	70 dBA 65 dBA 60 dBA 55 dBA								
Ldn:	175 376 811 1,748 184 397 855 1,843								
CNEL									

		77-108 HIGHV		110102	I ILEBIO			-			
Scenario: OYC									Campus U	oper Plat	е
Road Name: Ales						Job I	lumber:	14064			
Road Segment: e/o N	<i>l</i> eridian	Pkwy.									
SITE SPECI	FIC INF	PUT DATA							L INPUT	s	
Highway Data				5	Site Con	ditions	(Hard =	: 10, Se	oft = 15)		
Average Daily Traffic (	Adt): 5	8,821 vehicles	;					Autos:	15		
Peak Hour Percent	tage:	9.80%			Mee	dium Ti	rucks (2	Axles):	15		
Peak Hour Vol	ume: S	5,764 vehicles			Hei	avy Tru	icks (3+	Axles):	15		
Vehicle Sp		45 mph		١	/ehicle N	Nix					
Near/Far Lane Dista	nce:	42 feet			Vehi	cleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	94.68
Barrier He	iaht:	0.0 feet			Me	edium 1	rucks:	75.3%	5 7.0%	17.7%	1.97
Barrier Type (0-Wall, 1-Be	•	0.0			F	leavy 1	Trucks:	60.4%	5 12.0%	27.6%	3.35
Centerline Dist. to Ba		60.0 feet			loise So	uree E	lovation	o lin f	a of l		
Centerline Dist. to Obse	erver:	60.0 feet		'	voise so	Auto		.000	eel)		
Barrier Distance to Obse	erver:	0.0 feet			Mediur			.000			
Observer Height (Above I	Pad):	5.0 feet				y Truck		.004	Grade Ad	iustment	. 0 0
Pad Eleva	ation:	0.0 feet			Ticav	y mucr		.004	Ondic Au	Justinent	. 0.0
Road Eleva	ation:	0.0 feet		L	ane Equ	uivalen	t Distan	ce (in	feet)		
Road G	rade:	0.0%				Auto	os: 56	.427			
Left	/iew:	-90.0 degrees	5		Mediur			.270			
Right	/iew:	90.0 degrees	5		Heav	y Truck	(s: 56	.285			
FHWA Noise Model Calcu	lations										
VehicleType REM	IEL	Traffic Flow	Dist	tance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atter
Autos:	68.46	5.53		-0.89	9	-1.20		-4.69	0.	000	0.0
Medium Trucks:	79.45	-11.28		-0.87	7	-1.20		-4.88	0.	000	0.0
Heavy Trucks:	84.25	-8.98		-0.87	7	-1.20		-5.34	0.	000	0.0
Unmitigated Noise Levels			arrie								
	ak Hour			Leq Ev		Leq	Night		Ldn		NEL
Autos:	71.9		9.8		68.1		64.		72.		72
Medium Trucks:	66.1		4.2		59.9		59.		66.		66
Heavy Trucks:	73.2		0.3		69.3		68.		74.		75
Vehicle Noise:	76.1	1 7	3.6		72.0		70.	1	77.	1	77
Centerline Distance to No	oise Cor	ntour (in feet)	_								
			. L	70 a		65	dBA		60 dBA		dBA
			dn:		179		385		830		1,78
		CN	F1 ·		189		406	2	875		1.88

Wednesday, September 28, 2022

FHWA-RD-77-108 HIGHV	VAY NO	DISEF	PREDIC	TION MO	DEL (S	0/12/20	021)				
Scenario: HY							ampus Up	oper Plat	e		
Road Name: Alessandro Blvd.				Job Nur	nber: 1	4064					
Road Segment: e/o Meridian Pkwy.											
SITE SPECIFIC INPUT DATA Highway Data		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
			ne oom	unions (n		Autos:	15				
Average Daily Traffic (Adt): 62,393 vehicles Peak Hour Percentage: 9.80%	5		Max	dium Truc			15				
Peak Hour Volume: 6.115 vehicles				avy Truck			15				
Vehicle Speed: 45 mph					3 (01 7	1003).	10				
Near/Far Lane Distance: 42 feet		V	ehicle N								
			Vehi	cleType		Day	Evening	Night	Daily		
Site Data						71.9%		15.9%			
Barrier Height: 0.0 feet				edium Tru		75.3%		17.7%			
Barrier Type (0-Wall, 1-Berm): 0.0			H	leavy Tru	cks:	60.4%	12.0%	27.6%	3.73		
Centerline Dist. to Barrier: 60.0 feet		N	oise So	urce Elev	ations	; (in fe	et)				
Centerline Dist. to Observer: 60.0 feet		-		Autos:		000					
Barrier Distance to Observer: 0.0 feet			Mediun	n Trucks:	0.0	97					
Observer Height (Above Pad): 5.0 feet				v Trucks:	8.0	004	Grade Ad	iustment	: 0.0		
Pad Elevation: 0.0 feet											
Road Elevation: 0.0 feet		L	ane Equ	ivalent D			eet)				
Road Grade: 0.0%				Autos:							
Left View: -90.0 degrees				n Trucks:	56.2						
Right View: 90.0 degrees	6		Heav	y Trucks:	56.2	285					
FHWA Noise Model Calculations											
VehicleType REMEL Traffic Flow	Distar		Finite		Fresn	-	Barrier Att		rm Atte		
Autos: 68.46 5.76		-0.89		-1.20		-4.69		000	0.0		
Medium Trucks: 79.45 -10.56		-0.87		-1.20		-4.88		000	0.0		
Heavy Trucks: 84.25 -8.26		-0.87		-1.20		-5.34	0.0	000	0.0		
Unmitigated Noise Levels (without Topo and b VehicleType Leg Peak Hour Leg Day	-	ettenu eq Eve		Leg Ni	aht		Ldn		NEL		
	0.0	SY EV	68.3	Ley N	64.7		72.3		NEL 72		
	4.9		60.6		59.8		67.3		67		
	1.0		70.0		68.9		75.0		75		
	4.1		72.5		70.7		77.	-	78		
Centerline Distance to Noise Contour (in feet)											
Centerline Distance to Noise Contour (in feet)		70 dl	BA	65 dE	3A	6	0 dBA	55	dBA		
, ,	dn:	70 dl	BA 195	65 dE	BA 421	6	0 dBA 906		dBA 1,95		

FHWA-RL	-77-108 HIGH	WAT	NOISE	REDIC		IODEL	(9/12/2)	<u>(12</u> 1)	_				
Scenario: HYP				Project Name: West Campus Upper Plate Job Number: 14064									
Road Name: Alessandro					Job N	lumber:	14064						
Road Segment: e/o Meridiar	n Pkwy.												
SITE SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
Highway Data				Site Con	ditions	(Hard =	= 10, Sc	oft = 15)					
Average Daily Traffic (Adt):	68,380 vehicle	es					Autos:	15					
Peak Hour Percentage:	9.80%				dium Tr		,						
Peak Hour Volume:	6,701 vehicles	S		He	avy Tru	cks (3+	Axles):	15					
Vehicle Speed:	45 mph		F	Vehicle	Mix								
Near/Far Lane Distance:	42 feet		F	Veh	icleType		Day	Evening	Night	Daily			
Site Data						Autos:	71.9%	12.2%	15.9%	94.60			
Barrier Height:	0.0 feet			M	edium T	rucks:	75.3%	7.0%	17.7%	2.009			
Barrier Type (0-Wall, 1-Berm):	0.0			I	Heavy T	rucks:	60.4%	12.0%	27.6%	3.409			
Centerline Dist. to Barrier:	60.0 feet			Noise So	ource El	levatior	ns (in fe	et)					
Centerline Dist. to Observer:	60.0 feet				Auto		.000						
Barrier Distance to Observer:	0.0 feet			Mediu	m Truck		297						
Observer Height (Above Pad):	5.0 feet				vy Truck	o. –	004	Grade Ad	iustment	0.0			
Pad Elevation:	0.0 feet												
Road Elevation:	0.0 feet			Lane Eq				feet)					
Road Grade:	0.0%				Auto		.427						
Left View:	-90.0 degree	es			m Truck	. 00	.270						
Right View:	90.0 degree	es		Heav	ry Truck	s: 56	.285						
FHWA Noise Model Calculations													
VehicleType REMEL	Traffic Flow	Di	stance		Road	Fres	-	Barrier Att		m Atten			
Autos: 68.46	6.18		-0.8		-1.20		-4.69		000	0.00			
Medium Trucks: 79.45	-10.56		-0.8		-1.20		-4.88		000	0.00			
Heavy Trucks: 84.25	-8.26		-0.8	37	-1.20		-5.34	0.0	000	0.00			
Unmitigated Noise Levels (with							1						
VehicleType Leq Peak Hou			Leq E	vening	Leq	Night	_	Ldn		NEL			
Autos: 72		70.4		68.7		65		72.		73.			
Medium Trucks: 66		64.9		60.6		59	-	67.	-	67.			
Heavy Trucks: 73		71.0		70.0		68	-	75.	-	75.			
Vehicle Noise: 76		74.3		72.7		70.	8	77.	5	78.			
Centerline Distance to Noise Co	ntour (in feet,	)	70	dBA	67	dBA		0 dBA		dBA			
		1 -1	70		65		-						
		Ldn:		199 210		429 45	-	924 975		1,990 2,100			
		VEL:											

FHWA-RD-77-108 HI	GHWAY NOI	SE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Alessandro Blvd. Road Segment: w/o Day St.		Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DAT	Α	NOISE MODEL INPUTS
Highway Data		Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 26,874 veh	icles	Autos: 15
Peak Hour Percentage: 9.80%		Medium Trucks (2 Axles): 15
Peak Hour Volume: 2,634 vehi	cles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 45 mph		Vehicle Mix
Near/Far Lane Distance: 82 feet		VehicleType Day Evening Night Daily
Site Data		Autos: 71.9% 12.2% 15.9% 94.08
Barrier Height: 0.0 fee	t	Medium Trucks: 75.3% 7.0% 17.7% 2.20
Barrier Type (0-Wall, 1-Berm): 0.0	L	Heavy Trucks: 60.4% 12.0% 27.6% 3.73
Centerline Dist. to Barrier: 67.0 fee		
Centerline Dist. to Observer: 67.0 fee	t	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 fee	t	Autos: 0.000
Observer Height (Above Pad): 5.0 fee	t	Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 fee	t	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 fee	t	Lane Equivalent Distance (in feet)
Road Grade: 0.0%		Autos: 53.226
Left View: -90.0 deg	rees	Medium Trucks: 53.059
Right View: 90.0 deg	jrees	Heavy Trucks: 53.076
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flo	w Distanc	e Finite Road Fresnel Barrier Atten Berm Atte
Autos: 68.46 2.	10 -0	0.51 -1.20 -4.71 0.000 0.0
Medium Trucks: 79.45 -14.	21 -(	0.49 -1.20 -4.88 0.000 0.0
Heavy Trucks: 84.25 -11.	92 -(	0.49 -1.20 -5.29 0.000 0.0
Unmitigated Noise Levels (without Topo a		
VehicleType Leq Peak Hour Leq I		Evening Leq Night Ldn CNEL
Autos: 68.9	66.7	65.0 61.4 69.0 69
Medium Trucks: 63.5	61.6	57.3 56.6 64.0 6
Heavy Trucks: 70.6	67.7	66.7 65.6 72.4 72
Vehicle Noise: 73.3	70.8	69.3 67.4 74.4 74
Centerline Distance to Noise Contour (in f		
		0 dBA 65 dBA 60 dBA 55 dBA
	Ldn:	132 284 612 1,3
	CNEL:	139 300 645 1,39

	FHWA-RD	-77-108 HIGH	WAY N	IOISE P	REDIC	TION MO	DDEL (	9/12/2	021)				
	o: E+P e: Alessandro nt: w/o Day St.				Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	PUT DATA				N	DISEN	IODE	L INPUT	s			
Highway Data				Si	te Cond	litions (l	Hard =	10, So	oft = 15)				
Average Daily	Traffic (Adt):	28,205 vehicle	s					Autos:	15				
Peak Hour	Percentage:	9.80%			Med	lium Tru	cks (2 A	Axles):	15				
Peak H	our Volume:	2,764 vehicles			Hea	avy Truck	ks (3+ A	Axles):	15				
	hicle Speed:	45 mph		Ve	Vehicle Mix								
Near/Far La	ne Distance:	82 feet			Vehi	cleType		Day	Evening	Night	Daily		
Site Data						A	utos:	71.9%	12.2%	15.9%	94.369		
Bar	rier Height:	0.0 feet			Me	dium Tru	icks:	75.3%	7.0%	17.7%	2.099		
Barrier Type (0-W		0.0			Н	leavy Tru	icks:	60.4%	12.0%	27.6%	3.55%		
Centerline Dis	. ,	67.0 feet		AL.	nica Sa	urce Ele	vation	e (in f	oof)				
Centerline Dist.	to Observer:	67.0 feet		744	Jise 30	Autos		000	eel)				
Barrier Distance	to Observer:	0.0 feet			Mediun	n Trucks		297					
Observer Height (	Above Pad):	5.0 feet				/ Trucks.		207	Grade Ad	iustment	0.0		
Pa	ad Elevation:	0.0 feet			neavy	indexs.	0.	-00	0,000,10	Juotimonit	0.0		
Roa	ad Elevation:	0.0 feet		Lá	ne Equ	ivalent l	Distand	ce (in i	feet)				
F	Road Grade:	0.0%				Autos.		226					
	Left View:	-90.0 degree				n Trucks.							
	Right View:	90.0 degree	s		Heavy	/ Trucks.	53.	076					
FHWA Noise Mode		1											
VehicleType	REMEL	Traffic Flow	Dista		Finite I		Fresn	-	Barrier Att		m Atten		
Autos:	68.46	2.33		-0.51		-1.20		-4.71		000	0.00		
Medium Trucks:	79.45	-14.21		-0.49		-1.20		-4.88		000	0.00		
Heavy Trucks:	84.25	-11.92		-0.49		-1.20		-5.29	0.0	000	0.00		
Unmitigated Noise					<u> </u>			1					
	Leq Peak Hou			Leq Eve		Leq N			Ldn		VEL		
Autos: Medium Trucks:	69 63		56.9 51.6		65.3 57.3		61.6 56.6		69.: 64.		69. 64.		
Heavy Trucks:	63 70		51.6 57.7		57.3 66.7		56.6		64. 72.4		64. 72		
Vehicle Noise:	70		70.9		69.4		67.4		74.		74		
					00.4		07.5		74.		74		
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dE	BA	65 d	BA	6	60 dBA	55	dBA		
			Ldn:		133		287		618	_	1.33		

Wednesday, September 28, 2022

Scenario: FA						Project N	lama: 1	Noct C	Campus Up	nor Plat	0
Road Name: Alessa	ndro P	and				Job Nu			Jampus Op	рег ма	e
Road Segment: w/o Da		JIVU.				300 110	nber.	4004			
Ţ	,			- 1							
SITE SPECIFI	C INP	PUT DATA							L INPUT	S	
Highway Data					Site Cond	aitions (I			,		
Average Daily Traffic (Ad	·	80,870 vehicle	S					Autos:			
Peak Hour Percentag		9.80%				dium True					
Peak Hour Volum		3,025 vehicles			Hea	avy Truck	's (3+ A	xles):	15		
Vehicle Spee		45 mph			Vehicle N	lix					
Near/Far Lane Distand	ce:	82 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	itos:	71.9%	12.2%	15.9%	94.08
Barrier Heigi	ht.	0.0 feet			Me	dium Tru	cks:	75.3%	7.0%	17.7%	2.20
Barrier Type (0-Wall, 1-Berr		0.0 1001			H	leavy Tru	cks:	60.4%	12.0%	27.6%	3.73
Centerline Dist. to Barri	·	67.0 feet		-	N 0-			. C	41		
Centerline Dist. to Observ	er:	67.0 feet		1	Noise So	Autos			eet)		
Barrier Distance to Observ	er:	0.0 feet					0.0	000 297			
Observer Height (Above Pa	d):	5.0 feet				n Trucks:		297 004	Grade Ad	iuntmont	
Pad Elevation	on:	0.0 feet			Heav	y Trucks:	8.0	104	Grade Auj	usunen	. 0.0
Road Elevation	on:	0.0 feet			Lane Equ	ivalent l	Distanc	e (in i	feet)		
Road Grad	de:	0.0%				Autos:	53.2	226			
Left Vie	W.	-90.0 degree	s		Mediun	n Trucks:	53.0	)59			
Right Vie	W:	90.0 degree	S		Heav	y Trucks.	53.0	076			
FHWA Noise Model Calcula	tions										
VehicleType REMEL		Traffic Flow	Dista	ance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atter
Autos: 68	8.46	2.71		-0.5	1	-1.20		4.71	0.0	000	0.0
Medium Trucks: 79	9.45	-13.61		-0.4	9	-1.20		-4.88	0.0	000	0.0
	4.25	-11.32		-0.4	9	-1.20		-5.29	0.0	000	0.0
Heavy Trucks: 84		A Town and b	arrier	atten	uation)						
Heavy Trucks: 84	withou	ит торо апа с					iaht		Ldn	C	NEL
				Leq E	vening	Leq N	igin				70
Unmitigated Noise Levels (		Leq Day		Leq E	vening 65.6	Leq N	62.0		69.6	2	
Unmitigated Noise Levels ( VehicleType Leq Peak	Hour	Leq Day	L	Leq E		Leq N	<u> </u>		69.6 64.6	-	64
Unmitigated Noise Levels ( VehicleType Leq Peak Autos:	Hour 69.5	Leq Day	67.3	Leq E	65.6	Leq N	62.0			5	
Unmitigated Noise Levels ( VehicleType Leq Peak Autos: Medium Trucks:	Hour 69.5 64.1	Leq Day 5 6 1 6 2 6	1 7.3 2.2	Leq E	65.6 57.9	Leq N	62.0 57.2		64.6	5 6 )	73
Unmitigated Noise Levels (v VehicleType Leq Peak Autos: Medium Trucks: Heavy Trucks:	Hour 69.5 64.1 71.2 73.9	Leq Day 5 6 2 6 9 7	67.3 62.2 68.3	Leq E	65.6 57.9 67.3	Leq N	62.0 57.2 66.2		64.6 73.0	5 6 )	73
Unnitigated Noise Levels (v VehicleType Leq Peak Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Hour 69.5 64.1 71.2 73.9	Leq Day 5 6 2 6 9 7	67.3 62.2 68.3	- 1	65.6 57.9 67.3	Leq N 65 d	62.0 57.2 66.2 68.0	1	64.6 73.0	5 ) )	73
Unmitigated Noise Levels (v VehicleType Leq Peak Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	Hour 69.5 64.1 71.2 73.9	Leq Day	67.3 62.2 68.3	- 1	65.6 57.9 67.3 69.9		62.0 57.2 66.2 68.0	1	64.6 73.0 75.0	55	73 75

Lane Type (lowal, Type)     Oto of the text of text of the text of tex of text of text of tex of text of tex of		FHWA-RD	0-77-108 HIGH	NAY NO	ISE P	REDIC	FION M	ODEL (9	/12/20	21)		
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         32,201 vehicles         Autos:         15           Peak Hour Percentage:         9.80%         Medium Trucks (2 Akes):         15           Peak Hour Volume:         3,156 vehicles         Medium Trucks (2 Akes):         15           Vehicle Speed:         45 mph         Medium Trucks (2 Akes):         15           Barrier Height:         0.0 feet         Heavy Trucks:         67.0 % 12.0%         15.9%         94.323           Barrier Dist. to Dserver:         67.0 feet         Autos:         12.0%         27.6%         3.57           Centerline Dist. to Dserver:         0.0 feet         Autos:         0.000         Medium Trucks:         2.297         Moise Source Elevations (in feet)         Autos:         0.00           Centerline Dist. to Dserver:         0.0 feet         Autos:         0.00         Medium Trucks:         2.297         Heavy Trucks:         8.04         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         -90.0 degrees         Heavy Trucks:         53.076           FHWA Noise Model Calculations         Finite Road         Fresnel         Barrier Atten         Bermart Atten           Autos:         88.	Road Nam	e: Alessandro								ampus Up	oper Pla	te
Average Daily Traffic (Adt):         32,201 vehicles         Autos:         15           Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         3,156 vehicles         Heavy Trucks (3+ Axles):         15           Vehicle Speed:         45 mph         Vehicle Type         Day         Evening         Night         Daily           Site Data         Autos:         7.0 feet         Medium Trucks:         7.3%         7.0%         17.7%         2.1%           Barrier Height:         0.0 feet         Medium Trucks:         7.3%         7.0%         17.7%         2.1%           Barrier Dist. to Diserver:         67.0 feet         Autos:         0.00         Medium Trucks:         7.297         7.6%         3.57%           Centerline Dist. to Observer:         0.0 feet         Autos:         0.00         Medium Trucks:         5.0 etet         Autos:         0.00         Medium Trucks:         8.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         53.059         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Distance         Finite Road         Fresnel         Barrier Atten	SITE	SPECIFIC IN	PUT DATA				N	OISE M	ODE		s	
Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         3,155 vehicles         Heavy Trucks (3* Axles):         15           Vehicle Speed:         45 mph         Vehicle Mix         Vehicle Mix         Vehicle Mix           Site Data         Autos:         71.9%         12.2%         15.9%         94.329           Barrier Height:         0.0 feet         Autos:         71.9%         12.2%         15.9%         94.329           Centerline Dist. to Barrier:         67.0 feet         Medium Trucks:         70.9%         17.7%         2.119           Barrier Height:         0.0 feet         Autos:         0.000         Moise Source Elevations (in feet)           Centerline Dist. to Barrier:         0.0 feet         Autos:         0.000         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         53.059         Heavy Trucks:         53.059           Road Grade:         0.0 feet         Lane Equivalent Distance (in feet)         0.000         0.000           Road Grade:         0.09%         Lane Trucks:         53.059         Heavy Trucks:         53.059           VehicleType         REMEL         Traffic Flow         Distance	Highway Data				Si	te Conc	litions	(Hard = 1	0, So	ft = 15)		
Peak Hour Volume:         3,156         vehicles           Vehicle Speed:         45         mph           Near/Far Lane Distance:         82         feet           Site Data         Vehicle Type         Day         Evening         Night         Daily           Site Data         Vehicle Type         Day         Evening         Night         Daily           Barrier Height:         0.0         feet         Matos:         71.9%         12.2%         15.9%         94.323           Barrier Type (0-Wail, 1-Berm):         0.0         feet         Moles         Guide Trucks:         67.0 %         17.7%         2.119           Barrier Distance to Observer:         67.0 feet         Moles         Source Elevations (in feet)         Noise         Noise         Source         Reduit Trucks:         2.297           Observer Height View:         90.0 degrees         Medium Trucks:         5.058         Medium Trucks:         5.059           Right View:         90.0 degrees         Heavy Trucks:         5.059         Heavy Trucks:         5.059           FHWA Noise Model Calculations         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.	Average Daily	Traffic (Adt):	32,201 vehicle	s				A	utos:	15		
Vehicle Speed: Near/Far Lane Distance:         45 mph 82 feet         Vehicle Mix           Site Dat         Autos: 71.9%         12.2%         15.9%         94.32           Barrier Height:         0.0 feet         Medium Trucks: 75.3%         7.0%         17.7%         2.1%           Barrier Type (0-Wall, 1-Berm):         0.0         60.0         Medium Trucks: 75.3%         7.0%         17.7%         2.1%           Centerline Dist. to Darrier:         67.0 feet         Noise Source Elevations (in feet)         0.00         76.6%         3.57%           Dist. to Observer:         0.0 feet         Medium Trucks:         6.3.4%         12.0%         27.6%         3.57%           Pad Elevation:         0.0 feet         Autos:         0.000         Medium Trucks:         6.3.4%         12.0%         27.6%         3.57%           Pad Elevation:         0.0 feet         Autos:         0.000         Medium Trucks:         6.0.4%         12.0%         21.6%         Medium Trucks:         53.26         Medium Trucks:         53.076           FHWA Noise Model Calculations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         68.46         2.90 <td>Peak Hour</td> <td>Percentage:</td> <td>9.80%</td> <td></td> <td></td> <td>Med</td> <td>lium Tru</td> <td>ucks (2 A</td> <td>kles):</td> <td>15</td> <td></td> <td></td>	Peak Hour	Percentage:	9.80%			Med	lium Tru	ucks (2 A	kles):	15		
Near/Far Lane Distance:         82 feet         Vehicle Type         Day         Evening         Night         Daly           Site Data         Autos:         71.9%         12.2%         15.9%         94.329           Barrier Height:         0.0 feet         Medium Trucks:         75.3%         7.0%         17.7%         2.19           Barrier Type (0-Wall, 1-Berm):         0.0          Noise Source Elevations (in feet)         7.0%         3.57%           Centerline Dist. to Dserver:         67.0 feet         Noise Source Elevations (in feet)         7.0%         3.57%           Observer Height (Above Pad):         5.0 feet         Autos:         0.000         Medium Trucks:         2.297           Road Grade:         0.0 feet         Autos:         53.059         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0 feet         Lane Equivalent Distance (in feet)         Autos:         53.059         Heavy Trucks:         53.059           FHWA Noise Model Calculations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71 </td <td>Peak H</td> <td>our Volume:</td> <td>3,156 vehicles</td> <td></td> <td></td> <td>Hea</td> <td>ivy Truc</td> <td>cks (3+ A</td> <td>kles):</td> <td>15</td> <td></td> <td></td>	Peak H	our Volume:	3,156 vehicles			Hea	ivy Truc	cks (3+ A	kles):	15		
Near/Far Lane Distance:         82 feet           VehicleType         Day         Evening         Night         Daly           Site Data         Autos:         71.9%         12.3%         15.9%         94.32%           Barrier Type (0-Wall, 1-Berm):         0.0         Medium Trucks:         75.3%         7.0%         17.7%         2.1%           Barrier Type (0-Wall, 1-Berm):         0.0         Medium Trucks:         63.4%         12.0%         27.6%         3.57%           Centerline Dist. to Doserver:         67.0 feet         Autos:         0.000         Medium Trucks:         72.97         7.6%         3.57%           Deserver Height (Above Pad):         5.0 feet         Autos:         0.000         Medium Trucks:         63.04%         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Autos:         63.05%           Road Grade:         0.0%         Autos:         53.056         Heavy Trucks:         53.059           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Frinte Road         Fresnel         Barrier Atten         Berm Atten           Autos:         63.46         2.90         -0.51	Ve	hicle Speed:	45 mph		Ve	hicle M	liv					
Site Data         Autos:         71.9%         12.2%         15.9%         94.329           Barrier Height:         0.0 feet         Medium Trucks:         75.9%         94.329           Barrier Type (0-Wall, 1-Berm):         0.0         17.7%         2.119           Centerline Dist. to Darrier:         67.0 feet         Noise Source Elevations (in feet)         17.7%         2.119           Deserver Height (Above Pad):         5.0 feet         Noise Source Elevations (in feet)         Autos:         0.000           Road Elevation:         0.0 feet         Autos:         53.059         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0 feet         Autos:         53.059         Heavy Trucks:         53.059           Right View:         -90.0 degrees         Heavy Trucks:         53.059         Heavy Trucks:         53.059           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.000           Medium Trucks:         79.45         -13.61         -0.49         -120         -5.29         0.0000         0.000	Near/Far La	ne Distance:	82 feet						)av	Evenina	Niaht	Daily
Barrier Height:         0.0 feet           Barrier Type (0-Wall, 1-Berm):         0.0           Centerline Dist. to Barrier:         67.0 feet           Centerline Dist. to Observer:         67.0 feet           Barrier Jbis no to Doserver:         67.0 feet           Barrier Joist no boserver:         67.0 feet           Barrier Distance to Observer:         67.0 feet           Road Elevation:         0.0 feet           Road Grade:         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees           FHWA Noise Model Calculations         Venice Type           Venice Type         Traffic Flow         Distance           Venice Type         Left View:         -90.0 degrees           FHWA Noise Model Calculations         Finite Road         Fresnel           Venice Type         REMEL         Traffic Flow         Distance           Venice Type         Leq Venice Type         -11.32         -0.49           -12.0         -4.71         0.000         0.000           Medium Trucks:         79.5         57.2         64.6           Autos:         69.6	Sito Data				-	venic						
Barrier Type (IV)         Oto Teet           Barrier Type (IV)         0.0 feet           Centerline Dist. to Diserver:         67.0 feet           Barrier Type (IV)         67.0 feet           Barrier Type (IV)         0.0 feet           Road 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           Right View:         90.0 degrees           Heavy Trucks:         53.076           FHWA Noise Model Calculations         Distance           VehicleType         REMEL           VehicleType         REMEL           VehicleType         REMEL           VehicleType         Leq View:           94.2         -11.32           -0.49         -1.20           -4.88         0.000           Umitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Deak Hour           Leq Deak Hour         Leq Zer 57.9           Autos:         69.6           67.5         65.8           62.2         69.8     <						Me						
Dame         Transfer         67.0 feet           Centerline Dist. to Barrier:         67.0 feet           Barrier Distance to Observer:         67.0 feet           Barrier Distance to Observer:         0.0 feet           Barrier Distance to Observer:         0.0 feet           Road Glevation:         0.0 feet           Road Grade:         0.0 feet           Road Grade:         0.0 feet           Road Grade:         0.0 feet           Left View:         -90.0 degrees           PHWA Noise Model Calculations         Dot gerees           Vehicle Type         REMEL         Traffic Flow           Unmitigated Noise Levels (without Topo and barrier attenuation)         -4.71           Vehicle Type         Reader Hour         Leq Day           Leq Venice Type         Leq Peak Hour         Leq Revening           Vehicle Type         Leq Peak Hour         Leq Qay         Leq Vening           Vehicle Noise:         74.0         71.5         69.9         67.2           Medium Trucks:         74.0         71.5												
Centerline Dist. to Observer:         67.0 feet         Noise Source Elevations (in feet)           Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Pad Elevation:         0.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)         Autos:         53.059           Right View:         90.0 degrees         Heavy Trucks:         53.059         Heavy Trucks:         53.076           FHWA Noise Model Calculations         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.77         0.000         0.000           Heavy Trucks:         84.25         -11.32         -0.49         -1.20         -5.29         0.000         0.000           Unititigated Noise Levels (without Topo and barrier attenuation)         UveniceType         Leq Day         Leq Evening         Leq Neght         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2		. ,									21.07	0.017
Barrier Distance to Observer:         0.0 feet         Autos:         0.000           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         53.26           Left View:         90.0 degrees         Medium Trucks:         53.27           Right View:         90.0 degrees         Medium Trucks:         53.076           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Bermar Atten           Autos:         68.46         2.90         -0.51         -120         -4.77         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -5.29         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -5.29         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         Use Revening         Leg Night         Ldn         CNEL           Autos:         64.1         62.2         67.9         65.2         63.8         70.           Medium Trucks:					No	oise So	urce El	evations	(in fe	et)		
Observer Height (Above Pad):         5.0 feet         Medium Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Clevation:         0.0 feet         Lafe Yards:         8.004         Grade Adjustment:         0.0           Road Clevation:         0.0 feet         Lafe Yards:         8.004         Grade Adjustment:         0.0           Left View:         -90.0 degrees         Medium Trucks:         53.226         Medium Trucks:         53.256           FHWA Noise Model Calculations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.000           Medium Trucks:         79.45         -13.61         -0.49         -120         -5.29         0.000         0.000           Medium Trucks:         84.25         -11.32         -0.49         -120         -5.29         0.000         0.000           Umitigated Noise Levels (without Topo and barrier attenuation)         Medium Trucks:         69.6         67.5         65.8         62.2         69.8												
Pad Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Calculation:         0.0 feet           Lane Equivalent Distance (in feet)           Autos:         53.059           Right View:         90.0 degrees           Right View:         90.0 degrees           Heavy Trucks:         53.059           Heavy Trucks:         53.076           FHWA Noise Model Calculations         Medium Trucks:         53.076           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -120         -5.29         0.000         0.00           Unititigated Noise Levels (without Topo and barrier attenuation)         Use Topo         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         71.2         68.3						Medium	n Truck	s: 2.2				
Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         53.226           Left View:         90.0 degrees         Medium Trucks:         53.059           PHWA Noise Model Calculations         Finite Road         Fresnel         Barrier Atten         Berrm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.77         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -5.29         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -4.88         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leg Reinf         Leg Reinf         Leg Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         74.0         71.5         69.9         68.0         75.1         75.           Medium Trucks:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in fee	<b>e</b> (	,				Heavy	/ Trucks	s: 8.0	04	Grade Adj	iustmen	t: 0.0
Road Grade:         0.0%         Autos:         53.226           Left View:         -90.0 degrees         Medium Trucks:         53.256           Medium Trucks:         53.059         Heavy Trucks:         53.056           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -4.88         0.000         0.00           Medium Trucks:         84.25         -11.32         -0.49         -1.20         -5.29         0.000         0.000           Unmitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leq Peak Hour         Leq Qay         Leq Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0					Lé	ane Eau	ivalent	Distanc	e (in f	eet)		
Left View:         -90.0 degrees         Medium Trucks:         53.059           Right View:         90.0 degrees         Heavy Trucks:         53.059           FHWA Noise Model Calculations         Emetal         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -4.88         0.000         0.00           Unitigated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Eq Evening         Leq Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Type         T1.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)         To dBA         65 dBA         60 dBA         55					-							
Right View:         90.0 degrees         Heavy Trucks:         53.076           FHWA Noise Model Calculations         Presnel         Barrier Atten         Berm Atten           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -4.88         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           VehicleType         1.20         -5.29         0.000         0.00         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Day         Leq Night         Ldn         CNEL           Medium Trucks:         64.1         62.2         67.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         65.2         73.0         75.           Vehicle Noise:         74.0         71.5 </td <td>,</td> <td></td> <td></td> <td>e</td> <td></td> <td>Mediun</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	,			e		Mediun						
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.000           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -4.71         0.000         0.00           Heavy Trucks:         84.25         -11.32         -0.49         -1.20         -5.29         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         -1.20         -5.29         0.000         0.00           Matos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)												
Autos:         68.46         2.90         -0.51         -1.20         -4.71         0.000         0.000           Medium Trucks:         79.45         -13.61         -0.49         -1.20         -4.88         0.000         0.000           Heavy Trucks:         84.25         -11.32         -0.49         -1.20         -5.29         0.000         0.000           Unmitigated Moise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Qay         Leq Evening         Leq Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)	FHWA Noise Mode	Calculation:	s									
Medium Trucks:         79.45         -13.61         -0.49         -1.20         -4.88         0.000         0.000           Heavy Trucks:         84.25         -11.32         -0.49         -1.20         -5.29         0.000         0.000           Unmitigated Noise Levels (without Topo and barrier attenuation)         -         -         -5.29         0.000         0.000           VehicleType         Leq Deak Hour         Leq Day         Leq Reging         Leq Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         68.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)         -         -         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         146         314         677         1.455         67.4         67.4         67.4	VehicleType	REMEL	Traffic Flow	Distan	се	Finite F	Road	Fresne	e/ 1	Barrier Atte	en Be	rm Atten
Heavy Trucks:         84.25         -11.32         -0.49         -1.20         -5.29         0.000         0.000           Unmitigated Noise Levels (without Topo and barrier attenuation)         Leq Reak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Vehicle Type         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Matos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)	Autos:	68.46	2.90		-0.51		-1.20	-	4.71	0.0	000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peak Hour         Leq Day         Leq Vehicle Type         Leq Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)	Medium Trucks:	79.45	-13.61		-0.49		-1.20	-	4.88	0.0	000	0.00
VehicleType         Leq Peak Hour         Leq Day         Leq Vehicle         Leq Night         Ldn         CNEL           Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)							-1.20	-	5.29	0.0	000	0.000
Autos:         69.6         67.5         65.8         62.2         69.8         70.           Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)				-								
Medium Trucks:         64.1         62.2         57.9         57.2         64.6         64.           Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)					eq Eve		Leq			-		
Heavy Trucks:         71.2         68.3         67.3         66.2         73.0         73.           Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)											-	
Vehicle Noise:         74.0         71.5         69.9         68.0         75.1         75.           Centerline Distance to Noise Contour (in feet)												
Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         55 dBA           Ldn:         146         314         677         1,455												
TO dBA         65 dBA         60 dBA         55 dBA           Ldn:         146         314         677         1,458				1.5		09.9		00.0		15.		15.4
Ldn: 146 314 677 1,459	Centerline Distanc	e to Noise Co	ontour (in feet)		70 dF	RA .	65	dBA	6	0 dBA	55	dBA
				dn	, o uL		001					
												,
			01					001		. 14		1,000

FHWA-RD-77-108 HIGHWAY N	ISE PREDICTION MODEL (9/12/2021)								
Scenario: OYC Road Name: Alessandro Blvd. Road Segment: w/o Day St.	Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 36,990 vehicles	Autos: 15								
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 3,625 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 45 mph	Vehicle Mix								
Near/Far Lane Distance: 82 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%								
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%								
Centerline Dist. to Barrier: 67.0 feet									
Centerline Dist. to Observer: 67.0 feet	Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet	Autos: 0.000								
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297								
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 53.226								
Left View: -90.0 degrees	Medium Trucks: 53.059								
Right View: 90.0 degrees	Heavy Trucks: 53.076								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dista	ce Finite Road Fresnel Barrier Atten Berm Atten								
Autos: 68.46 3.49	-0.51 -1.20 -4.71 0.000 0.000								
Medium Trucks: 79.45 -12.83	-0.49 -1.20 -4.88 0.000 0.000								
Heavy Trucks: 84.25 -10.53	-0.49 -1.20 -5.29 0.000 0.000								
Unmitigated Noise Levels (without Topo and barrier	ttenuation)								
	eq Evening Leq Night Ldn CNEL								
Autos: 70.2 68.1	66.4 62.8 70.4 70.8								
Medium Trucks: 64.9 63.0	58.7 58.0 65.4 65.6								
Heavy Trucks: 72.0 69.1	68.1 67.0 73.7 74.0								
Vehicle Noise: 74.7 72.2	70.7 68.8 75.8 76.1								
Centerline Distance to Noise Contour (in feet)									
	70 dBA 65 dBA 60 dBA 55 dBA								
	163 352 757 1,632								
Ldn: CNEL:	172 371 798 1.720								

	FHWA-RI	D-77-108 HIGH	IWAY N	OISE	PREDIC	TION N	IODEL (	9/12/20	021)				
Road Nam	io: OYCP e: Alessandro nt: w/o Day St						Name: lumber:		Campus Up	oper Plat	e		
SITE	SPECIFIC IN	IPUT DATA							L INPUT	S			
Highway Data				S	ite Cond	ditions	(Hard =	10, Sc	oft = 15)				
Average Daily	Traffic (Adt):	38,321 vehicl	es					Autos:	15				
Peak Hour	Percentage:	9.80%			Med	dium Tr	ucks (2 A	Axles):	15				
Peak H	our Volume:	3,755 vehicle	s		Hea	avy Tru	cks (3+ A	Axles):	15				
Ve	hicle Speed:	45 mph		v	ehicle N	lix							
Near/Far La	ne Distance:	82 feet		-		cleType		Dav	Evening	Night	Daily		
Site Data								71.9%	•	15.9%	,		
Rai	rier Heiaht:	0.0 feet			Medium Trucks: 75.3% 7.0% 17.7% 2.1								
Barrier Type (0-W		0.0			H	leavy T	rucks:	60.4%	12.0%	27.6%	3.60%		
Centerline Dis	. ,	67.0 feet			aiaa Ca	uree E	levation	n (in fe	ant)				
Centerline Dist.	to Observer:	67.0 feet		IN	uise su	Auto		000	el)				
Barrier Distance	to Observer:	0.0 feet			Mediur			297					
Observer Height (	Above Pad):	5.0 feet				y Truck		004	Grade Ad	iustment	0.0		
Pa	ad Elevation:	0.0 feet											
	ad Elevation:	0.0 feet		L	ane Equ		t Distand		feet)				
1	Road Grade:	0.0%				Auto							
	Left View:	-90.0 degre			Mediun								
	Right View:	90.0 degre	es		Heav	y Truck	s: 53.	076					
FHWA Noise Mode	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresh	el	Barrier Atte	en Ber	m Atten		
Autos:	68.46	3.65		-0.51		-1.20		-4.71	0.0	000	0.00		
Medium Trucks:	79.45			-0.49		-1.20		-4.88		000	0.00		
Heavy Trucks:	84.25	-10.53		-0.49		-1.20		-5.29	0.0	000	0.00		
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	ation)								
VehicleType	Leq Peak Ho	ur Leq Da	V L	Leq Ev	ening	Leq	Night		Ldn	C	NEL		
Autos:	70	).4	68.3		66.6		63.0	)	70.5	5	71.		
Medium Trucks:		1.9	63.0		58.7		58.0		65.4		65.		
Heavy Trucks:		2.0	69.1		68.1		67.0		73.7		74.		
Vehicle Noise:	74	1.8	72.3		70.7		68.8	3	75.8	3	76.		
Centerline Distand	e to Noise C	ontour (in feel	t)										
				70 di	BA	65	dBA	6	60 dBA	55	dBA		
			Ldn:		164		354		763		1,643		
			NEL:		173		373		804		1.733		

Wednesday, September 28, 2022

	FHWA-RI	0-77-108 HIGH	WAY	NOISE	PREDIC								
	io: HY ie: Alessandro nt: w/o Day St.						Name: \ umber: 1		Campus Up	per Plat	e		
	SPECIFIC IN	IPUT DATA			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)								
Highway Data					Site Con	ditions	(Hard =	10, So	oft = 15)				
Average Daily		43,210 vehicle	s					Autos:					
	Percentage:	9.80%					ıcks (2 A						
	lour Volume:	4,235 vehicles	3		He	avy Truc	cks (3+ A	xles):	15				
	hicle Speed:	45 mph			Vehicle I	/ix							
Near/Far La	ne Distance:	82 feet			Vehi	cleType		Day	Evening	Night	Daily		
Site Data						/	Autos:	71.9%	12.2%	15.9%	94.08%		
Ba	rrier Height:	0.0 feet			Me	edium Ti	ucks:	75.3%	7.0%	17.7%	2.20%		
Barrier Type (0-W		0.0			F	leavy Ti	ucks:	60.4%	12.0%	27.6%	3.73%		
Centerline Di	st. to Barrier:	67.0 feet		H	Noise So	urco Fl	ovations	in f	oot)				
Centerline Dist.	to Observer:	67.0 feet		f	10/30 00	Auto							
Barrier Distance	to Observer:	0.0 feet			Modiu	n Truck	. 0.0	97					
Observer Height	Above Pad):	5.0 feet				y Truck			Grade Adj	ustment	0.0		
P	ad Elevation:	0.0 feet											
	ad Elevation:	0.0 feet		1	Lane Equ				feet)				
	Road Grade:	0.0%				Auto							
	Left View:	-90.0 degree				n Truck							
	Right View:	90.0 degree	es		Heav	y Truck	s: 53.0	076					
FHWA Noise Mod	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite		Fresn	e/	Barrier Atte	en Ber	rm Atten		
Autos:	68.46	4.17		-0.5		-1.20		-4.71	0.0		0.00		
Medium Trucks:	79.45	-12.15		-0.4	-	-1.20		-4.88	0.0		0.00		
Heavy Trucks:	84.25	-9.86		-0.4	9	-1.20		-5.29	0.0	00	0.00		
Unmitigated Nois													
VehicleType	Leq Peak Hou			Leq E	vening	Leq	Night		Ldn		NEL		
Autos:	70		68.8		67.1		63.5		71.1		71.		
Medium Trucks:	65		63.7		59.4		58.6		66.0		66.		
Heavy Trucks:	72		69.8		68.8		67.7		74.4		74.		
Vehicle Noise:	75		72.9		71.3		69.4		76.5		76.		
Centerline Distant	ce to Noise Co	ontour (in feet)	1	=0									
			L	70	dBA	65	dBA	(	50 dBA	55	dBA		
			Ldn:		181		390		840		1,810		
		CI	VEL:		191		411		886		1,908		

	FHWA-RI	D-77-108 HIGH	IWAY N	OISE	PREDIC	TION M	ODEL (9	/12/20	021)				
Road Nan	rio: HYP ne: Alessandro ent: w/o Day St				Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	IPUT DATA			NOISE MODEL INPUTS								
Highway Data				5	Site Cond	ditions	(Hard = 1	10, So	oft = 15)				
Average Daily	Traffic (Adt):	44,540 vehicl	es				A	lutos:	15				
Peak Hour	Percentage:	9.80%			Med	dium Tra	ucks (2 A	xles):	15				
Peak I	lour Volume:	4,365 vehicle	s		Hea	avy Truc	cks (3+ A	xles):	15				
Ve	ehicle Speed:	45 mph		1	Vehicle N	liv							
Near/Far La	ane Distance:	82 feet		-		cleType		Day	Evening	Night	Daily		
Site Data								71.9%	•	15.9%			
Ba	rrier Height:	0.0 feet			Me	dium Ti	ucks: 7	75.3%	7.0%	17.7%	2.139		
Barrier Type (0-V		0.0			н	leavy Ti	ucks: 0	50.4%	12.0%	27.6%	3.61%		
	ist. to Barrier:	67.0 feet		,	Noise So	urce Fl	evations	(in fe	et)				
Centerline Dist.	to Observer:	67.0 feet		Ē		Auto							
Barrier Distance	to Observer:	0.0 feet			Mediun		. 0.0						
Observer Height	(Above Pad):	5.0 feet				v Truck		04	Grade Adj	ustment.	0.0		
-	ad Elevation:	0.0 feet						- -	-				
	ad Elevation:	0.0 feet		L	Lane Equ				feet)				
	Road Grade:	0.0%				Autos							
	Left View:	-90.0 degre			Mediun								
	Right View:	90.0 degre	es		Heavy	y Truck:	s: 53.0	76					
FHWA Noise Mod	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite I	Road	Fresne	el i	Barrier Atte	en Ber	m Atten		
Autos:		4.31		-0.51		-1.20		4.71	0.0		0.00		
Medium Trucks:				-0.49		-1.20		4.88	0.0		0.00		
Heavy Trucks:	84.25	-9.86		-0.49	9	-1.20	-	5.29	0.0	00	0.00		
Unmitigated Nois													
VehicleType	Leq Peak Hou			.eq Ev	vening	Leq	Night		Ldn		VEL		
Autos:		.1	68.9		67.2		63.6		71.2		71.		
Medium Trucks:		5.6	63.7		59.4		58.6		66.0		66.		
Heavy Trucks:		2.7	69.8		68.8		67.7		74.4		74.		
	75	5.4	72.9		71.4		69.5		76.5		76.		
Vehicle Noise:													
Centerline Distan		ontour (in feel	)										
		ontour (in feel		70 a		65	dBA	6	0 dBA	55	dBA		
			) Ldn: NEL:	70 a	dBA 182 192	65	dBA 392 414	6	0 dBA 845 891	55	dBA 1,821 1,920		

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)
Scenario: E Road Name: Cactus Av. Road Segment: e/o Meridian Pkwy.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 19,011 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 1,863 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 45 mph	Vehicle Mix
Near/Far Lane Distance: 42 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Centerline Dist. to Barrier: 60.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 60.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2,297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 56.427
Left View: -90.0 degrees	Medium Trucks: 56.270
Right View: 90.0 degrees	Heavy Trucks: 56.285
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Dista	
Autos: 68.46 0.60	-0.89 -1.20 -4.69 0.000 0.000
Medium Trucks: 79.45 -15.72	-0.87 -1.20 -4.88 0.000 0.000
Heavy Trucks: 84.25 -13.42	-0.87 -1.20 -5.34 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier	,
	eq Evening Leq Night Ldn CNEL
Autos: 67.0 64.8	63.2 59.5 67.1 67.6
Medium Trucks: 61.7 59.7	55.4 54.7 62.1 62.3
Heavy Trucks:         68.8         65.9           Vehicle Noise:         71.4         68.9	64.9 63.7 70.5 70.8 67.4 65.5 72.5 72.9
	67.4 65.5 72.5 72.5
Centerline Distance to Noise Contour (in feet)	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	70 dBA         65 dBA         60 dBA         55 dBA           88         190         410         884
CNEL:	93 201 433 932
GIVEL.	35 201 455 952

Scenario: E	. D				Drainat	Nome	Noot (	Compus Ll	aner Diet				
Road Name: C						wame: w umber: 1		Campus Up	pper Plati	5			
Road Name: C Road Segment: e/		7407			JUD NI	in iber:	+004						
		,							_				
Highway Data	CIFIC INPU			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffi	in (Adt): 25	724 vehicles		0.10 00.11	10000		Autos:	15					
Peak Hour Perc		80%		Mer	dium Tru			15					
Peak Hour \	•	00 % 01 vehicles			avy Truc			15					
Vehicle		45 mph	Ļ										
Near/Far Lane Di		42 feet	-	Vehicle N			D	<b>E</b> uracian	Market	Deile			
Site Data				veni	cleType		Day 71.9%	Evening 12.2%	Night	Daily 91.969			
				Me	dium Tr		71.9% 75.3%		17.7%				
Barrier	•	0.0 feet			leavy Tr		75.3% 60.4%		27.6%				
Barrier Type (0-Wall, 1 Centerline Dist. to	,	0.0 0.0 feet							21.070	0.07			
Centerline Dist. to Ol		0.0 feet	_	Noise So				eet)					
Barrier Distance to Ol		0.0 feet			Autos		000						
Observer Height (Abov		5.0 feet			n Trucks		297						
	,	0.0 feet		Heav	y Trucks	: 8.0	004	Grade Ad	ustment.	0.0			
Road El	evation:	0.0 feet		Lane Equ	iivalent	Distanc	e (in i	feet)					
Road	Grade: 0.	0%			Autos	: 56.4	127						
Le	ft View: -9	0.0 degrees			n Trucks								
Rigi	ht View: 9	0.0 degrees		Heav	y Trucks	: 56.2	285						
FHWA Noise Model Ca	lculations												
VehicleType R	EMEL Tra	affic Flow D	istance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten			
Autos:	68.46	3.24	-0.8		-1.20		-4.69		000	0.00			
Medium Trucks:	79.45	-15.72	-0.8		-1.20		-4.88		000	0.00			
Heavy Trucks:	84.25	-8.03	-0.8	7	-1.20		-5.34	0.0	000	0.00			
Unmitigated Noise Lev				<u> </u>			_						
	Peak Hour	Leq Day		vening	Leq I			Ldn		VEL			
Autos:	69.6	67.5		65.8		62.2		69.8		70			
Medium Trucks: Heavy Trucks:	61.7 74.2	59.7 71.3		55.4 70.2		54.7 69.1		62.1 75.9		62. 76.			
Vehicle Noise:	74.2	71.3		70.2		70.0		75.5		76.			
				/1./		70.0		11.	,				
Centerline Distance to	Noise Conto	ur (in teet)	70	dBA	65 c	IRA	6	0 dBA	55	dBA			
		Ldn:		175	001	376		810		1.74			
		2011.		17.0		0,0		010		1,740			

Wednesday, September 28, 2022

FHWA	-RD-7	77-108 HIGH	VAY N	OISE	PREDIC	TION M	ODEL (9	/12/2	021)		
Scenario: EA				_		Project	Name: V	Vest (	Campus Up	per Pla	ate
Road Name: Cactus	Av.					Job N	umber: 1	4064			
Road Segment: e/o Mei	idian F	Pkwy.									
SITE SPECIFIC	INP	UT DATA								3	
Highway Data					Site Cond	ditions			,		
Average Daily Traffic (Ad	t): 21	1,838 vehicles	6					Autos:			
Peak Hour Percentag	e: 9	9.80%					ıcks (2 A	/			
Peak Hour Volum		,140 vehicles			Hea	avy Truc	cks (3+ A	xles):	15		
Vehicle Spee	d:	45 mph		F	Vehicle N	lix					
Near/Far Lane Distanc	e:	42 feet		ŀ	Vehi	cleType	1	Day	Evening	Night	Daily
Site Data						A	Autos:	71.9%		15.9%	6 94.08%
Barrier Heigh	ıt:	0.0 feet			Me	edium Tr	ucks:	75.3%	6 7.0%	17.79	6 2.20%
Barrier Type (0-Wall, 1-Bern		0.0			H	leavy Tr	ucks:	60.4%	6 12.0%	27.6%	6 3.73%
Centerline Dist. to Barrie	er:	60.0 feet		ŀ	Noise So	urce El	evations	(in f	eet)		
Centerline Dist. to Observe	er:	60.0 feet		F		Auto					
Barrier Distance to Observe	er:	0.0 feet			Mediun	n Trucks	. 0.0				
Observer Height (Above Pag	1):	5.0 feet				v Trucks		04	Grade Adj	ustmen	nt: 0.0
Pad Elevatio		0.0 feet		F				-			
Road Elevatio		0.0 feet		-	Lane Equ				feet)		
Road Grad		0.0%				Autos					
Left Vie		-90.0 degree				n Truck					
Right Vie	N:	90.0 degree	6		Heav	y Truck:	s: 56.2	285			
FHWA Noise Model Calculat											
VehicleType REMEL		raffic Flow	Dista		Finite		Fresne		Barrier Atte		erm Atten
	.46	1.20		-0.8		-1.20		4.69	0.0		0.00
	.45	-15.12		-0.8		-1.20		4.88	0.0		0.00
Heavy Trucks: 84	.25	-12.82		-0.8	37	-1.20		-5.34	0.0	00	0.00
Unmitigated Noise Levels (v											
VehicleType Leq Peak		Leq Day		.eq E	vening	Leq	Night		Ldn		CNEL
Autos:	67.6	-	5.4		63.8		60.1		67.7		68.3
Medium Trucks:	62.3		0.3		56.0		55.3		62.7		62.9
Heavy Trucks:	69.4		6.5		65.5		64.3		71.1		71.4
Vehicle Noise:	72.0	6	9.5		68.0		66.1		73.1		73.
Centerline Distance to Noise	e Cont	tour (in feet)						-			
				70	dBA	65 (	dBA		60 dBA	5	5 dBA
		-	.dn: EL:		97 102		209 220		450 475		970 1.022

Road Name: Cactus Av. Job Nu Road Segment: e/o Meridian Pkwy.	Name: \ umber: `		Campus U	pper Plat	e
					~
Highway Data Site Conditions (			L INPUT	S	
	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt): 38,551 vehicles	,	Autos:	15		
Peak Hour Percentage: 9.80% Medium Tru	ucks (2 A	Axles):	15		
Peak Hour Volume: 3,778 vehicles Heavy Truc	cks (3+ A	Axles):	15		
Vehicle Speed: 45 mph Vehicle Mix					
Near/Far Lane Distance: 42 feet Vehicle Type		Day	Evening	Night	Daily
		71.9%	-	15.9%	
Madium Tr		75.3%		17.7%	
Barrier Height: 0.0 feet		60.4%		27.6%	
Barner Type (0-Wall, T-Berli). 0.0	uchs.	00.470	12.070	27.070	0.047
Centerline Dist. to Barrier: 60.0 feet Noise Source Ele	evations	s (in fe	eet)		
Centerline Dist. to Observer: 60.0 feet Autos	s: 0.0	000			
Barrier Distance to Observer: 0.0 feet Medium Trucks	s: 2.2	297			
Observer Height (Above Pad): 5.0 feet Heavy Trucks	s: 8.0	004	Grade Ad	ljustment	: 0.0
Pad Elevation: 0.0 feet	Distant		( 4)		
Road Elevation: 0.0 feet Lane Equivalent Road Grade: 0.0% Autos			eel)		
1000 01000					
Right View: 90.0 degrees Heavy Trucks	s: 56.3	285			
FHWA Noise Model Calculations					
VehicleType REMEL Traffic Flow Distance Finite Road	Fresn	-	Barrier Att		rm Atten
Autos: 68.46 3.58 -0.89 -1.20		-4.69		000	0.00
Medium Trucks: 79.45 -15.12 -0.87 -1.20		-4.88		000	0.00
Heavy Trucks: 84.25 -7.84 -0.87 -1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)					
VehicleType Leq Peak Hour Leq Day Leq Evening Leq I			Ldn		NEL
Autos: 69.9 67.8 66.1	62.5		70.		70.
Medium Trucks: 62.3 60.3 56.0	55.3		62.		62.9
Heavy Trucks: 74.3 71.4 70.4	69.3		76.		76.4
Vehicle Noise: 75.9 73.2 71.9	70.3	5	77.:	2	77.
Centerline Distance to Noise Contour (in feet)	-10.4		0 -0 4		-10.4
70 dBA 65 d		6	0 dBA		dBA
Ldn: 181	389		839		1,807
CNEL: 190	410		883	5	1,903

	FHWA-RD	-77-108 HIGH	IWAY NO	ISE PREDI		IODEL (9	0/12/20	)21)		
Scenario Road Name Road Segmen	Cactus Av.	n Pkwy.				Name: \ lumber: 1		Campus Up	per Plate	•
SITE S	PECIFIC IN	PUT DATA						L INPUTS	;	
Highway Data				Site Co	nditions	(Hard =	10, So	ft = 15)		
Average Daily T	raffic (Adt):	21,888 vehicl	es				Autos:	15		
Peak Hour F	Percentage:	9.80%		M	ledium Tr	ucks (2 A	xles):	15		
Peak Ho	our Volume:	2,145 vehicle	s	h	leavy Tru	cks (3+ A	xles):	15		
Veh	icle Speed:	45 mph		Vehicle	Mix					
Near/Far Lan	e Distance:	42 feet			hicleType		Dav	Evenina	Niaht	Daily
Site Data							71.9%		15.9%	94.08%
Bar	ier Heiaht:	0.0 feet			Medium T	rucks:	75.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wa		0.0			Heavy T	rucks:	60.4%	12.0%	27.6%	3.73%
Centerline Dis		60.0 feet			· · _				-	
Centerline Dist. to		60.0 feet		Noise S	Source E			et)		
Barrier Distance to	o Observer:	0.0 feet			Auto		000			
Observer Height (A	bove Pad):	5.0 feet			um Truck		297	Ourseles Anti-		
	d Elevation:	0.0 feet		Hea	avy Truck	s: 8.0	004	Grade Adju	istment:	0.0
Roa	d Elevation:	0.0 feet		Lane E	quivalen	t Distanc	e (in f	eet)		
R	oad Grade:	0.0%			Auto	s: 56.4	127			
	Left View:	-90.0 degre	es	Medi	um Truck	s: 56.2	270			
	Right View:	90.0 degre	es	Hea	avy Truck	s: 56.2	285			
FHWA Noise Mode	Calculations	5								
VehicleType	REMEL	Traffic Flow	Distan	ce Finit	e Road	Fresn	-	Barrier Atte	n Berr	n Atten
Autos:	68.46	1.21		0.89	-1.20		-4.69	0.0		0.000
Medium Trucks:	79.45	-15.11		0.87	-1.20		-4.88	0.0		0.000
Heavy Trucks:	84.25	-12.81		0.87	-1.20		-5.34	0.0	00	0.000
Unmitigated Noise	Levels (witho	out Topo and	barrier a	tenuation)	)					
,1	eq Peak Hou			q Evening		Night		Ldn	CN	IEL
Autos:	67.		65.4	63.	-	60.1		67.7		68.2
				56.		55.3		62.7		62.9
Medium Trucks:	62.		60.3		-					
Heavy Trucks:	69.	.4	66.5	65.	5	64.3		71.1		
		.4			5					
Heavy Trucks:	69. 72.	.4 .1	66.5 69.6	65. 68.	5 0	64.3 66.1		71.1 73.1		73.5
Heavy Trucks: Vehicle Noise:	69. 72.	.4 .1	66.5 69.6	65. 68. 70 dBA	5 0 65	64.3 66.1 dBA		71.1 73.1	55	73.5 dBA
Heavy Trucks: Vehicle Noise:	69. 72.	.4 .1 Intour (in feet	66.5 69.6	65. 68.	5 0 65	64.3 66.1		71.1 73.1	55	71.4 73.5 dBA 971 1.024

FH	WA-RD-	77-108 HIGH	IVVAT	NUISE	PREDIC	TION	NODEL (	9/12/2	021)		
Scenario: OYC									Campus U	oper Plat	е
Road Name: Cact						Job I	lumber:	14064			
Road Segment: e/o N	leridian	Pkwy.									
SITE SPECI	FIC INF	PUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (	Adt): 3	8,601 vehicle	es					Autos:			
Peak Hour Percent		9.80%					rucks (2 )				
Peak Hour Volu		3,783 vehicle	s		Hei	avy Tru	icks (3+ /	Axles):	15		
Vehicle Sp		45 mph			Vehicle N	lix					
Near/Far Lane Dista	nce:	42 feet			Vehi	cleTyp	e	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	92.12
Barrier He	ight:	0.0 feet					rucks:	75.3%	7.0%	17.7%	1.25
Barrier Type (0-Wall, 1-Be	erm):	0.0			F	leavy 1	rucks:	60.4%	12.0%	27.6%	6.64
Centerline Dist. to Ba	rrier:	60.0 feet		ŀ	Noise So	urce F	levation	s (in fi	pet)		
Centerline Dist. to Obse	rver:	60.0 feet		ŀ		Auto		000	,		
Barrier Distance to Obse	rver:	0.0 feet			Mediur			297			
Observer Height (Above F	Pad):	5.0 feet				y Truci		D04	Grade Ad	iustment.	0.0
Pad Eleva		0.0 feet		-							
Road Eleva		0.0 feet		-	Lane Equ				feet)		
Road Gr		0.0%				Auto		427			
Left		-90.0 degree			Mediur			270			
Right \	lew:	90.0 degree	es		Heav	y Truci	(S.' 56.	285			
FHWA Noise Model Calcu	lations			1							
VehicleType REM	EL	Traffic Flow	Di	stance	Finite	Road	Fresr	iel	Barrier Att	en Ber	m Atten
Autos:	68.46	3.58		-0.8		-1.20		-4.69		000	0.00
Medium Trucks:	79.45	-15.11		-0.8		-1.20		-4.88		000	0.00
Heavy Trucks:	84.25	-7.84		-0.8	17	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels	(withou	ut Topo and	barri	ier atter	nuation)						
	ak Hour			Leq E	vening	Leq	Night		Ldn		VEL
Autos:	70.0		67.8		66.1		62.5		70.		70
Medium Trucks:	62.3		60.3		56.0		55.3		62.		62
Heavy Trucks:	74.3		71.4		70.4		69.3		76.		76
Vehicle Noise:	75.9	9	73.2		71.9		70.3	8	77.:	2	77
Centerline Distance to No	ise Con	ntour (in feet	)				-				-
			L	70	dBA	65	dBA		60 dBA		dBA
			Ldn:		181		390		839		1,80
			NEL:		190		410		884		1,904

Wednesday, September 28, 2022

FHWA	-RD-77-108	HIGHWA	Y NOISI	E PREDIC	TION MC	DEL (9/12	/2021)	
Scenario: HY					Project N	lame: Wes	st Campus Up	per Plate
Road Name: Cactus /	Av.				Job Nu	mber: 140	64	
Road Segment: e/o Meri	dian Pkwy.							
SITE SPECIFIC	INPUT D	ATA					DEL INPUTS	5
Highway Data				Site Con	ditions (l	lard = 10,	Soft = 15)	
Average Daily Traffic (Adt)	: 28,137 v	/ehicles				Auto	os: 15	
Peak Hour Percentage	: 9.80%			Me	dium True	cks (2 Axle	s): 15	
Peak Hour Volume	2,757 ve	ehicles		He	avy Truck	is (3+ Axle	s): 15	
Vehicle Speed	: 45 m	iph		Vehicle I	Aix			
Near/Far Lane Distance	: 42 fe	et			cleType	Day	/ Evening	Night Daily
Site Data					A	itos: 71.		15.9% 94.08%
Barrier Heigh	: 0.0 f	eet		Me	edium Tru	cks: 75.	3% 7.0%	17.7% 2.20%
Barrier Type (0-Wall, 1-Berm				ŀ	leavy Tru	cks: 60.4	4% 12.0%	27.6% 3.73%
Centerline Dist. to Barrie	r: 60.0 f	eet		Noise So	urce Ele	vations (ir	(feet)	
Centerline Dist. to Observe	r: 60.0 f	eet			Autos			
Barrier Distance to Observe	r: 0.0 f	eet		Modiu	n Trucks:	0.000		
Observer Height (Above Pad,	: 5.0 f	eet			v Trucks:		Grade Adii	ustment: 0.0
Pad Elevation	n: 0.0 f	eet						
Road Elevation	0.01	eet		Lane Equ		Distance (i	,	
Road Grade	. 0.070				Autos:			
Left View		degrees			n Trucks.	00.210		
Right View	·: 90.0 d	legrees		Heav	y Trucks	56.285		
FHWA Noise Model Calculati	ons							
VehicleType REMEL	Traffic F	low D	listance	Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos: 68.		2.30	-0.		-1.20	-4.6		
Medium Trucks: 79.		14.01	-0.		-1.20	-4.8		
Heavy Trucks: 84.	25 -	11.72	-0.	87	-1.20	-5.3	34 0.0	00 0.00
Unmitigated Noise Levels (w	ithout Topo	and barı	rier atte	nuation)				
VehicleType Leq Peak I		q Day		Evening	Leq N		Ldn	CNEL
Autos:	68.7	66.5		64.9		61.2	68.8	
Medium Trucks:	63.4	61.4		57.1		56.4	63.8	
Heavy Trucks:	70.5	67.6		66.6		65.4	72.2	
Vehicle Noise:	73.1	70.6	6	69.1		67.2	74.2	74.
	• • "	n foot)						
Centerline Distance to Noise	Contour (II	Theory						
Centerline Distance to Noise	Contour (II	Theory	70	dBA	65 d		60 dBA	55 dBA
Centerline Distance to Noise	Contour (II	Ldn.		<i>dBA</i> 115	65 d	BA 247	60 dBA 533	55 dBA 1,148

FHWA-R	D-77-108 HIG	HWAY	NOISE	PREDIC		IODEL (S	9/12/20	021)		
Scenario: HYP Road Name: Cactus Av Road Segment: e/o Meridi						Name: \ lumber: `		Campus Up	per Plate	9
SITE SPECIFIC I	NPUT DATA				N	IOISE N	IODE	L INPUTS	5	
Highway Data			5	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt):	44,850 vehic	les				,	Autos:	15		
Peak Hour Percentage:	9.80%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume:	4,395 vehicle	es		He	avy Tru	cks (3+ A	(xles)	15		
Vehicle Speed:	45 mph		1	/ehicle I	Nix					
Near/Far Lane Distance:	42 feet		F		cleType		Day	Evening	Night	Daily
Site Data							71.9%		15.9%	
Barrier Height:	0.0 feet			Me	edium T	rucks:	75.3%	7.0%	17.7%	1.38%
Barrier Type (0-Wall, 1-Berm):	0.0			ŀ	leavy T	rucks:	60.4%	12.0%	27.6%	6.23%
Centerline Dist. to Barrier:	60.0 feet		٨	loise Sa	urco F	evations	: (in fo	of)		
Centerline Dist. to Observer:	60.0 feet		-		Auto		000	.00		
Barrier Distance to Observer:	0.0 feet			Mediu	n Truck		297			
Observer Height (Above Pad):	5.0 feet				y Truck		004	Grade Adj	ustment:	0.0
Pad Elevation:	0.0 feet									
Road Elevation:	0.0 feet		L	ane Equ		t Distanc		feet)		
Road Grade:	0.0%				Auto					
Left View:	-90.0 degre				n Truck					
Right View:	90.0 degre	es		Heav	y Truck	s: 56.	285			
FHWA Noise Model Calculation	ns									
VehicleType REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Atte	n Beri	m Atten
Autos: 68.44	6 4.25	5	-0.89	9	-1.20		-4.69	0.0	00	0.000
Medium Trucks: 79.4			-0.87		-1.20		-4.88	0.0		0.000
Heavy Trucks: 84.2	5 -7.46	6	-0.87	7	-1.20		-5.34	0.0	00	0.000
Unmitigated Noise Levels (with			er atteni	uation)						
VehicleType Leq Peak Ho			Leq Ev	•	Leq	Night		Ldn		VEL
	0.6	68.5		66.8		63.2		70.8		71.2
	3.4	61.4		57.1		56.4		63.8		64.0
	4.7	71.8		70.8		69.7		76.4		76.7
Vehicle Noise: 7	6.4	73.7		72.4		70.7		77.6		78.0
Centerline Distance to Noise C	Contour (in fee	t)								
			70 d		65	dBA	6	i0 dBA	55	dBA
		Ldn:		194		418		901		1,941
	C	NEL:		204		440		949		2,044

FHWA-R	D-77-108 HIGHWAY	NOISE	PREDIC	TION MO	DEL (9/1	12/2021)	
Scenario: E Road Name: Cactus Av. Road Segment: w/o Elswor					lame: We mber: 14	est Campus Up 064	per Plate
SITE SPECIFIC II	NPUT DATA			NC	DISE MO	DEL INPUTS	3
Highway Data		5	Site Con	ditions (H	lard = 10	), Soft = 15)	
Average Daily Traffic (Adt):	26,874 vehicles				Au	tos: 15	
Peak Hour Percentage:	9.80%		Me	dium Truc	ks (2 Axi	les): 15	
Peak Hour Volume:	2,634 vehicles		He	avy Truck	's (3+ Axi	les): 15	
Vehicle Speed:	45 mph		/ehicle I	Aix			
Near/Far Lane Distance:	82 feet	H		cleType	Di	ay Evening	Night Daily
Site Data			1011			.9% 12.2%	15.9% 94.08%
Barrier Height:	0.0 feet		Me	edium Tru	cks: 75	5.3% 7.0%	17.7% 2.20%
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Tru	cks: 60	0.4% 12.0%	27.6% 3.73%
Centerline Dist. to Barrier:	67.0 feet	L		-			
Centerline Dist. to Observer:	67.0 feet	<u>'</u>	Voise So	urce Elev		,	
Barrier Distance to Observer:	0.0 feet			Autos:		-	
Observer Height (Above Pad):	5.0 feet			n Trucks:			
Pad Elevation:	0.0 feet		Heav	y Trucks:	8.00	4 Grade Adj	ustment: 0.0
Road Elevation:	0.0 feet	1	ane Equ	ivalent D	Distance	(in feet)	
Road Grade:	0.0%			Autos:	53.22	6	
Left View:	-90.0 degrees		Mediur	n Trucks:	53.05	9	
Right View:	90.0 degrees		Heav	y Trucks:	53.07	6	
FHWA Noise Model Calculation	ıs						
VehicleType REMEL	Traffic Flow Di	stance	Finite	Road	Fresnel		en Berm Atten
Autos: 68.46		-0.5		-1.20		.71 0.0	
Medium Trucks: 79.45		-0.49	-	-1.20		.88 0.0	
Heavy Trucks: 84.25	5 -11.92	-0.49	9	-1.20	-5	.29 0.0	0.000
Unmitigated Noise Levels (with							1 -
VehicleType Leq Peak Ho		Leq E		Leq N	•	Ldn	CNEL
	8.9 66.7		65.0		61.4	69.0	
	3.5 61.6		57.3		56.6	64.0	
	0.6 67.7 3.3 70.8		66.7 69.3		65.6 67.4	72.4	
			69.3		07.4	/4.4	4.8
Centerline Distance to Noise C	ontour (in feet)	70 c	(DA	65 dF	24	60 dBA	55 dBA
	Ldn:	700	132	05 UL	284	612	1,319
	CNEL:		132		284 300	645	1,319
	CNEL.		159		300	040	1,390

	FHWA-RD	0-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (	9/12/2	021)		
Scenari	o: E+P					Project	Name:	West 0	Campus U	oper Plat	e
	e: Cactus Av.					Job N	umber:	14064			
Road Segmer	t: w/o Elswort	h St.									
SITE S	SPECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				5	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	28,932 vehicle	es					Autos:	15		
Peak Hour	Percentage:	9.80%			Me	dium Tru	icks (2 )	Axles):	15		
Peak H	our Volume:	2,835 vehicles	S		He	avy Truc	:ks (3+)	Axles):	15		
	hicle Speed:	45 mph		N	/ehicle l	Mix					
Near/Far Lar	ne Distance:	82 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	lutos:	71.9%	12.2%	15.9%	94.299
Bar	rier Heiaht:	0.0 feet			M	edium Ti	ucks:	75.3%	7.0%	17.7%	2.049
Barrier Type (0-W		0.0			F	leavy Ti	ucks:	60.4%	12.0%	27.6%	3.679
Centerline Dis	. ,	67.0 feet			loise Sc	uree El	ovetien	a lin fi	n (1		
Centerline Dist.	to Observer:	67.0 feet		7	ioise sc	Auto:		000	eel)		
Barrier Distance t	to Observer:	0.0 feet			Madiu	m Truck:		297			
Observer Height (J	Above Pad):	5.0 feet				y Truck		297 004	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet			Tieav	y muck.	s. o.	004	Orade Au	usunen.	0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	ce (in i	feet)		
F	Road Grade:	0.0%				Auto:		226			
	Left View:	-90.0 degree	es			m Trucks		059			
	Right View:	90.0 degree	es		Heav	y Truck	s: 53.	076			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fresr	-	Barrier Att		m Atten
Autos:	68.46	2.43		-0.51		-1.20		-4.71		000	0.00
Medium Trucks:	79.45	-14.21		-0.49		-1.20		-4.88		000	0.00
Heavy Trucks:	84.25	-11.66		-0.49	)	-1.20		-5.29	0.0	000	0.00
Unmitigated Noise			<u> </u>							1	
	Leq Peak Hou			Leq Ev		Leq	Night		Ldn		VEL
Autos:	69		67.0		65.4		61.		69.	-	69
Medium Trucks:	63		61.6		57.3		56.0	-	64.		64
Heavy Trucks: Vehicle Noise:	70		68.0		67.0		65.9		72.		72
	73		71.1		69.5		67.0	5	74.	(	75.
Centerline Distanc	e to Noise Co	ontour (in feet,	)	70 d	DA	65	dBA	6	50 dBA	55	dBA
			Ldn:	70 a	BA 137	05 (	296 296				-
			NEL:		137		296 312		637		1,37
		CI	VEL:		145		312		671		1,446

Wednesday, September 28, 2022

FHWA	-RD-7	77-108 HIGH\	VAY	NOISE	E PREDIC	TION MO	DDEL (	9/12/2	021)		
Scenario: EA						Project I	Vame: \	Nest	Campus Up	oper Pla	te
Road Name: Cactus	Av.					Job Ni	mber:	14064			
Road Segment: w/o Elsv	vorth	St.									
SITE SPECIFIC	INP	UT DATA							L INPUT	S	
Highway Data					Site Con	ditions (	Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt	1: 31	0,870 vehicle	6				,	Autos:	15		
Peak Hour Percentage	e l	9.80%				dium Tru					
Peak Hour Volume	e: 3	,025 vehicles			He	avy Truc	ks (3+ A	Axles).	15		
Vehicle Speed	f:	45 mph		-	Vehicle I	<i>lix</i>					
Near/Far Lane Distance	e:	82 feet		-		cleType		Day	Evening	Night	Daily
Site Data						A	utos:	71.9%	6 12.2%	15.9%	94.08
Barrier Heigh	t	0.0 feet			Me	edium Tru	icks:	75.3%	6 7.0%	17.7%	2.209
Barrier Type (0-Wall, 1-Berm		0.0			ŀ	leavy Tru	icks:	60.4%	6 12.0%	27.6%	3.73%
Centerline Dist. to Barrie	r:	67.0 feet		-	Noise So	urce Ele	vation	s (in f	eet)		
Centerline Dist. to Observe	r:	67.0 feet		-		Autos		000			
Barrier Distance to Observe	r:	0.0 feet			Mediur	n Trucks		297			
Observer Height (Above Pad	):	5.0 feet				y Trucks		004	Grade Ad	iustmen	t: 0.0
Pad Elevation	n:	0.0 feet									
Road Elevation		0.0 feet		Ŀ	Lane Equ				feet)		
Road Grade		0.0%				Autos					
Left Viev		-90.0 degree				n Trucks		059			
Right Viev	<i>l</i> :	90.0 degree	6		Heav	y Trucks	53.	076			
FHWA Noise Model Calculati	ons										
VehicleType REMEL	7	Traffic Flow	Dis	tance	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos: 68	46	2.71		-0.5	51	-1.20		-4.71	0.0	000	0.00
Medium Trucks: 79	45	-13.61		-0.4	19	-1.20		-4.88	0.0	000	0.00
Heavy Trucks: 84	25	-11.32		-0.4	19	-1.20		-5.29	0.0	000	0.00
Unmitigated Noise Levels (w	ithou	t Topo and b	arrie	er atter	nuation)						
VehicleType Leq Peak I		Leq Day		Leq E	vening	Leq N			Ldn		NEL
Autos:	69.5	-	7.3		65.6		62.0		69.6	-	70.
Medium Trucks:	64.1	-	2.2		57.9		57.2		64.6		64.
Heavy Trucks:	71.2		8.3		67.3		66.2		73.0		73.
Vehicle Noise:	73.9	7	1.4		69.9		68.0	)	75.0	)	75.
	-	tour (in foot)									
Centerline Distance to Noise	Con	tour (in reet)									
Centerline Distance to Noise	Con	iour (in reet)		70	dBA	65 d	BA		60 dBA	55	5 dBA
Centerline Distance to Noise	Con		.dn:	70	<i>dBA</i> 145	65 d	BA 312		60 dBA 671 708		5 dBA 1,446

	FHWA-RD	0-77-108 HIGH	WAY N	IOISE P	PREDIC	TION M	ODEL (9/ <sup>.</sup>	12/20	21)		
Road Nan	rio: EAP ne: Cactus Av. ent: w/o Elswort	h St.					Name: W umber: 14		ampus Up	oper Plat	e
SITE	SPECIFIC IN	PUT DATA							. INPUTS	5	
Highway Data				Si	ite Cond	ditions (	Hard = 10	), Sof	ft = 15)		
Average Daily	Traffic (Adt):	32,928 vehicle	es				AL	itos:	15		
Peak Hour	Percentage:	9.80%			Med	dium Tru	icks (2 Ax	les):	15		
Peak I	our Volume:	3,227 vehicle	s		Hea	avy Truc	ks (3+ Ax	les):	15		
Ve	ehicle Speed:	45 mph		14	ehicle N	liv					
Near/Far La	ane Distance:	82 feet				cleType	0	av	Evening	Night	Daily
Site Data				_	venn			ay 1.9%	12.2%	15.9%	
				_	140	ہر dium Tr		5.3%	7.0%	17.7%	
	rrier Height:	0.0 feet				leavy Tr		5.3% ).4%	12.0%	27.6%	
Barrier Type (0-V	. ,	0.0				leavy II	UCKS. O	J.470	12.0%	27.070	3.00
	ist. to Barrier:	67.0 feet		No	oise So	urce Ele	evations (	'in fee	et)		
Centerline Dist.		67.0 feet				Autos	: 0.00	0			
Barrier Distance		0.0 feet			Mediun	n Trucks	2.29	7			
Observer Height	, ,	5.0 feet			Heav	y Trucks	8.00	4	Grade Adj	iustment.	0.0
	ad Elevation:	0.0 feet			<b>F</b>		Distance	C 6.	41		
	ad Elevation:	0.0 feet		Lā	ane Equ		Distance		eet)		
	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks		-			
	Right View:	90.0 degre	es		Heav	y Trucks	53.07	6			
FHWA Noise Mod	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	E	Barrier Atte	en Ber	m Atten
Autos:	68.46	2.99		-0.51		-1.20	-4	.71	0.0	000	0.00
Medium Trucks:	79.45	-13.61		-0.49		-1.20	-4	.88	0.0	000	0.00
Heavy Trucks:	84.25	-11.09		-0.49		-1.20	-5	.29	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq Eve		Leq I			Ldn		VEL
Autos:			67.6		65.9		62.3		69.9		70
Medium Trucks:			62.2		57.9		57.2		64.6		64
Heavy Trucks:		-	68.6		67.6		66.4		73.2		73
Vehicle Noise:	74	.2	71.7		70.1		68.2		75.2	2	75.
	ce to Noise Co	ntour (in feet	)								
Centerline Distan	ce to moise ou								) dBA	55	dBA
Centerline Distan			L	70 dE		65 0		00			
Centerline Distan			Ldn: NEL:	70 dE	150 158	00 0	323 340	00	695 733		1,491

FHWA-RD-77-108 HIGHWAY	NOISE	E PREDIC		IODEL (9	/12/20	021)		
Scenario: OYC Road Name: Cactus Av. Road Segment: w/o Elsworth St.				Name: N lumber: 1		Campus Up	per Plat	e
SITE SPECIFIC INPUT DATA			N	IOISE N	IODE	L INPUTS	3	
Highway Data		Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 36,990 vehicles					Autos:	15		
Peak Hour Percentage: 9.80%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume: 3,625 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed: 45 mph	-	Vehicle I	Niv					
Near/Far Lane Distance: 82 feet	ŀ		cleType		Dav	Evening	Night	Daily
Site Data		veni			71.9%	•	15.9%	
Barrier Height: 0.0 feet		Me	dium T	rucks:	75.3%	7.0%	17.7%	
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy T	rucks:	60.4%	12.0%	27.6%	
Centerline Dist. to Barrier: 67.0 feet	ļ							
Centerline Dist. to Observer: 67.0 feet	-	Noise So				et)		
Barrier Distance to Observer: 0.0 feet			Auto					
Observer Height (Above Pad): 5.0 feet			n Truck			~		
Pad Elevation: 0.0 feet		Heav	y Truck	s: 8.0	104	Grade Adj	ustment	: 0.0
Road Elevation: 0.0 feet	ľ	Lane Equ	iivalent	t Distanc	e (in f	eet)		
Road Grade: 0.0%	Ī		Auto	s: 53.2	26			
Left View: -90.0 degrees		Mediur	n Truck	s: 53.0	)59			
Right View: 90.0 degrees		Heav	y Truck	s: 53.0	)76			
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flow Dis	stance	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos: 68.46 3.49	-0.5	51	-1.20		4.71	0.0	00	0.000
Medium Trucks: 79.45 -12.83	-0.4	49	-1.20		4.88	0.0	00	0.000
Heavy Trucks: 84.25 -10.53	-0.4	49	-1.20		-5.29	0.0	00	0.000
Unmitigated Noise Levels (without Topo and barrie	er attei	nuation)						
VehicleType Leq Peak Hour Leq Day	Leq E	vening	Leq	Night		Ldn		NEL
Autos: 70.2 68.1		66.4		62.8		70.4		70.8
Medium Trucks: 64.9 63.0		58.7		58.0		65.4		65.6
Heavy Trucks: 72.0 69.1		68.1		67.0		73.7		74.0
Vehicle Noise: 74.7 72.2		70.7		68.8		75.8		76.1
Centerline Distance to Noise Contour (in feet)								
	70	dBA	65	dBA	6	0 dBA	55	dBA
Ldn:		163		352		757		1,632
CNEL:		172		371		798		1,720

Average Daily Traffic (Adt):         39,048 vehicles         Autos:         15           Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         3.827 vehicles         Medium Trucks (2 Axles):         15           Vehicle Speed:         45 mph         Heavy Trucks (3+ Axles):         15           Vehicle Speed:         45 mph         Vehicle Type         Day         Evening         Night         Daily           Site Data         Autos:         7.0 feet         Medium Trucks:         7.5 %         7.0%         17.7%         2.08           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Darrier:         67.0 feet         Medium Trucks:         7.5 %         7.0%         17.7%         2.08           Barrier Dist. to Doserver:         0.0 feet         Molise Source Elevations (in feet)         Autos:         0.00         Medium Trucks:         5.3.26           Road Elevation:         0.0 feet         Autos:         68.46         3.73         -051         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.74         0.000         0.00           Medium Trucks:         79.45 <th>F</th> <th>HWA-RD-77</th> <th>-108 HIGHWAY</th> <th>' NOISE</th> <th>PREDIC</th> <th>TION N</th> <th>IODEL (</th> <th>9/12/2</th> <th>021)</th> <th></th> <th></th>	F	HWA-RD-77	-108 HIGHWAY	' NOISE	PREDIC	TION N	IODEL (	9/12/2	021)		
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adi): 39,048 vehicles         Autos: 15           Peak Hour Percentage: 9.80%         Autos: 15           Peak Hour Volume: 3,827 vehicles         Medium Trucks (2 Akles): 15           Vehicle Speed: 45 mph         Site Conditions (Hard = 10, Soft = 15)           Near/Far Lane Distance: 82 feet         Vehicle Mix           Barrier Height: 0.0 feet         Day Evening Night Daily           Barrier Jise Observer: 67.0 feet         Autos: 0.000           Barrier Dist. to Dbserver: 67.0 feet         Autos: 0.000           Barrier Jistance to Observer: 0.0 feet         Autos: 0.000           Road Grade: 0.0%         Left View: -90.0 degrees           Right View: 90.0 degrees         Finite Road         Fresnel           Right View: 90.0 degrees         Finite Road         Fresnel         Barrier Atten           VehicleType         Left View: -90.0 degrees         Finite Road         Fresnel         Barrier Atten           VehicleType         Left View: -90.5         0.51         -12.0         -4.71         0.000           Medium Trucks: 53.059         Heavy Trucks: 53.059         Heavy Trucks: 53.059         Heavy Trucks: 53.059           VehicleType         Rematic Traffic Flow         Distance         Finite Road	Road Name: Ca	actus Av.	L.						Campus Up	per Plate	e
Average Daily Traffic (Adi):         39,048 vehicles         Autos:         15           Peak Hour Percentage:         9,80%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         3,827 vehicles         Medium Trucks (2 Axles):         15           Vehicle Speed:         45 mph         Heavy Trucks (3 + Axles):         15           Site Data         Autos:         74 Axles):         15           Barrier Height:         0.0 feet         Medium Trucks:         73,9%         72,0%         17,9%         92,2%         15,9%         94,3%           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         67,0 feet         Autos:         0.0%         Heavy Trucks:         80,04%         12.0%         27,6%         3,69'           Centerline Dist. to Deserver:         0.0 feet         Autos:         0.00         Medium Trucks:         53,226           Road Grade:         0.0%         Left View:         90.0 degrees         Autos:         53,226           FHWA Noise Model Calculations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         79,45         -12.83         -0.49         -1.	SITE SPEC	CIFIC INPU	T DATA			1	IOISE I	IODE	L INPUT	5	
Peak Hour Percentage:         9.80%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         3.827 vehicles         Heavy Trucks (3 + Axles):         15           Vehicle Speed:         45 mph         Vehicle Mix         Day         Evening         Night         Daily           Site Data         Autos:         71.9%         12.2%         15.9%         94.23           Barrier Height:         0.0 feet         Medium Trucks:         75.3%         7.0%         17.7%         2.08           Barrier Type (0-Wall, 1-Berm):         0.0         Feet         Medium Trucks:         75.3%         7.0%         17.7%         2.08           Barrier Dist. to Diserver:         67.0 feet         Moise Source Elevations (in feet)         Noise Source Elevations (in feet)         0.00           Centerline Dist. to Diserver:         0.0 feet         Medium Trucks:         53.059         Heavy Trucks:         53.059           Road Grade:         0.0 feet         Medium Trucks:         53.059         Heavy Trucks:         53.059           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Road Grade:         0.049         -1.20         -4.71 <t< th=""><th>Highway Data</th><th></th><th></th><th></th><th>Site Cond</th><th>ditions</th><th>(Hard =</th><th>10, Sc</th><th>oft = 15)</th><th></th><th></th></t<>	Highway Data				Site Cond	ditions	(Hard =	10, Sc	oft = 15)		
Peak Hour Volume:         3,827 vehicles Vehicle Speed:         Heavy Trucks (3+ Axles):         15           Vehicle Speed:         45 mph         Vehicle Mix         Vehicle Mix         Vehicle Mix           Site Data         Autos:         71.9%         12.2%         15.9%         94.23           Barrier Height:         0.0 feet         Medium Trucks:         71.9%         12.2%         15.9%         94.23           Barrier Type (0-Wall, 1-Berm):         0.0         Feet         Medium Trucks:         67.0 %         Heavy Trucks:         60.4%         12.0%         27.8%         3.69           Centerline Dist. to Dserver:         67.0 feet         Autos:         10.00         Medium Trucks:         2.297         Medium Trucks:         2.297         Medium Trucks:         2.297         Medium Trucks:         5.0 Get         Medium Trucks:         53.059         Heavy Trucks:         53.076         Dot         Dot	Average Daily Traffic	c (Adt): 39,	048 vehicles					Autos:	15		
Vehicle Speed: Near/Far Lane Distance:         45 mph 82 feet         Vehicle Type         Day         Evening         Night         Daily           Site Data         Autos: 71.9% 12.2% 15.9% 94.23         Medium Trucks: 75.3% 7.0% 17.7% 2.08           Barrier Type (0-Wall, 1-Berm):         0.0         Feet         Medium Trucks: 75.3% 7.0% 17.7% 2.08           Barrier Distance to Observer:         0.0 feet         Autos: 0.00         Medium Trucks: 7.2.297         Medium Trucks: 2.297         Medium Trucks: 53.226           Pad Elevation:         0.0 feet         Autos: 53.226         Medium Trucks: 53.059         Medium Trucks: 53.059           FHWA Noise Model Calculations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -5.29	Peak Hour Perce	entage: 9.	80%		Med	dium Tr	ucks (2 )	Axles):	15		
Near/Far Lane Distance:         82 feet         Vehicle Wix         Day         Evening         Night         Daily           Site Data         Autos:         71.9%         12.2%         15.9%         94.23           Barrier Height:         0.0 feet         Medium Trucks:         75.3%         7.0%         17.7%         2.0%           Barrier Type (O-Wall, 1-Berm):         0.0         If eavy Trucks:         60.4%         12.0%         17.7%         2.0%           Centerline Dist. to Dasriver:         67.0 feet         Moise Source Elevations:         0.00         17.7%         2.0%           Deserver Height (Above Pad):         5.0 feet         Noise Source Elevations:         0.00         Medium Trucks:         2.297           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade:         0.000         eavy Trucks:         53.059         Heavy Trucks:         53.076           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten         Noto           VehicleType         REMEL         Traffic Flow         Distance         Finit	Peak Hour V	olume: 3,8	27 vehicles		Hea	avy Tru	cks (3+ )	Axles):	15		
Near/Far Lane Distance:         82 feet           VehicleType         Day         Evening         Night         Daily           Site Data         Autos:         71.9%         12.2%         15.9%         94.23           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Diserver:         0.0         Noise Source Elevations (in feet)           Centerline Dist. to Doserver:         0.0 feet         Autos:         0.00           Barrier Distance to Observer:         0.0 feet         Autos:         0.00           Centerline Dist. to Doserver:         0.0 feet         Autos:         0.00           Road Elevation:         0.0 feet         Autos:         0.00           Road Elevation:         0.0 feet         Autos:         53.226           Road Grade:         0.0%         Left View:         90.0 degrees         Reduint Trucks:         53.059           FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.74         0.000         0.	Vehicle	Speed:	45 mph	ŀ	Vehicle N	lix					
Site Data         Autos:         71.9%         12.2%         15.9%         94.23           Barrier Height:         0.0 feet         Medium Trucks:         75.3%         7.0%         17.7%         2.08           Barrier Height:         0.0         Centerline Dist. to Barrier:         67.0 feet         Medium Trucks:         60.4%         12.0%         17.7%         2.08           Centerline Dist. to Barrier:         67.0 feet         Noise Source Elevations (in feet)         Autos:         0.000         Meium Trucks:         2.297         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Observer Height (Above Pad):         5.0 feet         Noise Source Elevations (in feet)         Autos:         53.059           Road Grade:         0.0 feet         Autos:         53.059         Heavy Trucks:         53.059           Right View:         90.0 degrees         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Autos:         79.45         -12.83         -0.49         -12.0         -4.71         0.000         0.00           Medium Trucks:         79.45         -10.34         -0.49         -12.0         -5.29         0.000         0.00           Muntigated Noise Levets (without Topo and barrier attenuautan	Near/Far Lane Di	stance:	82 feet	ŀ				Dav	Evenina	Niaht	Dailv
Barrier Type (IV-Wall, 1-Berm):         0.0 feet         Heavy Trucks:         60.4%         12.0%         27.6%         3.69           Centerline Dist. to Diserver:         67.0 feet         Autos:         0.00         Noise Source Elevations (in feet)         Autos:         0.00         Autos:         Autos:         0.00         Autos:         Auto	Site Data								12.2%	15.9%	94.23%
Barrier Type (0-Wall, 1-Berm):         0.0         Heavy Trucks:         60.4%         12.0%         27.6%         3.69'           Centerline Dist. to Desriver:         67.0 feet         Autos:         0.000         Noise Source Elevations (in feet)         Autos:         0.000         Medium Trucks:         22.97           Observer Height (Above Pad):         5.0 feet         Autos:         0.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         53.26         Autos:         53.26           Road Grade:         0.0%         Autos:         53.26         Autos:         53.26           FHWA Noise Model Calculations         VenicleType         RefMeL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -5.29         0.000         0.00           Unnitigated Noise Levels (without Top and barrier attenuation)         Leg Evening         Leg Night         Ldn         CNEL           VehicleType         Leg Day         Leg Evening         Leg Ni	Barrier H	leiaht:	0.0 feet		Ме	dium T	rucks:	75.3%	7.0%	17.7%	2.089
Centerline Dist. to Barrier:         67.0 feet           Centerline Dist. to Observer:         67.0 feet           Barrier Distance to Observer:         0.0 feet           Observer Height (Above Pad):         5.0 feet           Pad Elevation:         0.0 feet           Road Glevation:         0.0 feet           Road Glavet:         0.0 feet           Road Glavet:         0.0 feet           Road Glavet:         0.0 feet           Road Glavat:         0.0 feet           Road Glavat:         0.0 degrees           Redium Trucks:         53.059           Heavy Trucks:         53.059           Heavy Trucks:         53.076           FHWA Noise Model Calculations         Distance           VehicleType         REMEL         Traffic Flow         Distance           Autos:         68.46         3.73         -0.51         -1.20           Autos:         84.25         -10.34         -0.49         -1.20         -4.88         0.000         0.00           Medium Trucks:         84.25         -10.34         -0.49         -1.20         -5.29         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night					H	leavy T	rucks:	60.4%	12.0%	27.6%	3.69%
Centerline Dist. to Observer:         67.0 feet         Autos:         0.000           Barrier Distance to Observer:         0.0 feet         Autos:         2.297           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)           Road Grade:         0.0%         Autos:         53.226           Medium Trucks:         53.076         Medium Trucks:         53.076           FHWA Noise Model Calculations           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -5.29         0.000         0.00           Ummitigated Noise Levels (without Topo and barrier attenuation)         UenicleType         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6		,	7.0 feet	ŀ	Noiso So	urco E	lovation	r (in fr	ootl		
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         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Lane Kutos:         53.059         Heavy Trucks:         53.059           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -5.29         0.000         0.00           Untiligated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         74.9         72.4         70.9         68.0         76.0         76           Medium T	Centerline Dist. to Ob	server: 6	7.0 feet	ŀ	140/36 30				eel)		
Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.004         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         53.226         Medium Trucks:         53.059           FHWA Noise Model Calculations         90.0 degrees         Heavy Trucks:         53.076         Female           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.88         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         Use Levels (without Topo and barrier attenuation)         Use Levels (without Topo 363.0         56.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         65.4         <	Barrier Distance to Ob	server:	0.0 feet		Mediur						
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:         53.226           Left View:         -90.0 degrees         Medium Trucks:         53.059           Right View:         90.0 degrees         Medium Trucks:         53.076           FHWA Noise Model Calculations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.88         0.000         0.00           Medium Trucks:         79.45         -10.34         -0.49         -1.20         -5.29         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Usici Flore Context         Glore 70.6         71           Vehicle Type         Leg Peak Hour         Leg Aay         Leg Evening         Leg Night         Ldn         CNEL           Autos:         70.5         68.3         66.7 <td>Observer Height (Abov</td> <td>e Pad):</td> <td>5.0 feet</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Grade Ad</td> <td>ustment</td> <td>0.0</td>	Observer Height (Abov	e Pad):	5.0 feet						Grade Ad	ustment	0.0
Road Grade:         0.0%         Autos:         53.226           Left View:         -90.0 degrees         Medium Trucks:         53.059           Right View:         90.0 degrees         Medium Trucks:         53.059           FHWA Noise Model Calculations         Heavy Trucks:         53.076           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.88         0.000         0.00           Medium Trucks:         84.25         -10.34         -0.49         -1.20         -5.29         0.000         0.00           Umitigated Noise Levels (without Topo and barrier attenuation)         Ushicle Type         Leg Peak Hour         Leg Qay         Leg Evening         Leg Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Nois	Pad Ele	evation:	0.0 feet								
Left View:         -90.0 degrees         Medium Trucks:         53.059           Right View:         90.0 degrees         Heavy Trucks:         53.076           FHWA Noise Model Calculations         Medium Trucks:         53.076           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.88         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Reening         Leq Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         68.0         76.0         76           Centerline Distance to Noise Contour (in feet)				-	Lane Equ				feet)		
Right View:         90.0 degrees         Heavy Trucks:         53.076           FHWA Noise Model Calculations         Image: Calculation of the calculatis of the calculation o											
FHWA Noise Model Calculations         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.74         0.000         0.00           Medium Trucks:         79.45         -10.34         -0.49         -1.20         -5.29         0.000         0.00           Medium Trucks:         84.25         -10.34         -0.49         -1.20         -5.29         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)           -6.3.0         70.6         71           VehicleType         Leg Peak Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9			•								
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.88         0.000         0.00           Heavy Trucks:         84.25         -10.34         -0.49         -1.20         -5.29         0.000         0.00           Unmitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)	Righ	it view: 9	0.0 degrees		Heav	у ттиск	S. 53.	076			
Autos:         68.46         3.73         -0.51         -1.20         -4.71         0.000         0.00           Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.88         0.000         0.00           Heavy Trucks:         84.25         -10.34         -0.49         -1.20         -5.29         0.000         0.00           Umritigated Moise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         168         362         779         1,67	FHWA Noise Model Cal	culations									
Medium Trucks:         79.45         -12.83         -0.49         -1.20         -4.88         0.000         0.000           Heavy Trucks:         84.25         -10.34         -0.49         -1.20         -5.29         0.000         0.000           Unmitigated Noise Levels (without Topo and barrier attenuation)         -         -         -6.29         0.000         0.000           VehicleType         Leq Deak Hour         Leq Dev         Leq Reining         Leq Reining         Led         CNEL           Autos:         70.5         68.3         68.7         68.0         70.6         71           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Truck:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)							Fresr				
Heavy Trucks:         84.25         -10.34         -0.49         -1.20         -5.29         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         60.0         76.0         76.0           Centerline Distance to Noise Contour (in feet)											
Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)											
VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)	Heavy Trucks:	84.25	-10.34	-0.4	9	-1.20		-5.29	0.0	00	0.00
Autos:         70.5         68.3         66.7         63.0         70.6         71           Medium Trucks:         64.9         63.0         58.7         58.0         65.4         65           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         168         362         779         1,67					,						
Medium Trucks:         64.9         63.0         58.7         58.0         65.4         655           Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76.0           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         168         362         779         1,67				Leq E		Leq			-		
Heavy Trucks:         72.2         69.3         68.3         67.2         73.9         74           Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)											
Vehicle Noise:         74.9         72.4         70.9         69.0         76.0         76           Centerline Distance to Noise Contour (in feet)											
Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         168         362         779         1,67											
70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         168         362         779         1,67					70.9		09.0	,	70.0	,	70.
Ldn: 168 362 779 1,67	Centerline Distance to	Noise Conto	ur (in feet)	70	404	67	dB A		O dBA	57	d D A
			I da:	70		65	-	-		55	-

Wednesday, September 28, 2022

FHW	/A-RD	-77-108 HIGH	WAY N	NOISE	PREDIC	TION MC	DEL (9/1	12/2021)		
Scenario: HY						Project N	lame: We	est Campu	us Upper	Plate
Road Name: Cactu	s Av.					Job Nu	mber: 14	064		
Road Segment: w/o E	swort	h St.								
SITE SPECIF	IC IN	PUT DATA						DEL IN		
Highway Data					Site Con	ditions (l	Hard = 10	), Soft = 1	5)	
Average Daily Traffic (A	dt):	43,210 vehicle	s					tos: 15		
Peak Hour Percenta	ge:	9.80%					cks (2 Axl			
Peak Hour Volu	ne:	4,235 vehicles			He	avy Truck	(3+ Axl	les): 15		
Vehicle Spe		45 mph		ŀ	Vehicle I	Mix				
Near/Far Lane Distar	ice:	82 feet		ŀ		icleType	Da	ay Ever	ing Ni	ght Da
Site Data						A	itos: 71	.9% 12	.2% 1	5.9% 94.
Barrier Heig	nht.	0.0 feet			Me	edium Tru	cks: 75	5.3% 7	.0% 1	7.7% 2.
Barrier Type (0-Wall, 1-Ber		0.0			ŀ	leavy Tru	icks: 60	0.4% 12	.0% 2	7.6% 3.
Centerline Dist. to Ban	rier:	67.0 feet		ŀ	Noise So	ource Ele	vations (	in feet)		
Centerline Dist. to Obser	ver:	67.0 feet		ŀ		Autos		/		
Barrier Distance to Obser	ver:	0.0 feet			Mediur	n Trucks	0.00	-		
Observer Height (Above Pa	ad):	5.0 feet				v Trucks:			e Adiust	ment: 0.0
Pad Elevat	ion:	0.0 feet						· · · · ·		
Road Elevat		0.0 feet		-	Lane Equ			. /		
Road Gra		0.0%				Autos:		-		
Left Vi		-90.0 degree				n Trucks:		-		
Right Vi	ew:	90.0 degree	s		Heav	y Trucks.	53.07	6		
FHWA Noise Model Calcul	ations	5								
VehicleType REME		Traffic Flow	Dista	ance	Finite		Fresnel		er Atten	Berm At
	68.46	4.17		-0.5		-1.20		.71	0.000	0
	79.45	-12.15		-0.4		-1.20		.88	0.000	0
Heavy Trucks: 8	34.25	-9.86		-0.4	19	-1.20	-5	.29	0.000	0
Unmitigated Noise Levels	(with	out Topo and I	barrier	r atter	nuation)					
VehicleType Leq Pea				Leq E	vening	Leq N	•	Ldn		CNEL
Autos:	70		58.8		67.1		63.5		71.1	
Medium Trucks:	65		53.7		59.4		58.6		66.0	
Heavy Trucks:	72		59.8		68.8		67.7		74.4	
Vehicle Noise:	75	.4	72.9		71.3		69.4		76.5	
Centerline Distance to Noi	se Co	ntour (in feet)								
Centerline Distance to Noi	se Co			70	dBA	65 d		60 dBA		55 dBA
Centerline Distance to Noi	se Co		Ldn:	70	dBA 181 191	65 d	BA 390 411	60 dBA	840 886	55 dBA 1,

	FHWA-RD	-77-108 HIGH\	NAY NOIS	SE PREDIC	TION MO	DDEL (9/1:	2/2021)	
Road Nam	io: HYP ne: Cactus Av. nt: w/o Elswort	h St.				Vame: We Imber: 140	st Campus Up 164	per Plate
SITE	SPECIFIC IN	PUT DATA			N	DISE MO	DEL INPUTS	6
Highway Data				Site Con	ditions (	Hard = 10,	Soft = 15)	
Average Daily	Traffic (Adt):	45,267 vehicle	s			Aut	os: 15	
Peak Hour	Percentage:	9.80%		Me	dium Tru	cks (2 Axle	es): 15	
Peak H	lour Volume:	4,436 vehicles		He	avy Truc	ks (3+ Axle	es): 15	
Ve	hicle Speed:	45 mph		Vehicle	Mix			
Near/Far La	ne Distance:	82 feet			icleType	Da	y Evening	Night Daily
Site Data				Ven			.9% 12.2%	15.9% 94.21
					а edium Tri		.9% 12.2% .3% 7.0%	17.7% 2.10
	rrier Height:	0.0 feet			eaium Tri Heavy Tri		.3% 7.0%	27.6% 3.69
Barrier Type (0-W	. ,	0.0			heavy In	ICKS. 00	.470 12.070	27.0% 3.08
Centerline Di		67.0 feet		Noise So	ource Ele	vations (i	n feet)	
Centerline Dist.		67.0 feet			Autos	0.000	)	
Barrier Distance		0.0 feet		Mediu	m Trucks	2.297	,	
Observer Height (	,	5.0 feet		Heav	vy Trucks	8.004	Grade Adj	ustment: 0.0
	ad Elevation:	0.0 feet						
	ad Elevation:	0.0 feet		Lane Eq		Distance (	,	
1	Road Grade:	0.0%			Autos			
	Left View:	-90.0 degree			m Trucks			
	Right View:	90.0 degree	s	Heav	y Trucks	53.076	5	
FHWA Noise Mode	el Calculations	;						
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Berm Atte
Autos:	68.46	4.37	-0	0.51	-1.20	-4.	71 0.0	00 0.0
		10.15	-0	).49				
Medium Trucks:	79.45	-12.15	-0	J.49	-1.20	-4.	66 U.U	00 0.0
Medium Trucks: Heavy Trucks:	79.45 84.25	-12.15 -9.69		).49	-1.20 -1.20	-4. -5.		
	84.25	-9.69	-0	).49				00 0.0
Heavy Trucks: Unmitigated Noise VehicleType	84.25 e <b>Levels (witho</b> Leq Peak Hou	-9.69 <b>out Topo and k</b> r Leq Day	oarrier att	).49 enuation) Evening		-5. light	29 0.0 Ldn	00 0.0 CNEL
Heavy Trucks: Unmitigated Noise	84.25 e Levels (witho	-9.69 <b>out Topo and k</b> r Leq Day	-0-	).49 enuation)	-1.20	-5.	29 0.0	00 0.0
Heavy Trucks: Unmitigated Noise VehicleType	84.25 e Levels (without Leg Peak Hout 71. 65.	-9.69 <b>but Topo and L</b> r Leq Day 1 6 6 6	-C parrier att Leq 69.0 63.7	).49 enuation) Evening 67.3 59.4	-1.20 Leg N	-5. light 63.7 58.6	29 0.0 Ldn 71.3 66.0	00 0.0
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	84.25 e Levels (witho Leq Peak Hou 71.	-9.69 <b>but Topo and k</b> r Leq Day 1 6 6 6 9 7	-0 parrier att Leq 59.0 53.7 70.0	).49 enuation) Evening 67.3	-1.20 Leg N	-5. light 63.7	29 0.0 Ldn 71.3	00 0.0
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	84.25 e Levels (without Leg Peak Hout 71. 65.	-9.69 <b>but Topo and k</b> r Leq Day 1 6 6 6 9 7	-C parrier att Leq 69.0 63.7	).49 enuation) Evening 67.3 59.4	-1.20 Leg N	-5. light 63.7 58.6	29 0.0 Ldn 71.3 66.0	00 0.0
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	84.25 <b>e Levels (witho</b> Leq Peak Hou 71. 65. 72. 75.	-9.69 <b>but Topo and E</b> r Leq Day 1 6 6 9 7 6 7	-0 -0 -0 -0 -0 -0 -0 -0 -0 -0	0.49 enuation) Evening 67.3 59.4 69.0 71.5	-1.20	-5. light 63.7 58.6 67.8 69.6	29 0.0 Ldn 71.3 66.0 74.6 76.6	00 0.0
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	84.25 <b>e Levels (witho</b> Leq Peak Hou 71. 65. 72. 75.	-9.69 <b>but Topo and b</b> r Leq Day 1 6 9 7 6 7 ntour (in feet)	-0 -0 -0 -0 -0 -0 -0 -0 -0 -0	0.49 enuation) Evening 67.3 59.4 69.0 71.5 70 dBA	-1.20 Leg N	-5. light 63.7 58.6 67.8 69.6 BA	29 0.0 Ldn 71.3 66.0 74.6 76.6 60 dBA	00 0.0
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	84.25 <b>e Levels (witho</b> Leq Peak Hou 71. 65. 72. 75.	-9.69 <b>but Topo and b</b> r Leq Day 1 6 9 7 6 7 <b>ntour (in feet)</b>	-0 -0 -0 -0 -0 -0 -0 -0 -0 -0	0.49 enuation) Evening 67.3 59.4 69.0 71.5	-1.20	-5. light 63.7 58.6 67.8 69.6	29 0.0 Ldn 71.3 66.0 74.6 76.6	00 0.0

FHWA-RD-77-108 HIC	HWAY NO	ISE PREDIC	TION MO	ODEL (9	/12/202	21)		
Scenario: E Road Name: Orange Terrace Pkwy. Road Segment: e/o Trautwein Rd.				Vame: W Imber: 1		ampus Up	per Plat	•
SITE SPECIFIC INPUT DATA	1		N	OISE M	ODEL	INPUTS	6	
Highway Data		Site Con	ditions (	Hard = 1	10, Sof	t = 15)		
Average Daily Traffic (Adt): 8,884 vehi	cles			A	utos:	15		
Peak Hour Percentage: 9.80%		Me	dium Tru	cks (2 A	xles):	15		
Peak Hour Volume: 871 vehic	les	He	avy Truci	ks (3+ A)	xles):	15		
Vehicle Speed: 45 mph		Vehicle I	Mix					
Near/Far Lane Distance: 68 feet					Dav I	Evening	Night	Deilu
Site Data		Ven	icleType		71.9%	12.2%	15.9%	Daily 94.08%
			edium Tri		75.3%	7.0%	17.7%	2.20%
Barrier Height: 0.0 feet			Heavy Tru		5.3% 30.4%	12.0%	27.6%	3.73%
Barrier Type (0-Wall, 1-Berm): 0.0			icavy in	<i>ions.</i> (	10.470	12.070	27.070	3.7370
Centerline Dist. to Barrier: 55.0 feet		Noise Sc	ource Ele	vations	(in fee	et)		
Centerline Dist. to Observer: 55.0 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
Pad Elevation: 0.0 feet		Lano Ea	uivalent	Distance	o (in fo	of		
Road Elevation: 0.0 feet		Lane Eq	Autos			elj		
Road Grade: 0.0% Left View: -90.0 dea		Madiu	m Trucks					
			/y Trucks					
Right View: 90.0 deg	ees	near	ly muchs.	. 43.3	50			
FHWA Noise Model Calculations	1							
VehicleType REMEL Traffic Flow			Road	Fresne		arrier Atte		m Atten
Autos: 68.46 -2.7	-	0.80	-1.20		4.67	0.0		0.000
Medium Trucks: 79.45 -19.0		0.83	-1.20		4.87	0.0		0.000
Heavy Trucks: 84.25 -16.7	3	0.83	-1.20	-	5.38	0.0	00	0.000
Unmitigated Noise Levels (without Topo an	d barrier at	tenuation)						
VehicleType Leq Peak Hour Leq D		q Evening	Leq N	•	1	dn	÷.	IEL
Autos: 65.4	63.2	61.5		57.9		65.5		65.9
Medium Trucks: 60.1	58.1	53.8		53.1		60.5		60.7
Heavy Trucks: 67.2	64.3	63.3		62.1		68.9		69.2
Vehicle Noise: 69.8	67.3	65.8		63.9		70.9		71.3
Centerline Distance to Noise Contour (in fe							I	
		70 dBA	65 d		60	dBA	55	dBA
	Ldn:	63		136		294		634
	CNEL:	67		144		310		668

		77-108 HIGH		110101					· ·		
Scenario: E+P	-								Campus U	oper Plat	e
Road Name: Orange						Job I	Number:	14064			
Road Segment: e/o Trau	ltweir	n Ra.									
SITE SPECIFIC	INP	UT DATA			0.4				LINPUT	S	
Highway Data					Site Con	aitions					
Average Daily Traffic (Adt		8,884 vehicl	es					Autos.			
Peak Hour Percentage		9.80%					rucks (2				
Peak Hour Volume		871 vehicle	s		Hea	avy Tru	ıcks (3+ .	Axles).	15		
Vehicle Speed		45 mph		Ī	Vehicle N	lix					
Near/Far Lane Distance	9.	68 feet		ſ	Vehi	cleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	5 12.2%	15.9%	94.089
Barrier Heigh	t:	0.0 feet					Frucks:	75.3%	5 7.0%	17.7%	2.20
Barrier Type (0-Wall, 1-Berm	):	0.0			H	leavy T	Frucks:	60.4%	5 12.0%	27.6%	3.739
Centerline Dist. to Barrie	r:	55.0 feet		ł	Noise So	urce F	levation	s (in f	eet)		
Centerline Dist. to Observe	r:	55.0 feet		ŀ		Auto		000	/		
Barrier Distance to Observe	r:	0.0 feet			Mediun			297			
Observer Height (Above Pad	D:	5.0 feet				y Truck		004	Grade Ad	iustment	0.0
Pad Elevation		0.0 feet		-							
Road Elevation		0.0 feet		-	Lane Equ				feet)		
Road Grad		0.0%				Auto		.520			
Left Viev		-90.0 degre			Mediun			.316			
Right Viev	V:	90.0 degre	es		Heav	y Trucl	(S.' 43	.336			
FHWA Noise Model Calculat	ions										
VehicleType REMEL		Traffic Flow	Di	istance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos: 68	.46	-2.70		0.8	0	-1.20		-4.67	0.0	000	0.00
Medium Trucks: 79	.45	-19.02		0.8	3	-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 84	.25	-16.73		0.8	13	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Levels (w	vithou	it Topo and	barri	ier atter	nuation)						
VehicleType Leq Peak	Hour	Leq Day	/	Leq E	vening	Leq	Night		Ldn	C	VEL
Autos:	65.4		63.2		61.5		57.		65.		65
Medium Trucks:	60.1		58.1		53.8		53.		60.		60
Heavy Trucks:	67.2		64.3		63.3		62.		68.		69
Vehicle Noise:	69.8		67.3		65.8		63.	9	70.9	9	71
Centerline Distance to Noise	Con	tour (in feet	)								
				70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		63		136	6	294	ŀ	63
		0	NEL:		67		144		310		66

Wednesday, September 28, 2022

Scenar						Drojost *	lomo: V	Veet C	ampus Up	nor DI-4	~
	ie: Orange Ter	raco Pkwa				Job Nu			ampus op	рег ма	e
	nt: e/o Trautwe					300 140	inder. I	4004			
SITE	SPECIFIC IN					N		ODE		\$	
Highway Data		TOT DATA		5	Site Con	ditions (F				0	
Average Daily	Traffic (Adt):	10,205 vehicle	s				A	utos:	15		
Peak Hour	Percentage:	9.80%			Me	dium Truc	ks (2 A	xles):	15		
Peak H	lour Volume:	1,000 vehicles	3		He	avy Truck	is (3+ A	xles):	15		
Ve	hicle Speed:	45 mph			Vehicle I	Aix					
Near/Far La	ne Distance:	68 feet		F		cleType	1	Day	Evening	Night	Daily
Site Data				-				71.9%	•	15.9%	
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	icks:	75.3%	7.0%	17.7%	2.20
Barrier Type (0-W		0.0			F	leavy Tru	icks: 6	50.4%	12.0%	27.6%	3.73
Centerline Di	st. to Barrier:	55.0 feet		-	Voise So	urce Ele	vations	(in fo	of)		
Centerline Dist.	to Observer:	55.0 feet		· ·	10/30 00	Autos			01/		
Barrier Distance	to Observer:	0.0 feet			Madius	n Trucks:	0.0				
Observer Height (	Above Pad):	5.0 feet				v Trucks:			Grade Ad	iustment	.00
Pa	ad Elevation:	0.0 feet						•••			
Roa	ad Elevation:	0.0 feet		L	ane Equ	ivalent l			eet)		
1	Road Grade:	0.0%				Autos:		20			
	Left View:	-90.0 degree				n Trucks:	10.0				
	Right View:	90.0 degree	s		Heav	y Trucks:	43.3	36			
FHWA Noise Mode	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	el i	Barrier Att	en Ber	m Atter
Autos:	68.46	-2.10		0.80	0	-1.20		4.67	0.0	000	0.0
Medium Trucks:	79.45	-18.42		0.83	3	-1.20	-	4.87	0.0	000	0.0
Heavy Trucks:	84.25	-16.12		0.83	3	-1.20	-	5.38	0.0	000	0.0
Unmitigated Noise	e Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day		Leg Ev	/ening	Leq N	light		Ldn	C	NEL
Autos:	66		63.8		62.1		58.5		66.1		66
Medium Trucks:	60		58.7		54.4		53.7		61.1		61
Heavy Trucks:	67	-	64.9		63.9		62.7		69.5		69
Vehicle Noise:	70	.4	67.9		66.4		64.5		71.5	5	71
Centerline Distand	ce to Noise Co	ontour (in feet)									
				70 c	1BA	65 di	BA	6	0 dBA	55	dBA
			Ldn: VEL:		69 73		150 158		323 340		69 73

FHWA-RD-77-108 H									
Scenario: EAP				Project Na			ampus Up	per Plat	е
Road Name: Orange Terrace Pkwy.				Job Nun	nber: 14	064			
Road Segment: e/o Trautwein Rd.									
SITE SPECIFIC INPUT DAT	A						INPUT	5	
Highway Data		5	Site Con	ditions (H		· · ·	ft = 15)		
Average Daily Traffic (Adt): 10,205 vel	hicles					itos:	15		
Peak Hour Percentage: 9.80%				dium Truck			15		
Peak Hour Volume: 1,000 vehi	icles		He	avy Trucks	s (3+ Ax	les):	15		
Vehicle Speed: 45 mph	۱	1	/ehicle I	Nix					
Near/Far Lane Distance: 68 feet		F		cleType	Di	ay	Evening	Night	Daily
Site Data				Aut	os: 71	1.9%	12.2%	15.9%	94.08%
Barrier Height: 0.0 fee	at		Me	edium Truc	:ks: 75	5.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berm): 0.0	<i>.</i>		ŀ	leavy Truc	:ks: 60	0.4%	12.0%	27.6%	3.73%
Centerline Dist. to Barrier: 55.0 fee		1	Voise So	urce Elev	ations (	in fee	et)		
Centerline Dist. to Observer: 55.0 fee				Autos:	0.00	0	1		
Barrier Distance to Observer: 0.0 fee			Mediur	n Trucks:	2.29				
Observer Height (Above Pad): 5.0 fee			Heav	y Trucks:	8.00	4	Grade Ad	iustment.	0.0
Pad Elevation: 0.0 fee	et	-							
Road Elevation: 0.0 fee	et	1	.ane Equ	uivalent D			eet)		
Road Grade: 0.0%				Autos:	43.52				
Left View: -90.0 de	grees			n Trucks:	43.31	-			
Right View: 90.0 de	grees		Heav	y Trucks:	43.33	6			
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flo		stance	Finite		Fresnel		Barrier Atte		m Atten
	.10	0.80		-1.20		.67		000	0.00
Medium Trucks: 79.45 -18		0.83	-	-1.20		.87		000	0.00
Heavy Trucks: 84.25 -16		0.83	-	-1.20	-5	5.38	0.0	000	0.00
Unmitigated Noise Levels (without Topo a			,						
VehicleType Leq Peak Hour Leq		Leq Ev		Leq Nig			Ldn		VEL
Autos: 66.0 Medium Trucks: 60.7	63.8 58.7		62.1 54.4		58.5 53.7		66.1 61.1		66. 61.
	58.7 64.9		54.4 63.9		53.7 62.7		61.1 69.5		
									69. 71.
	67.9		66.4		64.5		71.5	)	71.
Centerline Distance to Noise Contour (in f	eet)	70 0	ID A	65 dB	4	6/	) dBA	55	dBA
	Ldn:	70 0	1BA 69	05 <i>a</i> B	A 150	00	) ава 323		ава 695
	CNEL:		69 73		150 158		323 340		733

FHWA-RD-77	-108 HIGHWAY	' NOISE	PREDIC		IODEL (S	9/12/20	21)		
Scenario: OYC Road Name: Orange Terrace Road Segment: e/o Trautwein F					Name: \ lumber: 1		ampus Up	per Plate	•
SITE SPECIFIC INPU	T DATA			N	IOISE N	IODE		3	
Highway Data			Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 10,	277 vehicles					Autos:	15		
Peak Hour Percentage: 9.	80%		Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volume: 1,0	07 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	45 mph	ŀ	Vehicle I	Mix					
Near/Far Lane Distance:	68 feet	ŀ		icleType		Dav	Evening	Night	Daily
Site Data			VCII			71.9%	12.2%	15.9%	94.08%
	0.0 feet		M	edium T	rucks:	75.3%	7.0%	17.7%	2.20%
•	0.0		/	leavy T	rucks:	60.4%	12.0%	27.6%	3.73%
	5.0 feet								
	5.0 feet	-	Noise So				et)		
	0.0 feet			Auto		000			
Observer Height (Above Pad):	5.0 feet			m Truck		297			
• ( )	0.0 feet		Heav	ry Truck	s: 8.0	004	Grade Adj	ustment:	0.0
Road Elevation:	0.0 feet	Ī	Lane Eq	uivalen	t Distanc	e (in f	eet)		
Road Grade: 0.	0%	Ī		Auto	s: 43.5	520			
Left View: -9	0.0 degrees		Mediu	m Truck	s: 43.3	316			
Right View: 9	0.0 degrees		Heav	ry Truck	s: 43.3	336			
FHWA Noise Model Calculations		1							
VehicleType REMEL Tra	affic Flow Di	stance	Finite	Road	Fresn	el i	Barrier Atte	en Ben	m Atten
Autos: 68.46	-2.07	0.8	30	-1.20		-4.67	0.0	00	0.000
Medium Trucks: 79.45	-18.39	0.8		-1.20		-4.87	0.0	00	0.000
Heavy Trucks: 84.25	-16.09	0.8	33	-1.20		-5.38	0.0	00	0.000
Unmitigated Noise Levels (without	Topo and barri	er atter	nuation)						
VehicleType Leq Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		IEL
Autos: 66.0	63.9		62.2		58.5		66.1		66.6
Medium Trucks: 60.7	58.8		54.4		53.7		61.1		61.4
Heavy Trucks: 67.8	64.9		63.9		62.7		69.5		69.8
Vehicle Noise: 70.5	68.0		66.4		64.5		71.6	i	71.9
Centerline Distance to Noise Conto	ur (in feet)								
		70	dBA	65	dBA	6	0 dBA	55	dBA
	Ldn:		70		150		324		698
	CNEL:		74		159		342		736

FHW	A-RD-7	7-108 HIGHW	AY N	IOISE	PREDIC	TION N	NODEL (	9/12/2	021)		
Scenario: OYCP Road Name: Orange Road Segment: e/o Tra							t Name: lumber:		Campus Up	oper Plat	е
SITE SPECIFI	C INP	UT DATA				I	NOISE	NODE		s	
Highway Data				5	Site Con	ditions	(Hard =	10, Se	oft = 15)		
Average Daily Traffic (Ad	<i>tt):</i> 10	),277 vehicles						Autos:	15		
Peak Hour Percentag	je: 9	9.80%			Me	dium Ti	rucks (2 )	Axles):	15		
Peak Hour Volun	ne: 1,	,007 vehicles			Hei	avy Tru	icks (3+ )	Axles):	15		
Vehicle Spee		45 mph		1	/ehicle N	lix					
Near/Far Lane Distant	e:	68 feet			Vehi	cleTyp	e	Day	Evening	Night	Daily
Site Data							Autos:	71.9%	12.2%	15.9%	94.08%
Barrier Heig	ht:	0.0 feet			Me	edium 1	rucks:	75.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berr		0.0			F	leavy 1	rucks:	60.4%	12.0%	27.6%	3.73%
Centerline Dist. to Barri	er:	55.0 feet			loise So	urco F	levation	e (in fi	aat)		
Centerline Dist. to Observ	er:	55.0 feet		-	10/30 00	Auto		000			
Barrier Distance to Observ	er:	0.0 feet			Mediur			297			
Observer Height (Above Pa	d):	5.0 feet				y Truck		004	Grade Ad	iustment	0.0
Pad Elevation		0.0 feet		-							
Road Elevation		0.0 feet		L	ane Equ		t Distan		feet)		
Road Grad		0.0%				Auto		520			
Left Vie Right Vie		-90.0 degrees 90.0 degrees			Mediur	n Truck y Truck		316 336			
rught vic		50.0 degrees			mour	,		000			
FHWA Noise Model Calcula											
VehicleType REME		raffic Flow	Dista		Finite		Fresr		Barrier Att		m Atten
	8.46	-2.07		0.80		-1.20		-4.67		000	0.00
	9.45	-18.39		0.83		-1.20		-4.87		000	0.00
Heavy Trucks: 8	4.25	-16.09		0.83	5	-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Levels (			-								
VehicleType Leq Peak		Leq Day	_	Leq Ev		Leq	Night		Ldn		VEL
Autos:	66.0	63			62.2		58.		66.1		66.
Medium Trucks:	60.7	58			54.4		53.		61.1		61.
Heavy Trucks: Vehicle Noise:	67.8 70.5	64	.9		63.9 66.4		62. 64.		69.5 71.6		69. 71
			.0		00.4		04.3	5	71.0	)	71.
Centerline Distance to Nois	e Cont	tour (in feet)		70 -	0.4				0 -0 4		-0.4
				70 d		65	dBA		50 dBA		dBA
		Lo CNE			70 74		150		324		698
		UNE	<u>.</u>		74		159		342		736

Wednesday, September 28, 2022

0-	in. 11)/					Design		N + -		DI 1	
Scenar		Dime.				Job Nu			Campus Up	oper Plat	e
	ne: Orange Ter nt: e/o Trautwe					JOD IVUI	nber.	14004			
				-				_		_	
	SPECIFIC IN	IPUT DATA			0.44 0					S	
Highway Data					Site Con	ditions (H		· ·	,		
Average Daily	, ,	18,352 vehicle	s					Autos:	15		
	Percentage:	9.80%				dium Truc			15		
	lour Volume:	1,798 vehicles	5		He	avy Truck	's (3+ A	(xles):	15		
	hicle Speed:	45 mph			Vehicle I	lix					
Near/Far La	ne Distance:	68 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						AL	itos:	71.9%	12.2%	15.9%	94.08
Ra	rrier Heiaht:	0.0 feet			Me	dium Tru	cks:	75.3%	7.0%	17.7%	2.20
Barrier Type (0-W		0.0			ŀ	leavy Tru	cks:	60.4%	12.0%	27.6%	3.73
Centerline Di	st. to Barrier:	55.0 feet			Noise So	urce Ele	vations	: (in fe	et)		
Centerline Dist.	to Observer:	55.0 feet		F	10.00 00	Autos:		000			
Barrier Distance	to Observer:	0.0 feet			Modiu	n Trucks:	0.0	297			
Observer Height	(Above Pad):	5.0 feet				v Trucks:		004	Grade Ad	iustment	.00
P	ad Elevation:	0.0 feet									
Ro	ad Elevation:	0.0 feet		1	Lane Equ	ivalent E	Distanc	e (in f	'eet)		
	Road Grade:	0.0%				Autos:		520			
	Left View:	-90.0 degree	'S			n Trucks:	10.1				
	Right View:	90.0 degree	s		Heav	y Trucks:	43.3	336			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atte
Autos:	68.46	0.45		0.8	-	-1.20		-4.67		000	0.0
Medium Trucks:	79.45	-15.87		0.8	-	-1.20		-4.87		000	0.0
Heavy Trucks:	84.25	-13.58		0.8	3	-1.20		-5.38	0.0	000	0.0
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq E	vening	Leq N			Ldn		NEL
Autos:	68		66.4		64.7		61.1		68.		69
Medium Trucks:	63		61.3		57.0		56.2		63.6		63
Heavy Trucks:	70	-	67.4		66.4		65.3		72.0		72
Vehicle Noise:	73	.0	70.5		68.9		67.0		74.1	1	74
Centerline Distan	ce to Noise Co	ontour (in feet)									
			[	70 0	dBA	65 dl		6	0 dBA		dBA
			Ldn:		103		221		477		1,02
			IEL:		108		233		503		

		77-108 HIGH										
Scenario: HYP										Campus U	oper Plat	e
Road Name: Orange							Job I	lumbe	: 14064			
Road Segment: e/o Trau	itwei	n Ka.			-							
SITE SPECIFIC	IN	PUT DATA				4- 0					S	
Highway Data					SI	te Cond	aitions	(Hard	= 10, So	,		
Average Daily Traffic (Adt		8,352 vehicle	es						Autos:			
Peak Hour Percentage		9.80%							2 Axles):			
Peak Hour Volume		1,798 vehicle	s			Hea	avy Tru	cks (3	+ Axles):	15		
Vehicle Speed		45 mph			Ve	ehicle N	lix					
Near/Far Lane Distance	9.1	68 feet			-	Vehi	cleType	9	Day	Evening	Night	Daily
Site Data								Autos:	71.9%	12.2%	15.9%	94.089
Barrier Heigh	f.	0.0 feet			1	Ме	dium 1	rucks:	75.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berm		0.0				н	leavy 1	rucks:	60.4%	12.0%	27.6%	3.739
Centerline Dist. to Barrie	r:	55.0 feet			N	nise So	urce F	levatio	ons (in fe	oet)		
Centerline Dist. to Observe	r:	55.0 feet					Auto		0.000			
Barrier Distance to Observe	r:	0.0 feet				Mediun			2.297			
Observer Height (Above Pad	):	5.0 feet					v Truck		8.004	Grade Ad	iustment	.00
Pad Elevation	1:	0.0 feet				neavy	y macr		0.004		,	
Road Elevation	1:	0.0 feet			Lá	ne Equ	iivalen	t Dista	nce (in i	feet)		
Road Grad	Ð.:	0.0%					Auto	s: 4	3.520			
Left View	V.	-90.0 degree	es			Mediun	n Truck	(S. 4	3.316			
Right View	V.:	90.0 degree	es			Heavy	y Truck	(S. 4	3.336			
FHWA Noise Model Calculat	ions				1							
VehicleType REMEL		Traffic Flow	D	istance		Finite I	Road	Fre	snel	Barrier Att	en Ber	m Atten
Autos: 68	.46	0.45		0	.80		-1.20		-4.67	0.0	000	0.00
Medium Trucks: 79	.45	-15.87		0	.83		-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 84	.25	-13.58		0	.83		-1.20		-5.38	0.0	000	0.00
Unmitigated Noise Levels (w			barr	ier atte	enu	ation)						
VehicleType Leq Peak				Leq	Eve	ening	Leq	Night		Ldn		NEL
Autos:	68.	-	66.4			64.7		-	1.1	68.		69.
Medium Trucks:	63.2	-	61.3			57.0		-	5.2	63.		63.
Heavy Trucks:	70.3	-	67.4			66.4		-	5.3	72.	-	72.
Vehicle Noise:	73.0	)	70.5			68.9		6	7.0	74.	1	74.
Centerline Distance to Noise	Cor	ntour (in feet	)	-				-				
				70	) dE		65	dBA		60 dBA		dBA
			Ldn:			103		2	21	477		1,028
			NEL			108			33	503		1.083

FHWA-RD-77-108	HIGHWAY N	NOISE	PREDIC	TION M	ODEL (9	/12/20:	21)		
Scenario: E Road Name: Van Buren Blvd. Road Segment: w/o Wood Rd.					Name: V Imber: 1		ampus Up	per Plat	e
SITE SPECIFIC INPUT D	ATA			N	OISE N	ODEL	INPUTS	3	
Highway Data			Site Cond	ditions (	Hard =	10, Sof	ť = 15)		
Average Daily Traffic (Adt): 32,691	vehicles				A	Autos:	15		
Peak Hour Percentage: 9.80%			Med	dium Tru	cks (2 A	xles):	15		
Peak Hour Volume: 3,204 V	ehicles		Hea	avy Truc	ks (3+ A	xles):	15		
Vehicle Speed: 50 r	nph	-	Vehicle N		-				
Near/Far Lane Distance: 42 f	eet	H				Dav	Evening	Night	Dailu
Site Data			venio	cleType		71.9%	12.2%	15.9%	Daily 94.08%
			Ma	A dium Tr		75.3%	7.0%	17.7%	2.20%
	feet			leavy Tr		60.4%	12.0%	27.6%	3.73%
Barrier Type (0-Wall, 1-Berm): 0.0				eavy III	uch3. 1	50.470	12.0%	27.070	3.7370
Centerline Dist. to Barrier: 60.0		1	Noise So	urce Ele	evations	(in fee	et)		
Centerline Dist. to Observer: 60.0				Autos	: 0.0	00			
	feet		Mediun	n Trucks	: 2.2	97			
	feet		Heavy	y Trucks	: 8.0	04 (	Grade Adj	ustment.	0.0
	feet	H	Lane Equ	ivalont	Dictore	o (in fr	of		
	feet	H	Lane Equ	Autos			el)		
Road Grade: 0.0% Left View: -90.0	d		Modium	n Trucks					
	degrees								
Right View: 90.0	degrees		Heavy	y Trucks	. 30.2	00			
FHWA Noise Model Calculations									
VehicleType REMEL Traffic	Flow Dista	ance	Finite I	Road	Fresne	e/ E	Barrier Atte	en Ber	m Atten
Autos: 70.20	2.50	-0.8		-1.20		4.69	0.0		0.000
	-13.82	-0.8		-1.20		4.88	0.0	00	0.000
Heavy Trucks: 85.38	-11.53	-0.8	7	-1.20		-5.34	0.0	00	0.000
Unmitigated Noise Levels (without Top	o and barrier	r atten	uation)						
		Leq E	vening	Leq I	•		Ldn		VEL
Autos: 70.6	68.5		66.8		63.2		70.8		71.2
Medium Trucks: 65.1	63.2		58.9		58.1		65.5		65.8
Heavy Trucks: 71.8	68.9		67.9		66.7		73.5		73.8
Vehicle Noise: 74.7	72.3		70.7		68.7		75.8		76.1
Centerline Distance to Noise Contour (	in feet)							I	
		70 0	dBA	65 a		60	) dBA	55	dBA
	Ldn:		146		314		676		1,455
	CNEL:		154		331		713		1,535

	FHWA-RD-77	-108 HIGHWA	Y NOISE	PREDIC	TION N	IODEL (	9/12/20	021)		
Scenario: E Road Name: \ Road Segment: <sub>V</sub>	/an Buren Blvd	L				Name: lumber:		Campus Up	oper Plat	e
SITE SPE	CIFIC INPU	T DATA			1	OISE	NODE		s	
Highway Data				Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Trat	fic (Adt): 34,0	586 vehicles					Autos:	15		
Peak Hour Per	centage: 9.	80%		Me	dium Tr	ucks (2 )	Axles):	15		
Peak Hour	Volume: 3,3	99 vehicles		He	avy Tru	cks (3+ )	Axles):	15		
Vehicle	e Speed:	50 mph	ŀ	Vehicle I	Niv					
Near/Far Lane D	Distance:	42 feet	ŀ		cleType	•	Dav	Evening	Night	Daily
Site Data						Autos:	71.9%		15.9%	
Barrio	·Height:	0.0 feet		Me	edium T	rucks:	75.3%	7.0%	17.7%	2.079
Barrier Type (0-Wall,		0.0		ŀ	leavy T	rucks:	60.4%	12.0%	27.6%	3.519
Centerline Dist. to	,	0.0 feet	-							
Centerline Dist. to C		0.0 feet	-	Noise So				eet)		
Barrier Distance to C	bserver:	0.0 feet		Marthur	Auto		000			
Observer Height (Abo	ve Pad):	5.0 feet			n Truck y Truck		297 004	Grade Ad	ustmont	0.0
Pad E	levation:	0.0 feet		Heav	у писк	s. o.	004	Graue Auj	usuneni	0.0
Road E	levation:	0.0 feet		Lane Equ	uivalen	t Distan	ce (in f	'eet)		
Roa	d Grade: 0.	0%			Auto	s: 56.	427			
L	eft View: -9	0.0 degrees			n Truck		270			
Rig	ght View: 9	0.0 degrees		Heav	y Truck	s: 56.	285			
FHWA Noise Model C			1	Т						
			istance	Finite		Fresr		Barrier Atte		m Atten
Autos:	70.20	2.77	-0.8	-	-1.20		-4.69		000	0.00
Medium Trucks:	81.00	-13.82	-0.8		-1.20 -1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-11.53	-0.8	1	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Le		Topo and barr	ier atter	nuation)						
	Peak Hour	Leq Day		vening	Leq	Night		Ldn		VEL
Autos:	70.9	68.7		67.1		63.4		71.0		71.
Medium Trucks:	65.1	63.2		58.9		58.1		65.5		65.
Heavy Trucks:	71.8	68.9		67.9		66.7		73.5		73.
Vehicle Noise:		72.4		70.8		68.8	5	75.9	,	76.
Centerline Distance to	o Noise Conto	ur (in feet)	70	dBA	65	dBA	6	0 dBA	FF	dBA
		Ldn:		ава 148	00	ава 318		<i>о ава</i> 685		ава 1.47
		CNEL:		148		318		723		1,475
		GIVEL.		150		330		123		1,007

Wednesday, September 28, 2022

FHWA-	RD-77-108 HIGH	WAY NO	ISE PREDIO	CTION MO	DEL (9/12	2021)					
Scenario: EA				Project N	lame: Wes	t Campus Up	per Plate				
Road Name: Van Bure				Job Nu	nber: 1406	4					
Road Segment: w/o Woo	d Rd.										
SITE SPECIFIC	INPUT DATA					EL INPUTS	6				
Highway Data			Site Cor	nditions (H	lard = 10,	Soft = 15)					
Average Daily Traffic (Adt):	37,552 vehicle	es			Auto	s: 15					
Peak Hour Percentage:	9.80%				ks (2 Axles	/					
Peak Hour Volume:	3,680 vehicle	s	He	eavy Truck	s (3+ Axles	s): 15					
Vehicle Speed:	50 mph		Vehicle	Mix							
Near/Far Lane Distance:	42 feet			nicleType	Day	Evening	Night Daily				
Site Data				Au	tos: 71.9	% 12.2%	15.9% 94.08				
Barrier Height:	0.0 feet		M	ledium Tru	cks: 75.3	% 7.0%	17.7% 2.20				
Barrier Type (0-Wall, 1-Berm).				Heavy Tru	cks: 60.4	% 12.0%	27.6% 3.73				
Centerline Dist. to Barrier.	60.0 feet		Noise S	ource Elev	ations (in	feet)					
Centerline Dist. to Observer.	60.0 feet			Autos:							
Barrier Distance to Observer.	0.0 feet		Mediu	m Trucks:	2.297						
Observer Height (Above Pad)	5.0 feet			vy Trucks:	8.004	Grade Adi	ustment: 0.0				
Pad Elevation:	0.0 1000										
Road Elevation:	0.0 1000		Lane Eq		)istance (i	n feet)					
Road Grade:	0.070			Autos:	56.427						
Left View:	00.0 409.0			m Trucks:	00.270						
Right View.	90.0 degree	es	Hea	vy Trucks:	56.285						
FHWA Noise Model Calculatio	ns		1								
VehicleType REMEL	Traffic Flow	Distand		Road	Fresnel	Barrier Atte	en Berm Atter				
Autos: 70.2	0 3.10	-	0.89	-1.20	-4.6	9 0.0	00 0.00				
Medium Trucks: 81.0	0 -13.22	-	0.87	-1.20	-4.8	8 0.0	00 0.00				
Heavy Trucks: 85.3	8 -10.92	-	0.87	-1.20	-5.3	4 0.0	00 0.00				
Unmitigated Noise Levels (wi	thout Topo and	barrier at	tenuation)								
VehicleType Leq Peak H			q Evening	Leq N	•	Ldn	CNEL				
		69.1	67.4		63.8	71.4					
		63.8	59.5		58.7	66.1					
		69.5	68.5		67.3	74.1					
Vehicle Noise:	75.3	72.9	71.3		69.3	76.4	76				
	Contour (in foot	)									
Centerline Distance to Noise	contour (in reet,				1						
Centerline Distance to Noise	contour (in reet,		70 dBA	65 dE		60 dBA	55 dBA				
Centerline Distance to Noise		Ldn:	70 dBA 160	65 dE	344	60 dBA 741	55 dBA 1,59				

	FHWA-RD	-77-108 HIGHV	VAY NO	ISE F	PREDIC	TION N	IODEL (	9/12/2	021)						
Road Name	Scenario: EAP Road Name: Van Buren Blvd. Road Segment: w/o Wood Rd.						Project Name: West Campus Upper Plate Job Number: 14064								
SITE S	PECIFIC IN	PUT DATA					IOISE N	IODE	L INPUT	s					
Highway Data				S	ite Cond	ditions	(Hard =	10, Sc	oft = 15)						
Average Daily 7	raffic (Adt):	39,547 vehicles						Autos:	15						
Peak Hour F	Percentage:	9.80%			Med	dium Tr	ucks (2 A	Axles):	15						
Peak Ho	our Volume:	3,876 vehicles			Hea	avy Tru	cks (3+ A	Axles):	15						
Veh	icle Speed:	50 mph		14	ehicle N	line									
Near/Far Lan	e Distance:	42 feet				cleType		Day	Evening	Night	Daily				
Site Data				_	venn			71.9%	•	15.9%					
				_	Ma	ر dium T		75.3%		17.7%					
	rier Height:	0.0 feet				leavy T		60.4%		27.6%					
Barrier Type (0-Wa	. ,	0.0				icavy i	ruchs.	00.470	12.070	21.070	0.0470				
Centerline Dis		60.0 feet		N	loise So	urce E	levation	s (in fe	eet)						
Centerline Dist. to Barrier Distance to		60.0 feet 0.0 feet				Auto	s: 0.	000							
					Mediun	n Truck	s: 2.	297							
Observer Height (A	d Elevation:	5.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	iustment	: 0.0				
	d Elevation: d Elevation:	0.0 feet 0.0 feet			ano Fai	iivələn	t Distand	o (in i	foot)						
	oad Grade:	0.0 reet			une Lyc	Auto		427	000						
~	Left View:	-90.0 degrees			Mediur			427 270							
	Right View:	90.0 degrees				y Truck		285							
FHWA Noise Mode	Calculations	5													
VehicleType	REMEL	Traffic Flow	Distand		Finite		Fresh		Barrier Att	en Ber	m Atten				
Autos:	70.20	3.34	-	0.89		-1.20		-4.69	0.0	000	0.000				
Medium Trucks:	81.00	-13.22	-	0.87		-1.20		-4.88	0.0	000	0.000				
Heavy Trucks:	85.38	-10.92		0.87		-1.20		-5.34	0.0	000	0.000				
Unmitigated Noise															
	Leq Peak Hou			q Eve	ening	Leq	Night		Ldn		NEL				
Autos:	71.		9.3		67.6		64.0		71.6		72.0				
Medium Trucks:	65.		3.8		59.5		58.7		66.		66.4				
Heavy Trucks:	72.		9.5		68.5		67.3		74.1		74.4				
Vehicle Noise:	75.		3.0		71.4		69.4	ł	76.5	0	76.8				
Centerline Distance	e to Noise Co	ntour (in feet)		70			-10.4		0 -0 4		-/0.4				
				70 dl		65	dBA	6	0 dBA		dBA				
		CN	dn:		162		348		750 791		1,615				
		CN	EL.		170		367		791		1,704				

	FHWA-RD	0-77-108 HIGH	WAY NO	SE PREDI	CTION M	ODEL (9/	12/2021)			
Road Nam	o: OYC e: Van Buren nt: w/o Wood F					Name: W umber: 14		pus Upp	er Plate	•
SITE	SPECIFIC IN	IPUT DATA			N	OISE M	ODEL IN	IPUTS		
Highway Data				Site Cor	nditions	(Hard = 1	0, Soft =	15)		
Average Daily	Traffic (Adt):	46,276 vehicle	s			A	utos: 1	15		
Peak Hour	Percentage:	9.80%		Me	edium Tru	icks (2 Ax	<i>les):</i> 1	15		
Peak H	our Volume:	4,535 vehicles		He	eavy Truc	:ks (3+ Ax	<i>les):</i> 1	15		
Vei	hicle Speed:	50 mph		Vehicle	Mix					
Near/Far Lar	ne Distance:	42 feet			nicleType	D	ay Eve	ening N	Vight	Daily
Site Data									15.9%	94.08%
Ba	rier Heiaht:	0.0 feet		N	ledium Tr	ucks: 7	5.3%	7.0%	17.7%	2.20%
Barrier Type (0-W		0.0			Heavy Tr	ucks: 6	0.4% 1	2.0%	27.6%	3.73%
Centerline Dis		60.0 feet								
Centerline Dist		60.0 feet		Noise S		evations	· /			
Barrier Distance		0.0 feet			Autos		-			
Observer Height (		5.0 feet			Im Trucks					
	ad Elevation:	0.0 feet		неа	vy Trucks	s: 8.00	)4 Gra	ide Adjus	siment:	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet)			
F	Road Grade:	0.0%			Autos	s: 56.42	27			
	Left View:	-90.0 degree	s	Mediu	im Trucks	s: 56.27	70			
	Right View:	90.0 degree	s	Hea	vy Trucks	s: 56.28	35			
FHWA Noise Mode	el Calculation:	s								
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresne	Barr	rier Atten	Berr	n Atten
Autos:	70.20	4.01		0.89	-1.20		1.69	0.00		0.000
Medium Trucks:	81.00	-12.31		0.87	-1.20		1.88	0.00		0.000
Heavy Trucks:	85.38	-10.02	-	0.87	-1.20	-8	5.34	0.00	0	0.000
Unmitigated Noise				,						
	Leq Peak Hou			e Evening		Night	Ldr		CN	IEL
Autos:	72		70.0	68.3		64.7		72.3		72.7
Medium Trucks:	66 73		54.7 70.4	60.4		59.6 68.2		67.0		67.3
Heavy Trucks: Vehicle Noise:	73		73.8	69.4 72.2		68.2 70.2		75.0		75.3
			J.0	12.2	-	10.2		11.3		11.0
Centerline Distanc	e to Noise Co	ontour (in feet)		70 dBA	65	dBA	60 dF	ва –	55 (	dBA
			dn:	183		395	50 0.	852		1,835
			IEL:	194		417		898		1,000
		-						200		.,000

	FHWA-RD-77	-108 HIGHWAY	NOISE	PREDIC		IODEL (	9/12/20	021)		
Scenario: Road Name: Road Segment:	Van Buren Blvd					Name: lumber:		Campus Up	oper Plat	e
SITE SP	ECIFIC INPU	T DATA			N	IOISE N	IODE	L INPUT	5	
Highway Data				Site Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily Tra	ffic (Adt): 48,2	271 vehicles					Autos:	15		
Peak Hour Pe	rcentage: 9.8	80%		Med	dium Tr	ucks (2 A	Axles):	15		
Peak Hour	Volume: 4,7	31 vehicles		Hea	avy Tru	cks (3+ A	Axles):	15		
Vehicl	e Speed:	50 mph	ŀ	Vehicle N	lix					
Near/Far Lane	Distance:	42 feet	ŀ		cleType		Dav	Evening	Night	Daily
Site Data							71.9%		15.9%	
Rarrio	r Height:	0.0 feet		Me	dium T	rucks:	75.3%	7.0%	17.7%	2.119
Barrier Type (0-Wall,		0.0		H	leavy T	rucks:	60.4%	12.0%	27.6%	3.57%
Centerline Dist. t	,	0.0 feet	-	N- : 0-			- (in f.	-41		
Centerline Dist. to C	Observer: 6	0.0 feet	ŀ	Noise So	Auto		s ( <i>In r</i> e 200	et)		
Barrier Distance to (	Observer:	0.0 feet		Mediur			297			
Observer Height (Abo	ove Pad):	5.0 feet			y Truck		207	Grade Ad	iustment	0.0
Pad E	Elevation:	0.0 feet							aounom	0.0
		0.0 feet		Lane Equ				'eet)		
		0%			Auto		427			
-		0.0 degrees		Mediun						
Ri	ght View: 9	0.0 degrees		Heav	y Truck	s: 56.	285			
FHWA Noise Model C	alculations		1							
VehicleType		ffic Flow Di	istance	Finite	Road	Fresh	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	4.20	-0.8		-1.20		-4.69	0.0		0.00
Medium Trucks:	81.00	-12.31	-0.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-10.02	-0.8	7	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Le	evels (without	Topo and barri	ier atter	uation)						
	q Peak Hour	Leq Day		vening	Leq	Night		Ldn		VEL
Autos:	72.3	70.2		68.5		64.9		72.5		72.
Medium Trucks:	66.6	64.7		60.4		59.6		67.0		67.
Heavy Trucks:	73.3	70.4		69.4		68.2		75.0		75.
Vehicle Noise:	76.3	73.9		72.3		70.3	5	77.3	5	77.
Centerline Distance t	o Noise Conto	ur (in feet)					-			
		L et e :	70	dBA	65	dBA		i0 dBA		dBA
		Ldn: CNEL:		185		399		860		1,852
		UNEL:		195		421		907		1,955

Wednesday, September 28, 2022

FHWA-	RD-77-108 HIG	HWAY NC	ISE PREDIO	CTION MO	DEL (9/12/:	2021)		
Scenario: HY				Project N	a <i>me:</i> West	Campus Up	per Plate	
Road Name: Van Bure				Job Nun	nber: 1406	4		
Road Segment: w/o Woo	d Rd.							
SITE SPECIFIC	INPUT DATA					EL INPUTS	3	
Highway Data			Site Cor	ditions (H		,		
Average Daily Traffic (Adt):	54,110 vehic	les			Autos			
Peak Hour Percentage:				dium Truci				
Peak Hour Volume:	-,	es	He	eavy Trucks	s (3+ Axles,	): 15		
Vehicle Speed:	1		Vehicle	Mix				
Near/Far Lane Distance:	42 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data				Au	tos: 71.9	% 12.2%	15.9% 9	4.08
Barrier Height:	0.0 feet		M	edium Truc	ks: 75.3	% 7.0%	17.7%	2.20
Barrier Type (0-Wall, 1-Berm).				Heavy Truc	cks: 60.4	% 12.0%	27.6%	3.73
Centerline Dist. to Barrier.	60.0 feet		Noise S	ource Elev	ations (in	feet)		
Centerline Dist. to Observer.	60.0 feet			Autos:	0.000			
Barrier Distance to Observer.	0.0 feet		Mediu	m Trucks:	2.297			
Observer Height (Above Pad)	5.0 feet			vy Trucks:	8.004	Grade Adi	ustment: 0	0.0
Pad Elevation:	0.0 1001							
Road Elevation:	0.0 1001		Lane Eq	uivalent D		feet)		
Road Grade:	0.070			Autos:	56.427			
Left View:	oo.o aogra			m Trucks:	56.270			
Right View.	90.0 degre	es	Hea	vy Trucks:	56.285			
FHWA Noise Model Calculatio	ns							
VehicleType REMEL	Traffic Flow	Distan	ce Finite	Road	Fresnel	Barrier Atte	en Berm	Atter
Autos: 70.2	0 4.68	3	-0.89	-1.20	-4.69	0.0	00	0.00
Medium Trucks: 81.0			-0.87	-1.20	-4.88			0.00
Heavy Trucks: 85.3	18 -9.34	1	-0.87	-1.20	-5.34	¢ 0.0	00	0.00
Unmitigated Noise Levels (wi	thout Topo and	l barrier a	ttenuation)					
VehicleType Leq Peak H			q Evening	Leq Ni	-	Ldn	CNE	
	72.8	70.7	69.0		65.4	72.9		73
	67.3	65.4	61.0		60.3	67.7		68
	74.0	71.1	70.1		68.9	75.7		76
Vehicle Noise:	76.9	74.5	72.9		70.9	78.0	)	78
	Contour (in fee	t)						
Centerline Distance to Noise	oomoan (minoa						55 dE	24
Centerline Distance to Noise			70 dBA	65 dB		60 dBA	55 GE	
Centerline Distance to Noise		Ldn:	70 dBA 204 215	65 dB	439	60 dBA 945	55 dE	2,03

	FHWA-RD	0-77-108 HIGHW	AY NOI	SE PREDIO		MODEL (S	/12/20	021)		
Scenario Road Name Road Segmen	e: Van Buren					t Name: \ lumber: 1		Campus Up	oper Plat	e
SITE S	PECIFIC IN	PUT DATA						L INPUT	s	
Highway Data				Site Cor	nditions	(Hard =	10, So	oft = 15)		
Average Daily 7	Traffic (Adt):	56,106 vehicles					Autos:	15		
Peak Hour F	Percentage:	9.80%		Me	edium Tr	ucks (2 A	xles):	15		
Peak Ho	our Volume:	5,498 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Veh	icle Speed:	50 mph		Vehicle	Mix					
Near/Far Lan	e Distance:	42 feet			icleType		Day	Evening	Night	Daily
Site Data				101			71.9%	•	15.9%	
				M	Iedium T		75.3%		17.7%	
	rier Height:	0.0 feet 0.0			Heavy T		60.4%		27.6%	
Barrier Type (0-Wa Centerline Dis	. ,	0.0 60.0 feet							21.070	0.0070
Centerline Dist. to		60.0 feet		Noise S	ource E	levations	; (in fe	eet)		
Barrier Distance to		0.0 feet			Auto	0.0	000			
Observer Height (A		5.0 feet		Mediu	m Truck	is: 2.2	97			
	d Elevation:	0.0 feet		Hea	vy Truck	is: 8.0	04	Grade Adj	iustment	: 0.0
	d Elevation:	0.0 feet		Lane Eo	uivalen	t Distanc	e (in f	feet)		
	load Grade:	0.0%			Auto			,		
	Left View:	-90.0 degrees		Mediu	m Truck					
	Right View:	90.0 degrees			vy Truck					
FHWA Noise Mode	I Calculation:	5								
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos:	70.20	4.85	-(	0.89	-1.20		4.69	0.0	000	0.000
Medium Trucks:	81.00	-11.63	-(	).87	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-9.34	-(	0.87	-1.20		-5.34	0.0	000	0.000
Unmitigated Noise				,						
	Leq Peak Hou			Evening		Night		Ldn		NEL
Autos:	73		0.8	69.2		65.5		73.1		73.6
Medium Trucks:	67		5.4	61.0		60.3		67.7		68.0
Heavy Trucks:	74	-	1.1	70.1		68.9		75.7		76.0
Vehicle Noise:	77	.0 74	4.5	72.9		71.0		78.0	)	78.4
Centerline Distance	e to Noise Co	ontour (in feet)								
				'0 dBA	65	dBA	6	i0 dBA		dBA
			dn:	205		442		953		2,053
		CN	EL:	217		467		1,006		2,167

FHWA-RD-77-108 HIGH	WAY NOI	SE PREDIO	CTION M	IODEL (9	/12/20	21)				
Scenario: E Road Name: Van Buren Blvd. Road Segment: e/o Wood Rd.		Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA			N	IOISE N	IODEI		3			
Highway Data		Site Cor	nditions	(Hard =	10, So	ft = 15)				
Average Daily Traffic (Adt): 30,101 vehicl	es				Autos:	15				
Peak Hour Percentage: 9.80%		Me	edium Tri	ucks (2 A	xles):	15				
Peak Hour Volume: 2,950 vehicle	s	He	eavy True	cks (3+ A	xles):	15				
Vehicle Speed: 50 mph		Vehicle	Mix							
Near/Far Lane Distance: 42 feet			nicleType		Dav	Evening	Night	Daily		
Site Data		001			71.9%	12.2%	15.9%			
		M	Iedium Ti		75.3%	7.0%	17.7%			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Ti		50.4%		27.6%			
Centerline Dist. to Barrier: 60.0 feet										
Centerline Dist. to Observer: 60.0 feet		Noise S		evations		et)				
Barrier Distance to Observer: 0.0 feet			Auto		00					
Observer Height (Above Pad): 5.0 feet			m Truck		97					
Pad Elevation: 0.0 feet		Hea	vy Truck	s: 8.0	104	Grade Adj	ustment	: 0.0		
Road Elevation: 0.0 feet		Lane Eo	uivalent	Distanc	e (in fe	eet)				
Road Grade: 0.0%			Auto							
Left View: -90.0 degre	25	Mediu	m Truck	s: 56.2	270					
Right View: 90.0 degre		Hea	vy Truck	s: 56.2	285					
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flow	Distanc	e Finite	Road	Fresn	e/ L	Barrier Atte	en Ber	m Atten		
Autos: 70.20 2.14	-	0.89	-1.20		4.69	0.0	00	0.000		
Medium Trucks: 81.00 -14.18	-	0.87	-1.20		4.88	0.0	00	0.000		
Heavy Trucks: 85.38 -11.88	-	0.87	-1.20		5.34	0.0	00	0.000		
Unmitigated Noise Levels (without Topo and	barrier at	tenuation)								
VehicleType Leq Peak Hour Leq Day		l Evening		Night		Ldn		VEL		
Autos: 70.3	68.1	66.4		62.8		70.4		70.8		
Medium Trucks: 64.7	62.8	58.5		57.8		65.2		65.4		
Heavy Trucks: 71.4	68.5	67.5		66.4		73.1		73.4		
Vehicle Noise: 74.4	71.9	70.3		68.4		75.4		75.8		
Centerline Distance to Noise Contour (in feet			1							
		70 dBA	65	dBA	6	0 dBA	55	dBA		
	Ldn:	138		297		639		1,377		
C	NEL:	145		313		675		1,453		

	FHWA-RD-77	-108 HIGHWAY	NOISE	PREDIC	TION N	IODEL (	9/12/20	021)					
Scenario: E Road Name: V Road Segment: e	an Buren Blvd			Project Name: West Campus Upper Plate Job Number: 14064									
SITE SPE	CIFIC INPU	T DATA			1	IOISE N	IODE		5				
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)					
Average Daily Traf	fic (Adt): 32,7	762 vehicles					Autos:	15					
Peak Hour Perc	centage: 9.8	80%		Mee	dium Tr	ucks (2 A	(xles):	15					
Peak Hour	Volume: 3,2	11 vehicles		Hei	avy Tru	cks (3+ A	(xles)	15					
Vehicle	Speed:	50 mph	F	Vehicle N	Nix								
Near/Far Lane D	istance:	42 feet	ŀ		cleType		Dav	Evening	Night	Daily			
Site Data							71.9%		15.9%				
Barrier	Height:	0.0 feet		Me	edium T	rucks:	75.3%	7.0%	17.7%	2.029			
Barrier Type (0-Wall,		0.0		F	leavy T	rucks:	60.4%	12.0%	27.6%	3.429			
Centerline Dist. to	,	0.0 feet	-	N- : 0-			. (in <b>f</b> .	- 41					
Centerline Dist. to O	bserver: 6	0.0 feet	-	Noise So	Auto			et)					
Barrier Distance to O	bserver:	0.0 feet		Mediur			000 297						
Observer Height (Abo	ve Pad):	5.0 feet			n Truck y Truck		297 004	Grade Ad	ustmont	0.0			
Pad E	levation:	0.0 feet		Heav	у писк	S. 0.	JU4	Graue Auj	usuneni.	0.0			
Road E	levation:	0.0 feet		Lane Equ	iivalen	t Distand	e (in f	feet)					
Road	d Grade: 0.	0%			Auto	s: 56.	427						
Le	eft View: -9	0.0 degrees		Mediur	n Truck	s: 56.	270						
Rig	ht View: 9	0.0 degrees		Heav	y Truck	s: 56.	285						
FHWA Noise Model Ca													
			istance	Finite		Fresn	-	Barrier Atte		m Atten			
Autos:	70.20	2.53	-0.8		-1.20		-4.69	0.0		0.00			
Medium Trucks:	81.00	-14.18	-0.8		-1.20		-4.88		000	0.00			
Heavy Trucks:	85.38	-11.88	-0.8	37	-1.20		-5.34	0.0	000	0.00			
Unmitigated Noise Le				,									
,, ,	Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		VEL			
Autos:	70.6	68.5		66.8		63.2		70.8		71.			
Medium Trucks:	64.7	62.8		58.5		57.8		65.2		65.			
Heavy Trucks:	71.4	68.5		67.5		66.4		73.1		73.			
Vehicle Noise:	74.5	72.1		70.5		68.5	•	75.5	)	75.			
Centerline Distance to	Noise Conto	ur (in feet)											
		[	70	dBA	65	dBA	6	i0 dBA		dBA			
		Ldn:		140		303		652		1,40			
		CNEL:		148		319		688		1,482			

Wednesday, September 28, 2022

	FHWA-RD	0-77-108 HIGHW	AY NOIS	SE PREDIC	TION MO	DEL (9/1	2/2021)		
Scenari							est Campus	Upper Pl	ate
	e: Van Buren				Job Nu	nber: 140	064		
Road Segmer	nt: e/o Wood F	Rd.							
	SPECIFIC IN	PUT DATA					DEL INPU	TS	
Highway Data				Site Con	ditions (H		, Soft = 15)		
Average Daily	, ,	34,577 vehicles					tos: 15		
	Percentage:	9.80%			dium Truc		,		
	our Volume:	3,389 vehicles		He	avy Truck	s (3+ Axle	es): 15		
	hicle Speed:	50 mph		Vehicle I	Nix				
Near/Far Lai	ne Distance:	42 feet		Veh	icleType	Da	y Evening	g Night	Daily
Site Data					Au	tos: 71	.9% 12.2%	6 15.9	% 94.08
Bar	rier Height:	0.0 feet		Me	edium Tru	cks: 75	.3% 7.0%	6 17.7	% 2.20
Barrier Type (0-W		0.0		F	leavy Tru	cks: 60	.4% 12.0%	6 27.6	% 3.73
Centerline Dis	st. to Barrier:	60.0 feet		Noise So	urce Elev	ations (i	in feet)		
Centerline Dist.	to Observer:	60.0 feet			Autos:	0.000	,		
Barrier Distance	to Observer:	0.0 feet		Mediu	n Trucks:	2.297	-		
Observer Height (	,	5.0 feet			v Trucks:	8.004		Adjustme	nt: 0.0
	d Elevation:	0.0 feet							
	d Elevation:	0.0 feet		Lane Equ			, ,		
F	Road Grade:	0.0%			Autos:	56.42			
	Left View:	-90.0 degrees			n Trucks:	56.270	-		
	Right View:	90.0 degrees		Heav	y Trucks:	56.28	5		
FHWA Noise Mode	l Calculation	5							
VehicleType	REMEL	Traffic Flow	Distance			Fresnel	Barrier A		erm Atter
Autos:	70.20	2.74	-	.89	-1.20			0.000	0.00
Medium Trucks:	81.00	-13.58	-	.87	-1.20			0.000	0.00
Heavy Trucks:	85.38	-11.28	-0	.87	-1.20	-5.	.34	0.000	0.00
Unmitigated Noise				,					
	Leq Peak Hou			Evening	Leq N	•	Ldn		CNEL
Autos:	70		8.7	67.0		63.4		1.0	71
Medium Trucks:	65		3.4	59.1		58.4	-	5.8	66
Heavy Trucks:	72		9.1	68.1		67.0		3.7	74
Vehicle Noise:	75		2.5	70.9		69.0	7	6.0	76
Contorlino Distanc	e to Noise Co	ontour (in feet)							
Centernine Distance			7	0 dBA	65 dE	24	60 dBA	5	5 dBA
Centenine Distance					00 01				
oenternine Distance		L	dn:	151 159	05.01	326 343		01 40	1,51

		-77-108 HIGH	IVVAT	NUISE	PREDIC		JDEL	(9/12/2)	J21)						
Scenari									Campus U	oper Plat	te				
	e: Van Buren B					Job Ni	imber:	14064							
Road Segmer	nt: e/o Wood R	d.													
	SPECIFIC IN	PUT DATA			0					S					
Highway Data					Site Con	aitions (	Hard =		,						
Average Daily	( )	37,237 vehicl	es					Autos:	15						
	Percentage:	9.80%				dium Tru		,							
		3,649 vehicle	s		He	avy Truc	ks (3+	Axles):	15						
Vel	hicle Speed:	50 mph		ŀ	Vehicle	Mix									
Near/Far Lar	ne Distance:	42 feet		ŀ	Veh	icleType		Day	Evening	Night	Daily				
Site Data						A	utos:	71.9%	12.2%	15.9%	94.509				
Bar	rier Height:	0.0 feet			M	edium Tri	ucks:	75.3%	7.0%	17.7%	2.049				
Barrier Type (0-W		0.0			1	leavy Tri	ucks:	60.4%	12.0%	27.6%	3.469				
Centerline Dis	t. to Barrier:	60.0 feet		ŀ	Noise So	ource Ele	vatior	ns (in fe	eet)						
Centerline Dist.	to Observer:	60.0 feet				Autos		.000	.,						
Barrier Distance t	to Observer:	0.0 feet			Mediu	n Trucks	•	.297							
Observer Height (J	Above Pad):	5.0 feet				v Trucks		.004	Grade Ad	iustment	0.0				
Pa	d Elevation:	0.0 feet			near	y mucho	. 0	.004		,					
Roa	d Elevation:	0.0 feet			Lane Eq	uivalent	Distan	ice (in t	feet)						
F	Road Grade:	0.0%				Autos	: 56	.427							
	Left View:	-90.0 degre	es		Mediu	m Trucks	: 56	.270							
	Right View:	90.0 degre	es		Heav	y Trucks	: 56	.285							
FHWA Noise Mode	Calculations	;													
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Bei	rm Atten				
Autos:	70.20	3.08		-0.8	19	-1.20		-4.69	0.0	000	0.00				
Medium Trucks:	81.00	-13.58		-0.8	7	-1.20		-4.88	0.0	000	0.00				
Heavy Trucks:	85.38	-11.28		-0.8	17	-1.20		-5.34	0.0	000	0.00				
Unmitigated Noise															
	Leq Peak Hou			Leq E	vening	Leq N			Ldn		NEL				
Autos:	71.	-	69.1		67.4		63.	-	71.3	-	71.				
Medium Trucks:	65.		63.4		59.1		58.		65.	-	66.				
Heavy Trucks:	72.	-	69.1		68.1		67.	-	73.		74.				
Vehicle Noise:	75.	.1	72.7		71.1		69.	1	76.	1	76.				
Centerline Distanc	e to Noise Co	ntour (in feet	)	70											
			L	70	dBA	65 a			60 dBA		dBA				
			Ldn:		154		331		713		1,537 1.622				
			NEL		162		349		753						

FHWA-F	RD-77-108 HIGH	IWAY NOI	SE PREDIO		IODEL (9/	12/2021)		
Scenario: OYC Road Name: Van Burer Road Segment: e/o Wood					Name: W lumber: 14	est Campus U 064	pper Plate	
SITE SPECIFIC I	NPUT DATA					DDEL INPUT	S	
Highway Data			Site Cor	ditions	(Hard = 10	0, Soft = 15)		
Average Daily Traffic (Adt):	44,791 vehicl	es			AL	<i>itos:</i> 15		
Peak Hour Percentage:	9.80%		Me	edium Tri	ucks (2 Ax	<i>les):</i> 15		
Peak Hour Volume:	4,389 vehicle	s	He	eavy True	cks (3+ Ax	<i>les):</i> 15		
Vehicle Speed:	50 mph		Vehicle	Mix				
Near/Far Lane Distance:	42 feet			icleType	D	ay Evening	Night Daily	
Site Data						1.9% 12.2%	15.9% 94.08%	
Barrier Height:	0.0 feet		М	edium Ti	rucks: 7	5.3% 7.0%	17.7% 2.20%	
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Ti	rucks: 60	0.4% 12.0%	27.6% 3.73%	
Centerline Dist. to Barrier:	60.0 feet							
Centerline Dist. to Observer:	60.0 feet		Noise Se		evations (	,		
Barrier Distance to Observer:	0.0 feet			Auto				
Observer Height (Above Pad):	5.0 feet			m Truck			ljustment: 0.0	
Pad Elevation:	0.0 feet		неа	vy Truck	S: 8.00	4 Grade Ad	jusiment. 0.0	
Road Elevation:	Lane Equivalent Distance (in feet)							
Road Grade:	Autos: 56.427							
Left View:	-90.0 degre	es	Mediu	m Truck	s: 56.27	0		
Right View:	es	Heavy Trucks: 56.285						
FHWA Noise Model Calculatio	ns		1					
VehicleType REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Att	ten Berm Atten	
Autos: 70.2	D 3.86	-	0.89	-1.20	-4	1.69 0.1	000 0.000	
Medium Trucks: 81.0	0 -12.45	-	0.87	-1.20	-4	1.88 0.0	000 0.000	
Heavy Trucks: 85.3	8 -10.16	-	0.87	-1.20	-5	5.34 0.	000 0.000	
Unmitigated Noise Levels (with			tenuation)					
VehicleType Leq Peak Ho			r Evening		Night	Ldn	CNEL	
	2.0	69.8	68.2		64.5	72.		
	6.5	64.5	60.2		59.5	66.		
	3.1	70.3	69.2		68.1	74.		
Vehicle Noise: 7	6.1	73.6	72.0		70.1	77.	1 77.5	
Centerline Distance to Noise C	Contour (in feet							
			70 dBA	65	dBA	60 dBA	55 dBA	
	-	Ldn:	180		387	833	,	
	С	NEL:	189		408	879	9 1,894	

	FHWA-RD	-77-108 HIGH	NAY	NOISE P	REDIC	TION M	ODEL (	9/12/2	021)				
Scenario: OYCP Road Name: Van Buren Blvd. Road Segment: e/o Wood Rd.					Project Name: West Campus Upper Plate Job Number: 14064								
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE		s			
Highway Data				Si	ite Con	ditions	(Hard =	10, So	oft = 15)				
Average Daily	Traffic (Adt):	47,451 vehicle	s					Autos:	15				
Peak Hour	Percentage:	9.80%			Medium Trucks (2 Axles): 15								
Peak H	our Volume:	4,650 vehicles			Hei	avy Truc	:ks (3+ A	Axles):	15				
Ve	hicle Speed:	50 mph		Ve	ehicle N	<i>lix</i>							
Near/Far La	ne Distance:	42 feet		-		cleType		Dav	Evening	Night	Daily		
Site Data							lutos:	71.9%	•	15.9%			
Rai	rier Heiaht:	0.0 feet			Me	edium Tr	ucks:	75.3%	7.0%	17.7%	2.079		
Barrier Type (0-Wall, 1-Berm): 0.0					F	leavy Tr	ucks:	60.4%	12.0%	27.6%	3.529		
Centerline Dis	. ,	60.0 feet		A.	oico Sa	urco El	ovation	r (in f	nof)				
Centerline Dist.	to Observer:	60.0 feet		/**	Noise Source Elevations (in feet) Autos: 0.000								
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks		297					
Observer Height (	Above Pad):	5.0 feet				y Trucks		207	Grade Ad	iustment	0.0		
Pa	ad Elevation:	0.0 feet			Tieav	y mucks	5. 0.1	004	Orade Auj	usunen	0.0		
Road Elevation: 0.0 feet					Lane Equivalent Distance (in feet)								
Road Grade: 0.0%					Autos: 56.427								
Left View: -90.0 degrees					Medium Trucks: 56.270 Heavy Trucks: 56.285								
	Right View:	90.0 degree	S		Heav	y Trucks	5. 56.	285					
FHWA Noise Mode	el Calculations	5											
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite		Fresn	-	Barrier Att		m Atten		
Autos:	70.20	4.13		-0.89		-1.20		-4.69		000	0.00		
Medium Trucks:	81.00	-12.45		-0.87		-1.20		-4.88		000	0.00		
Heavy Trucks:	85.38	-10.16		-0.87		-1.20		-5.34	0.0	000	0.00		
Unmitigated Noise			-										
	Leq Peak Hou			Leq Eve		Leq	Night		Ldn		VEL		
Autos: Medium Trucks:	72. 66.		70.1		68.4 60.2		64.8		72.4		72. 67.		
Heavy Trucks:	73.		64.5 70.3		69.2		59.5 68.1		74.9		67 75		
Vehicle Noise:	76.		73.7		72.2		70.2		74.3		75.		
			5.1		12.2		10.2	-		-			
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dE	BA	65 (	dBA	6	60 dBA	55	dBA		
			dn:		182		392		844		1.81		

Wednesday, September 28, 2022

FHWA-R	D-77-108 HIGHWA	Y NOISE	PREDIC		ODEL (9/	12/202	21)		
Scenario: HY Road Name: Van Buren Blvd.					Name: W Imber: 14		ampus Up	per Plate	•
Road Segment: e/o Wood	Rd.								
SITE SPECIFIC I	NPUT DATA			N	OISE M	ODEL	INPUTS	;	
Highway Data			Site Con	ditions (	Hard = 1	0, Sof	it = 15)		
Average Daily Traffic (Adt):	52,492 vehicles				A	utos:	15		
Peak Hour Percentage:	9.80%		Med	dium Tru	cks (2 Ax	des):	15		
Peak Hour Volume:	5,144 vehicles		Hea	avy Truc	ks (3+ Ax	(les):	15		
Vehicle Speed:	50 mph	-	Vehicle N	liv					
Near/Far Lane Distance:	42 feet	H		cleType	0	ay I	Evening	Night	Daily
Site Data			10/11			1.9%	12.2%	15.9%	94.08%
Barrier Height:	0.0 feet		Me	dium Tr	ucks: 7	5.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berm):	0.0		E	leavy Tr	ucks: 6	0.4%	12.0%	27.6%	3.73%
Centerline Dist. to Barrier:	60.0 feet	-		-					
Centerline Dist. to Observer:	60.0 feet	4	Noise So				et)		
Barrier Distance to Observer:	0.0 feet			Autos	. 0.00				
Observer Height (Above Pad):	5.0 feet			n Trucks					
Pad Elevation:	0.0 feet		Heav	y Trucks	: 8.00	)4 C	Grade Adji	istment:	0.0
Road Elevation:	0.0 feet	1	Lane Equ	iivalent	Distance	e (in fe	et)		
Road Grade:	0.0%			Autos	: 56.42	27			
Left View:	-90.0 degrees		Mediur	n Trucks	56.2	70			
Right View:	90.0 degrees		Heav	y Trucks	56.28	85			
FHWA Noise Model Calculation	าร								
VehicleType REMEL	Traffic Flow D	istance	Finite	Road	Fresne	I B	Barrier Atte	n Berr	m Atten
Autos: 70.20	4.55	-0.8	9	-1.20	-4	4.69	0.0	00	0.00
Medium Trucks: 81.00		-0.8		-1.20		4.88	0.0	00	0.00
Heavy Trucks: 85.3	-9.47	-0.8	7	-1.20	-4	5.34	0.0	00	0.00
Unmitigated Noise Levels (with									
VehicleType Leq Peak Ho			vening	Leq I	•	1	Ldn	CN	IEL
	2.7 70.5		68.9		65.2		72.8		73.
	7.2 65.2		60.9		60.2		67.6		67.
	3.8 70.9		69.9		68.8		75.5		75.9
	6.8 74.3		72.7		70.8		77.8		78.
Centerline Distance to Noise C	ontour (in feet)								
			dBA	65 a		60	) dBA	55	dBA
	Ldn:		200		430 454		926 977		1,996
	CNEL		211						2.105

F	HWA-RD-77	-108 HIGHWAY	Y NOISI	E PREDIC	TION M	ODEL (9	/12/202	1)				
Scenario: HY Road Name: Va Road Segment: elo	n Buren Blvd					Name: W umber: 1		mpus Up	per Plat	e		
SITE SPEC	IFIC INPU	T DATA						INPUTS	3			
Highway Data				Site Con	ditions	(Hard = 1	10, Soft	= 15)				
Average Daily Traffic	(Adt): 55,	153 vehicles				A	utos:	15				
Peak Hour Perce	ntage: 9.	80%		Medium Trucks (2 Axles): 15								
Peak Hour V	olume: 5,4	05 vehicles		He	avy Truc	ks (3+ A	xles):	15				
Vehicle 3	Speed:	50 mph		Vehicle	Miv							
Near/Far Lane Dis	tance:	42 feet			icleType	1	Day E	vening	Night	Daily		
Site Data				ven			71.9%	12.2%	15.9%			
	la la la la la	0.0 feet		м	edium Tr		75.3%	7.0%	17.7%			
Barrier H -1. Barrier Type (0-Wall, 1		0.0 Teet			Heavy Tr	ucks: 6	50.4%	12.0%	27.6%			
Centerline Dist. to E		0.0 feet										
Centerline Dist. to Ob		0.0 feet		Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet				Autos: 0.000								
Observer Height (Above Pad): 5.0 feet				Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Pad Ele	,	0.0 feet		Heav	/y Trucks	8.0	04 0	irade Adji	ustment	: 0.0		
Road Ele		Lane Equivalent Distance (in feet)										
Road		Autos: 56.427										
Left View: -90.0 degrees				Medium Trucks: 56.270								
Righ		Heavy Trucks: 56.285										
FHWA Noise Model Cal	culations											
VehicleType RE	MEL Tra	affic Flow Di	istance	Finite	Road	Fresne	el B	arrier Atte	en Ber	m Atten		
Autos:	70.20	4.78	-0.8	39	-1.20	-	4.69	0.0	00	0.000		
Medium Trucks:	81.00	-11.76	-0.4	87	-1.20	-	4.88	0.0	00	0.000		
Heavy Trucks:	85.38	-9.47	-0.8	87	-1.20	-	5.34	0.0	00	0.000		
Unmitigated Noise Leve	els (without		ier atte	nuation)								
	Peak Hour	Leq Day		evning	Leq	•	L	.dn		NEL		
Autos:	72.9	70.8		69.1		65.5		73.0		73.5		
Medium Trucks:	67.2	65.2		60.9		60.2		67.6		67.8		
Heavy Trucks:	73.8	70.9		69.9			75.5			75.9		
Vehicle Noise:	76.9	74.4		72.8		70.8		77.9		78.3		
Centerline Distance to I	Voise Conto	ur (in feet)			r							
				dBA	65 0		60	dBA	55	dBA		
		Ldn:		202		435		937		2,018		
		CNEL:		213		459		989		2,130		

FHWA-RD-77-	108 HIGHWAY	NOISE	PREDIC	TION M	ODEL (9	9/12/20	21)				
Scenario: E Road Name: Van Buren Blvd. Road Segment: e/o Orange Terra	ace Pkwy.		Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT	DATA			N	IOISE N	IODE	L INPUTS	3			
Highway Data			Site Con	ditions	(Hard =	10, So	ft = 15)				
Average Daily Traffic (Adt): 30,04	48 vehicles					Autos:	15				
Peak Hour Percentage: 9.8	0%		Me	dium Tri	ucks (2 A	xles):	15				
Peak Hour Volume: 2,94	5 vehicles		He	avy Tru	cks (3+ A	xles):	15				
Vehicle Speed: 5	0 mph	-	Vehicle I	Mix							
Near/Far Lane Distance: 4	2 feet	-		icleType		Dav	Evening	Night	Daily		
Site Data			ven			71.9%	12.2%	15.9%	94.08%		
			M	, edium Ti		75.3%	7.0%	17.7%	2.20%		
	.0 feet			Heavy Ti		60.4%		27.6%	3.73%		
	.0 .0 feet				donto.	00.470	12.070	21.070	0.7070		
	1.0 feet	1	Noise So	ource El	evations	; (in fe	et)				
	1.0 feet			Auto	s: 0.0	000					
	.0 feet		Mediu	m Truck	s: 2.2	297					
	.0 feet		Heav	y Truck	s: 8.0	004	Grade Adj	ustment:	0.0		
	.0 feet	- E	Lane Eq	uivələnt	Distanc	o (in f	oof)				
Road Elevation. 0.0 Road Grade: 0.0		- F	Lune Ly	Auto							
	.0 degrees		Modiu	m Truck							
	.0 degrees			y Truck							
FHWA Noise Model Calculations											
	fic Flow Dis	stance	Finite	Road	Fresn	e/ I	Barrier Atte	en Berr	n Atten		
Autos: 70.20	2.13	-0.8	9	-1.20		-4.69	0.0	00	0.000		
Medium Trucks: 81.00	-14.19	-0.8	7	-1.20		-4.88	0.0	00	0.000		
Heavy Trucks: 85.38	-11.89	-0.8	7	-1.20		-5.34	0.0	00	0.000		
Unmitigated Noise Levels (without T	opo and barrie	er atten	uation)								
VehicleType Leq Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		IEL		
Autos: 70.2	68.1		66.4		62.8		70.4		70.8		
Medium Trucks: 64.7	62.8		58.5		57.8		65.2		65.4		
Heavy Trucks: 71.4	68.5		67.5		66.4		73.1		73.4		
Vehicle Noise: 74.4	71.9		70.3		68.3		75.4		75.8		
Centerline Distance to Noise Contou	r (in feet)	70		07	-10.4		0 10 4		-10.4		
		70	dBA	65	dBA	6	0 dBA	55	dBA		
	Ldn:		138		296		639		1,376		
	CNEL:		145		313		674		1,452		

	FHWA-RD-77	-108 HIGHWAY	NOISE	PREDIC	TION MO	ODEL (9	/12/2	021)			
	⊭ E+P ⊭ Van Buren Blv # e/o Orange Te					Name: V Imber: 1		Campus Up	oper Plat	е	
SITE S	PECIFIC INPU	T DATA			N	OISE N	ODE		s		
Highway Data				Site Con	ditions (	Hard =	10, Sc	ft = 15)			
Average Daily 1	raffic (Adt): 34	704 vehicles				A	Autos:	15			
Peak Hour F	Percentage: 9	.80%		Medium Trucks (2 Axles): 15							
Peak Ho	ur Volume: 3,4	01 vehicles		Hei	avy Truc	ks (3+ A	xles):	15			
Veh	icle Speed:	50 mph	-	Vehicle Mix							
Near/Far Lan	e Distance:	42 feet	-		cleType		Dav	Evening	Night	Daily	
Site Data						utos:	71.9%	•	15.9%		
Barr	ier Height:	0.0 feet		Me	edium Tri	ucks:	75.3%	7.0%	17.7%	1.909	
Barrier Type (0-Wa		0.0		F	leavy Tri	ucks:	60.4%	12.0%	27.6%	3.239	
Centerline Dis	. ,	50.0 feet	F								
Centerline Dist. to		50.0 feet	-	Noise So	Autos			et)			
Barrier Distance to	o Observer:	0.0 feet		Madium	Autos n Trucks						
Observer Height (A	lbove Pad):	5.0 feet			y Trucks		.97 )04	Grade Ad	iustment	0.0	
Pa	d Elevation:	0.0 feet		Tieav	y mucks	. 0.0	/04	Orade Au	usunent	0.0	
Roa	d Elevation:	0.0 feet		Lane Equ	ivalent	Distanc	e (in i	feet)			
R	oad Grade: 0	.0%			Autos						
		0.0 degrees			n Trucks						
	Right View:	0.0 degrees		Heav	y Trucks	: 56.2	285				
FHWA Noise Mode											
VehicleType			istance	Finite		Fresn		Barrier Att		m Atten	
Autos:	70.20	2.79	-0.8		-1.20		4.69		000	0.00	
Medium Trucks:	81.00	-14.19	-0.8		-1.20		4.88		000	0.00	
Heavy Trucks:	85.38	-11.89	-0.8		-1.20		-5.34	0.0	000	0.00	
Unmitigated Noise									1		
	eq Peak Hour	Leq Day	Leq E	vening	Leq I			Ldn		VEL	
Autos:	70.9	68.8		67.1		63.5 57.8		71.0 65.2		71. 65.	
Medium Trucks: Heavy Trucks:	64.7 71.4	62.8 68.5		58.5 67.5		57.8 66.4		65.2 73.1			
Vehicle Noise:	71.4	72.2		70.6		68.5		73.		73.	
				70.0		00.5		75.0	,	70.	
Centerline Distance	e to Noise Conto	our (in teet)	70	dBA	65 a	IBA	F	0 dBA	55	dBA	
		Ldn:	,0	142	00 0	307		661		1.42	
				142		307		001		1,42	

Wednesday, September 28, 2022

FH	WA-RD	-77-108 HIGHW	AY NO	DISE	PREDIC	TION M	ODEL (9	/12/2	021)			
Scenario: EA									Campus U	pper	Plate	
Road Name: Van						Job Ni	imber: 1	4064				
Road Segment: e/o (	Drange	Terrace Pkwy.										
SITE SPECI Highway Data	FIC IN	PUT DATA			Site Con					S		
* /					Sile Com			lutos	,			
Average Daily Traffic (		34,516 vehicles 9.80%				dium Tru						
Peak Hour Percen Peak Hour Vol		9.80% 3.383 vehicles				avy Truc						
Vehicle Sc		- /					KS (3+ A	xies).	15			
Near/Far Lane Dista		50 mph			Vehicle I	lix						
Near/Far Lane Dista	nce:	42 feet			Vehi	cleType	1	Day	Evening	Nig	ght	Daily
Site Data						A	utos:	71.9%	6 12.2%	15	5.9%	94.08%
Barrier He	ight:	0.0 feet									2.20%	
Barrier Type (0-Wall, 1-B	erm):	0.0			F	leavy Tr	ucks:	60.4%	6 12.0%	27	.6%	3.73%
Centerline Dist. to Ba	rrier:	60.0 feet		Ŀ	Noise So	urce Ele	vations	(in f	eet)			
Centerline Dist. to Obse	rver:	60.0 feet		H	10/30 00	Autos			,			
Barrier Distance to Obse	rver:	0.0 feet			Modiu	n Trucks						
Observer Height (Above I	Pad):	5.0 feet				v Trucks		04	Grade A	diustr	nent <sup>.</sup>	0.0
Pad Eleva	tion:	0.0 feet		L						ijuou	nom.	0.0
Road Eleva	tion:	0.0 feet		4	Lane Equ				feet)			
Road G	ade:	0.0%				Autos						
Left	liew:	-90.0 degrees				n Trucks		270				
Right	liew:	90.0 degrees			Heav	y Trucks	56.2	285				
FHWA Noise Model Calcı												
VehicleType REM		Traffic Flow	Distan		Finite		Fresne		Barrier A		Bern	n Atten
Autos:	70.20	2.73		-0.8	-	-1.20		4.69	-	.000		0.00
Medium Trucks:	81.00	-13.58		-0.8		-1.20		4.88	-	.000		0.00
Heavy Trucks:	85.38	-11.29		-0.8	-	-1.20		-5.34	0	.000		0.00
Unmitigated Noise Levels										-		-
VehicleType Leq Pe				eq E	vening	Leq I			Ldn 71		CN	EL 71.
Autos:	70.		3.7		67.0		63.4			-		
Medium Trucks:	65. 72		3.4 9.1		59.1 68.1		58.4 67.0		65 73	-		66.
Heavy Trucks: Vehicle Noise:	72.	÷ •	2.5		70.9		69.0		73			74. 76.
			2.5		70.9		69.0		76	.0		76.
Centerline Distance to No	ise Co	ntour (in feet)		70	dBA	65 a	D A		60 dBA	-	55 c	ID A
		1.	in:	701	ивя 151	03 0	БА 325		50 UBA 70		550	1.509
		CNE			151		325 343		70	-		1,505

	FHWA-RD	-77-108 HIGH	NAY N	OISE	PREDIC		IODEL (	9/12/2	021)					
Scenario: E Road Name: \ Road Segment: e	/an Buren B						Name: lumber:		Campus Uj	oper Plat	le			
SITE SPE	CIFIC IN	PUT DATA			NOISE MODEL INPUTS									
Highway Data				10	Site Cond	ditions	(Hard =	10, Sc	oft = 15)					
Average Daily Traf	fic (Adt):	39,172 vehicle	s					Autos:	15					
Peak Hour Pen	centage:	9.80%			Мес	dium Tr	ucks (2	Axles):	15					
Peak Hour	Volume:	3,839 vehicles			Hea	avy Tru	cks (3+ .	Axles):	15					
Vehicle	e Speed:	50 mph			/ehicle N	liv								
Near/Far Lane D	Distance:	42 feet		Ľ		cleType		Day	Evening	Night	Daily			
Site Data					Vern		Autos:	71.9%	-	15.9%				
					Ma	dium T		75.3%		17.7%				
	Height:	0.0 feet				leavy T		60.4%		27.6%				
Barrier Type (0-Wall,	,	0.0				icavy n	aons.	00.470	12.070	21.070	0.2070			
Centerline Dist. to		60.0 feet		1	Voise So	urce El	levation	s (in fe	eet)					
Centerline Dist. to C		60.0 feet				Auto	s: 0.	000						
Barrier Distance to C		0.0 feet			Mediun	n Truck	s: 2.	297						
Observer Height (Abo	lve Pad): levation:	5.0 feet			Heav	y Truck	s: 8.	004	Grade Ad	justment	: 0.0			
	levation:	0.0 feet 0.0 feet			ane Equ	uivalon	Distan	co (in i	foot)					
	d Grade:	0.0%		F	une Lyo	Auto		427	000					
	eft View:	-90.0 degree			Mediun			270						
-	aht View:	90.0 degree				y Truck		285						
		, in the second se												
FHWA Noise Model Ca VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresi	nel	Barrier Att	en Bei	rm Atten			
Autos	70.20	3.31	Diota	-0.89		-1.20		-4.69		000	0.000			
Medium Trucks:	81.00	-13.58		-0.87	7	-1.20		-4.88		000	0.000			
Heavy Trucks:	85.38	-11.29		-0.87	7	-1.20		-5.34	0.0	000	0.000			
Unmitigated Noise Le	vels (with	out Topo and I	barrier	atten	uation)									
VehicleType Leq	Peak Hou	r Leq Day	L	.eq Ev	/ening	Leq	Night		Ldn	С	NEL			
Autos:	71.	4 6	69.3		67.6		64.	)	71.	6	72.0			
Medium Trucks:	65.	.3 (	53.4		59.1		58.	4	65.	В	66.0			
Heavy Trucks:	72.	.0 (	69.1		68.1		67.	C	73.	7	74.0			
Vehicle Noise:	75.	2	72.8		71.2		69.	1	76.	2	76.6			
Centerline Distance to	Noise Co	ntour (in feet)												
				70 a		65	dBA		60 dBA		dBA			
			.dn:		155		335		721		1,554			
		CN	IEL:		164		353		762		1,641			

FHW	/A-RD-77-10	8 HIGHWA	Y NOISE	E PREDIC	TION M	ODEL (9	/12/20	21)	
Scenario: OYC Road Name: Van B Road Segment: e/o O		ce Pkwy.				Name: V Imber: 1		ampus Up	per Plate
SITE SPECIF	C INPUT	DATA			N	OISE N	IODE	. INPUTS	6
Highway Data				Site Con	ditions (	Hard =	10, So	ft = 15)	
Average Daily Traffic (A	dt): 51,616	3 vehicles				A	Autos:	15	
Peak Hour Percenta	ge: 9.80	%		Me	dium Tru	cks (2 A	xles):	15	
Peak Hour Volu	ne: 5,058	vehicles		He	avy Truc	ks (3+ A	xles):	15	
Vehicle Spe	ed: 50	mph		Vehicle I	Niv				
Near/Far Lane Distar	ce: 42	feet			icleType		Dav	Evening	Night Daily
Site Data				VCIII			71.9%	12.2%	15.9% 94.08
		) feet		Me	edium Tr		75.3%	7.0%	17.7% 2.20
Barrier Heig Barrier Type (0-Wall, 1-Ber				ŀ	leavv Tr		60.4%	12.0%	27.6% 3.73
Centerline Dist. to Ban	,	) feet							
Centerline Dist. to Obser		) feet	-	Noise So				et)	
Barrier Distance to Obser		) feet			Autos				
Observer Height (Above Pa		) feet			n Trucks				
Pad Elevat	,	) feet		Heav	y Trucks	: 8.0	104	Grade Adji	ustment: 0.0
Road Elevat	ion: 0.0	) feet		Lane Equ	uivalent	Distanc	e (in f	eet)	
Road Gra	de: 0.0%	, D			Autos	: 56.4	27		
Left Vi	ew: -90.0	) degrees		Mediur	n Trucks	: 56.2	270		
Right Vi	ew: 90.0	) degrees		Heav	y Trucks	56.2	285		
FHWA Noise Model Calcul	ations								
VehicleType REME			Distance	Finite		Fresne		Barrier Atte	
	0.20	4.48	-0.8		-1.20		4.69	0.0	
	81.00	-11.84	-0.8		-1.20		4.88	0.0	
Heavy Trucks: 8	35.38	-9.54	-0.8	37	-1.20		-5.34	0.0	00 0.00
Unmitigated Noise Levels			1	,					
VehicleType Leq Pea		Leq Day		vening	Leq I	•		Ldn	CNEL
Autos:	72.6	70.5		68.8		65.2		72.7	
Medium Trucks:	67.1	65.2	-	60.8		60.1		67.5	÷.
Heavy Trucks:	73.8	70.9		69.9		68.7		75.5	
Vehicle Noise:	76.7	74.2	2	72.7		70.7		77.8	78
Centerline Distance to Noi	se Contour	(in feet)		1					1
				dBA	65 a		6	0 dBA	55 dBA
		Ldn CNEL		197 208		425 449		916 966	1,97 2.08

FHWA-RD-77-108 H	GHWAY NOI	SE PREDICTIO	ON MODEL (	9/12/2021)							
Scenario: OYCP Road Name: Van Buren Blvd. Road Segment: e/o Orange Terrace Pl	wy.	Project Name: West Campus Upper Plate Job Number: 14064									
SITE SPECIFIC INPUT DAT	A			MODEL INPUT	s						
Highway Data		Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (Adt): 56,272 ve	nicles	Autos: 15									
Peak Hour Percentage: 9.80%		Medium Trucks (2 Axles): 15									
Peak Hour Volume: 5,515 veh	icles	Heavy Trucks (3+ Axles): 15									
Vehicle Speed: 50 mpl		Vehicle Mix									
Near/Far Lane Distance: 42 feet		Vehicle	Type	Day Evening	Night	Daily					
Site Data		Autos: 71.9% 12.2% 15.9%									
Barrier Height: 0.0 fee	et	Medi	um Trucks:	75.3% 7.0%	17.7%	2.029					
Barrier Type (0-Wall, 1-Berm): 0.0	-	Hea	vy Trucks:	60.4% 12.0%	27.6%	3.429					
Centerline Dist. to Barrier: 60.0 fee	ŧ	Noise Sour	ce Elevation	s (in foot)							
Centerline Dist. to Observer: 60.0 fee	et			000							
Barrier Distance to Observer: 0.0 fee	et	Medium 1		297							
Observer Height (Above Pad): 5.0 fee		Heavy 1			ljustment:	0.0					
Pad Elevation: 0.0 fee					•						
Road Elevation: 0.0 fee	ŧ		alent Distan	, ,							
Road Grade: 0.0%				427							
Left View: -90.0 de Right View: 90.0 de		Medium 1 Heavy 1		270 285							
Right View: 90.0 de	Jiees	i ieavy i	100.50	200							
FHWA Noise Model Calculations											
VehicleType REMEL Traffic Flo	w Distanc	e Finite Ro	ad Fresr	el Barrier At	ten Ber	n Atten					
			1.20		000	0.00					
Medium Trucks: 81.00 -11			1.20		000	0.00					
Heavy Trucks: 85.38 -9	.54 -(	0.87 -	1.20	-5.34 0.	000	0.00					
Unmitigated Noise Levels (without Topo a	nd barrier at	tenuation)									
VehicleType Leq Peak Hour Leq	Day Leo	g Evening	Leq Night	Ldn		IEL					
Autos: 73.0	70.9	69.2	65.5			73.					
Medium Trucks: 67.1	65.2	60.8	60.1			67.					
Heavy Trucks: 73.8	70.9	69.9	68.7			75.					
Vehicle Noise: 76.9	74.4	72.8	70.8	3 77.	9	78.					
Centerline Distance to Noise Contour (in f											
		70 dBA	65 dBA	60 dBA		dBA					
	Ldn:	201	434			2,013					
	CNEL:	212	458	986	3	2.125					

Wednesday, September 28, 2022

Scenario: HY			Project No	me Wes	t Campus Up	ner Plate	`		
Road Name: Van Buren Blvd.				ber: 1406		perriate			
Road Segment: e/o Orange Terrace Pkw	y.								
SITE SPECIFIC INPUT DATA			NO	SE MOD	EL INPUT	5			
Highway Data		Site Con	ditions (Ha	ard = 10, 3	Soft = 15)				
Average Daily Traffic (Adt): 60,749 vehic	les			Auto	s: 15				
Peak Hour Percentage: 9.80%		Me	dium Truck	s (2 Axles	): 15				
Peak Hour Volume: 5,953 vehicle	es	He	avy Trucks	(3+ Axles	): 15				
Vehicle Speed: 50 mph		Vehicle I	Mix						
Near/Far Lane Distance: 42 feet			icleType	Day	Evening	Night	Daily		
Site Data	-		Aut	os: 71.9	% 12.2%	15.9%	94.08		
Barrier Height: 0.0 feet		Medium Trucks: 75.3% 7.0% 17.7% 2.							
Barrier Type (0-Wall, 1-Berm): 0.0		1	Heavy Truc	ks: 60.4	% 12.0%	27.6%	3.73		
Centerline Dist. to Barrier: 60.0 feet		Noise Sc	ource Eleva	ations (in	feet)				
Centerline Dist. to Observer: 60.0 feet			Autos:	0.000	1000				
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks:	2.297					
Observer Height (Above Pad): 5.0 feet			v Trucks:	8.004	Grade Adj	ustment:	0.0		
Pad Elevation: 0.0 feet									
Road Elevation: 0.0 feet		Lane Eq	uivalent Di		n feet)				
Road Grade: 0.0%			Autos:	56.427					
Left View: -90.0 degre			m Trucks:	56.270					
Right View: 90.0 degre	ees	Heav	y Trucks:	56.285					
FHWA Noise Model Calculations	-								
VehicleType REMEL Traffic Flow			Road	Fresnel	Barrier Atte	en Berr	n Atter		
Autos: 70.20 5.1	-	0.89	-1.20	-4.6			0.0		
Medium Trucks: 81.00 -11.1	-	0.87	-1.20	-4.8			0.0		
Heavy Trucks: 85.38 -8.8	4 -0	0.87	-1.20	-5.3	4 0.0	000	0.0		
Unmitigated Noise Levels (without Topo and	d barrier att	tenuation)							
VehicleType Leq Peak Hour Leq Da		r Evening	Leq Nig		Ldn		IEL		
Autos: 73.3	71.2	69.5		65.9	73.4		73		
Medium Trucks: 67.8	65.9	61.6		60.8	68.2	-	68		
	71.6	70.6		69.4	76.2	-	76		
Heavy Trucks: 74.5		73.4		71.4	78.5	5	78		
Heavy Trucks:     74.5       Vehicle Noise:     77.4	75.0	73.4							
Vehicle Noise: 77.4	et)								
	et) 7	70 dBA	65 dB,	-	60 dBA		dBA		
Vehicle Noise: 77.4 Centerline Distance to Noise Contour (in fee	et)			4 474 500	60 dBA 1,021 1.077		dBA 2,20 2.32		

FHWA-RD-77-108 HIGHWA	Y NOISI	E PREDIC	TION M	IODEL (S	9/12/20	21)				
Scenario: HYP Road Name: Van Buren Blvd. Road Segment: e/o Orange Terrace Pkwy.		Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS								
Highway Data		Site Con	ditions	(Hard =	10, Sof	ft = 15)				
Average Daily Traffic (Adt): 65,405 vehicles					Autos:	15				
Peak Hour Percentage: 9.80%		Mee	dium Tri	ucks (2 A	xles):	15				
Peak Hour Volume: 6,410 vehicles		Hei	avy Tru	cks (3+ A	xles):	15				
Vehicle Speed: 50 mph		Vehicle N	Niv							
Near/Far Lane Distance: 42 feet			cleType		Day	Evening	Night	Daily		
Site Data		VCIII			71.9%	12.2%	15.9%			
Barrier Height: 0.0 feet		Me	edium Ti	rucks:	75.3%	7.0%	17.7%	2.04%		
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy Ti	rucks:	60.4%	12.0%	27.6%	3.46%		
Centerline Dist. to Barrier: 60.0 feet		Noise So	urco El	lovation	(in for	<b>af</b> )				
Centerline Dist. to Observer: 60.0 feet		NOISE 30	Auto		000	50				
Barrier Distance to Observer: 0.0 feet		Modiur	n Truck							
Observer Height (Above Pad): 5.0 feet			y Truck			Grade Adj	iustment	0.0		
Pad Elevation: 0.0 feet							aounoni	0.0		
Road Elevation: 0.0 feet		Lane Equ				eet)				
Road Grade: 0.0%			Auto							
Left View: -90.0 degrees			n Truck							
Right View: 90.0 degrees		Heav	y Truck	s: 56.2	285					
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flow D	istance	Finite	Road	Fresn	el E	Barrier Atte	en Ber	m Atten		
Autos: 70.20 5.53	-0.		-1.20		-4.69	0.0		0.000		
Medium Trucks: 81.00 -11.13	-0.	87	-1.20		-4.88		000	0.000		
Heavy Trucks: 85.38 -8.84	-0.	87	-1.20		-5.34	0.0	000	0.000		
Unmitigated Noise Levels (without Topo and barr	rier atte	nuation)								
VehicleType Leq Peak Hour Leq Day	,	Evening	Leq	Night		Ldn		VEL		
Autos: 73.6 71.5		69.8		66.2		73.8		74.2		
Medium Trucks: 67.8 65.9		61.6		60.8		68.2		68.5		
Heavy Trucks: 74.5 71.6		70.6		69.4		76.2		76.5		
Vehicle Noise: 77.6 75.1		73.5		71.5		78.6	6	78.9		
Centerline Distance to Noise Contour (in feet)										
		dBA	65	dBA	60	) dBA	55	dBA		
Ldn		224		482		1,038		2,237		
CNEL		236		509		1,096		2,361		

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Van Buren Blvd. Road Segment: e/o Meridian Pkwy.	Project Name: West Campus Upper Plate Job Number: 14064								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 33,413 vehicles	Autos: 15								
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 3,274 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 50 mph	Vehicle Mix								
Near/Far Lane Distance: 41 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%								
Barrier Height: 0.0 feet	Medium Trucks: 75.3% 7.0% 17.7% 2.20%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%								
Centerline Dist. to Barrier: 60.0 feet									
Centerline Dist. to Observer: 60.0 feet	Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet	Autos: 0.000								
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 56.611								
Left View: -90.0 degrees	Medium Trucks: 56.454								
Right View: 90.0 degrees	Heavy Trucks: 56.469								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dista									
Autos: 70.20 2.59	-0.91 -1.20 -4.69 0.000 0.00								
Medium Trucks: 81.00 -13.73	-0.89 -1.20 -4.88 0.000 0.00								
Heavy Trucks: 85.38 -11.43	-0.90 -1.20 -5.34 0.000 0.00								
Unmitigated Noise Levels (without Topo and barrier	,								
	eq Evening Leq Night Ldn CNEL								
Autos: 70.7 68.5	66.9 63.2 70.8 71.								
Medium Trucks: 65.2 63.2	58.9 58.2 65.6 65.								
Heavy Trucks: 71.9 69.0	67.9 66.8 73.6 73.								
Vehicle Noise: 74.8 72.3	70.7 68.8 75.8 76.								
Centerline Distance to Noise Contour (in feet)									
	70 dBA 65 dBA 60 dBA 55 dBA								
Ldn: CNEL:	147 317 683 1,472 155 335 721 1,553								

Scenario: E-	-P			Project Name: West Campus Upper Plate								
Road Name: Va		vd						: 14064		pper Fiat	-	
Road Segment: e/						0001	varnoci	. 14004				
SITE SPE	CIFIC INP	UT DATA					NOISE	MODE	L INPUT	s		
Highway Data					Site Cond	ditions	(Hard	= 10, S	oft = 15)			
Average Daily Traffi	c (Adt): 3	5,281 vehicles	;					Autos	15			
Peak Hour Perc	entage:	9.80%			Medium Trucks (2 Axles): 15							
Peak Hour V	/olume: 3	,458 vehicles			Hea	avy Tru	ıcks (3-	+ Axles)	15			
Vehicle		50 mph		ŀ	Vehicle N	lix						
Near/Far Lane Di	stance:	41 feet		ľ	Vehi	cleTyp	е	Day	Evening	Night	Daily	
Site Data							Autos:	71.9%	6 12.2%	15.9%	93.81	
Barrier	Height:	0.0 feet			Me	dium	rucks:	75.3%	6 7.0%	17.7%	2.089	
Barrier Type (0-Wall, 1		0.0			H	leavy	Trucks:	60.4%	6 12.0%	27.6%	4.119	
Centerline Dist. to	Barrier:	60.0 feet		-	Noise So	urce F	levatic	ns (in f	eet)			
Centerline Dist. to Ot	server:	60.0 feet		-		Auto		0.000	,			
Barrier Distance to Observer: 0.0 feet					Mediun			2.297				
Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet					Heavy Trucks: 8.004 Grade Adjustment:						0.0	
Pad Ele		-										
Road Ele		0.0 feet		-	Lane Equ				feet)			
		0.0%				Auto		6.611				
		-90.0 degrees			Mediun	r Truci v Truci		6.454 6.469				
Rigi	nt View:	90.0 degrees	5		neav	y muci	(5. 0	0.409				
FHWA Noise Model Ca	lculations											
		Traffic Flow	Dis	stance	Finite			snel	Barrier At		m Atten	
Autos:	70.20	2.82		-0.9		-1.20		-4.69		000	0.00	
Medium Trucks:	81.00	-13.73		-0.8		-1.20		-4.88		000	0.00	
Heavy Trucks:	85.38	-10.77		-0.9	0	-1.20		-5.34	0.	000	0.00	
Unmitigated Noise Lev		t Topo and b	arri		,							
	Peak Hour	Leq Day		Leq E	vening	Leo	Night		Ldn		VEL	
Autos:	70.9		8.8		67.1			3.5	71.		71.	
Medium Trucks:	65.2		3.2		58.9			3.2	65.		65	
Heavy Trucks: Vehicle Noise:	72.5		9.6 2.7		68.6 71.2			7.5	74.		74.	
			2.1		/1.2		03	9.3	76.	3	76.	
Centerline Distance to	Noise Con	tour (in feet)									(8.4	
			. L	70	dBA	65	dBA		60 dBA		dBA	
			dn:		158			11	734		1,58	
		CN	EL.		167		- 35	59	774	ł	1,66	

Wednesday, September 28, 2022

FH	WA-RD	-77-108 HIGHW	VAY	NOISE	E PREDIC		IODEL (S	)/12/2	021)		
Scenario: EA Road Name: Van Road Segment: e/o I							Name: V lumber: 1		Campus Up	oper F	Plate
SITE SPECI	FIC IN	PUT DATA				N	IOISE N	IODE	L INPUT	s	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic ( Peak Hour Percen Peak Hour Vol Vehicle Sc	tage: ume:	38,381 vehicles 9.80% 3,761 vehicles 50 mph	5		He	avy Tru	µ ucks (2 A cks (3+ A		15		
Near/Far Lane Dista	ance:	41 feet			Vehicle			0	E. maine	Alimi	4 0-#
Site Data					ven	icleType		Day 71.9%	Evening 12.2%	Nigh 15.	
Barrier Type (0-Wall, 1-B	5	0.0 feet 0.0				, edium T Heavy T	rucks:	75.3% 60.4%	6 7.0%	17. 27.	7% 2.20
Centerline Dist. to Ba	rrier:	60.0 feet		ł	Noise So		ovations	(in f	ooti		
Centerline Dist. to Obse Barrier Distance to Obse Observer Height (Above I Pad Eleva Road Eleva Road G Left	erver: Pad): ation: ation:	60.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet 0.0% -90.0 degrees			Mediu Heav Lane Eq	Auto m Truck /y Truck	s: 0.0 s: 2.2 s: 8.0 t <b>Distanc</b> s: 56.0	000 297 004 re (in 611	, Grade Ad	iustm	ent: 0.0
Right		90.0 degrees			Heav	/y Truck	s: 56.4	169			
VehicleType REM	1EL	Traffic Flow	Dis	stance	Finite	Road	Fresn	e/	Barrier Att	en i	Berm Atter
Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38	3.19 -13.12 -10.83		9.0- 9.0- 9.0-	39	-1.20 -1.20 -1.20		-4.69 -4.88 -5.34	0.0	000 000 000	0.0 0.0 0.0
Unmitigated Noise Levels	s (witho	out Topo and b	arrie	er atter	nuation)						
VehicleType Leq Pe	ak Hour	r Leq Day		Leq E	vening	Leq	Night		Ldn		CNEL
Autos: Medium Trucks: Heavy Trucks:	71. 65. 72.	8 6	9.1 3.8 9.6		67.5 59.5 68.5		63.8 58.8 67.4		71.4 66.2 74.2	2	71 66 74
Vehicle Noise:	75.	4 7	2.9		71.4		69.4		76.4	1	76
Centerline Distance to No	nise Co	ntour (in feet)									
Sentenine Distance to No	130 00	mour (mileet)		70	dBA	65	dBA		60 dBA		55 dBA
		L	.dn:		161		348		749		1,61
		CN	EL:		170		367		791		1,70

	FHWA-RI	D-77-108 HIGH	WAY NO	ISE PREDI		IODEL (9/1)	2/2021)						
Road Nar	rio: EAP ne: Van Buren ent: e/o Meridia			Project Name: West Campus Upper Plate Job Number: 14064									
SITE	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS									
Highway Data				Site Co.	nditions	(Hard = 10,	Soft = 15)						
Average Daily	Traffic (Adt):	40,249 vehicle	es	Autos: 15									
Peak Hou	r Percentage:	9.80%		Medium Trucks (2 Axles): 15									
Peak I	Hour Volume:	3,944 vehicle	S	Heavy Trucks (3+ Axles): 15									
Ve	ehicle Speed:	50 mph		Vehicle Mix									
Near/Far La	ane Distance:	41 feet				Da	y Evening	Night	Daily				
Site Data													
				٨	, Aedium T		3% 7.0%	17.7%					
	nrrier Height:	0.0 feet 0.0			Heavy T		4% 12.0%	27.6%					
Barrier Type (0-V	ist. to Barrier:	0.0 60.0 feet						27.070	1.00 /				
Centerline Dist.		60.0 feet		Noise S	ource El	evations (i	n feet)						
Barrier Distance		0.0 feet			Auto	0.000							
Observer Height		5.0 feet	Media	um Truck	s: 2.297								
•	ad Elevation:	0.0 feet		Hea	ivy Truck	s: 8.004	Grade Adj	ustment	: 0.0				
	ad Elevation:	0.0 feet		Lane E	uivalen	Distance (	ïn feet)						
	Road Grade:	0.0%			Auto								
	Left View:	-90.0 degree	29	Medi	um Truck	s: 56.454	L						
	Right View:	90.0 degree		Hea	vy Truck								
FHWA Noise Moo	lel Calculation	s											
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	e Road	Fresnel	Barrier Atte	en Ber	m Atten				
Autos	70.20	3.39		0.91	-1.20	-4.	69 0.0	000	0.000				
Medium Trucks	81.00	-13.12		0.89	-1.20	-4.	88 0.0	000	0.000				
		-10.25		0.90	-1.20	-5.	34 0.0	000	0.00				
Heavy Trucks	85.38	10.20			-1.20	-							
		out Topo and		tenuation)		-							
Unmitigated Nois VehicleType	e Levels (with Leq Peak Hou	out Topo and Ir Leq Day	' Le	q Evening	Leq	Night	Ldn		NEL				
Unmitigated Nois VehicleType Autos:	e Levels (with Leq Peak Hou 71	out Topo and Ir Leq Day	69.3	q Evening 67.	Leq	Night 64.0	71.6	3	72.				
Unmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 71 65	out Topo and Ir Leq Day 1.5	69.3 63.8	q Evening 67. 59.	Leq 7 5	Night 64.0 58.8	71.6	6	72. 66.4				
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 71 65 73	out Topo and Ir Leq Day 1.5 5.8 5.0	69.3 63.8 70.1	q Evening 67. 59. 69.	<i>Leq</i> 7 5	Night 64.0 58.8 68.0	71.6 66.2 74.7	3 2 7	72. 66.4 75.				
Unmitigated Nois Vehicle Type Autos. Medium Trucks. Heavy Trucks. Vehicle Noise.	e Levels (with Leg Peak Hou 71 65 73 75	out Topo and Ir Leq Day 1.5 5.8 5.0 5.8	69.3 63.8 70.1 73.3	q Evening 67. 59.	<i>Leq</i> 7 5	Night 64.0 58.8	71.6	3 2 7	72. 66.4 75.				
Unmitigated Nois Vehicle Type Autos. Medium Trucks. Heavy Trucks. Vehicle Noise.	e Levels (with Leg Peak Hou 71 65 73 75	out Topo and Ir Leq Day 1.5 5.8 5.0 5.8	/ Le 69.3 63.8 70.1 73.3	q Evening 67. 59. 69. 71.	Leq 7 5 1 7	Night 64.0 58.8 68.0 69.8	71.6 66.2 74.7 76.9	3 2 7 9	72. 66.4 75. 77.2				
Unmitigated Nois Vehicle Type Autos. Medium Trucks. Heavy Trucks. Vehicle Noise.	e Levels (with Leg Peak Hou 71 65 73 75	out Topo and Ir Leq Day 1.5 5.8 5.0 5.8	2 Le 69.3 63.8 70.1 73.3	q Evening 67. 59. 69. 71. 70 dBA	Leq 7 5 1 7 65	Night 64.0 58.8 68.0 69.8 dBA	71.6 66.2 74.7 76.9	55	72.1 66.4 75.1 77.2 dBA				
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leg Peak Hou 71 65 73 75	out Topo and Ir Leq Day .5 .8 .0 .0 .8 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	/ Le 69.3 63.8 70.1 73.3	q Evening 67. 59. 69. 71.	Leq 7 5 1 7 65	Night 64.0 58.8 68.0 69.8	71.6 66.2 74.7 76.9	55	72.1 66.4 75.1 77.2				

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)
Scenario: OYC Road Name: Van Buren Blvd. Road Segment: e/o Meridian Pkwy.	Project Name: West Campus Upper Plate Job Number: 14064
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 81,701 vehicles	Autos: 15
Peak Hour Percentage: 9.80%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 8,007 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 50 mph	Vehicle Mix
Near/Far Lane Distance: 41 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 71.9% 12.2% 15.9% 94.08%
Barrier Height: 0.0 feet	Medium Trucks: 75,3% 7,0% 17,7% 2,20%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 60.4% 12.0% 27.6% 3.73%
Centerline Dist. to Barrier: 60.0 feet	
Centerline Dist. to Observer: 60.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Autos: 0.000
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 56.611
Left View: -90.0 degrees	Medium Trucks: 56.454
Right View: 90.0 degrees	Heavy Trucks: 56.469
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Dista	nce Finite Road Fresnel Barrier Atten Berm Atten
Autos: 70.20 6.47	-0.91 -1.20 -4.69 0.000 0.000
Medium Trucks: 81.00 -9.84	-0.89 -1.20 -4.88 0.000 0.000
Heavy Trucks: 85.38 -7.55	-0.90 -1.20 -5.34 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier	attenuation)
	eq Evening Leq Night Ldn CNEL
Autos: 74.6 72.4	70.8 67.1 74.7 75.2
Medium Trucks: 69.1 67.1	62.8 62.1 69.5 69.7
Heavy Trucks: 75.7 72.8	71.8 70.7 77.4 77.8
Vehicle Noise: 78.7 76.2	74.6 72.7 79.7 80.1
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	267 576 1,240 2,672
CNEL:	282 607 1,308 2,818

	FHWA-RD-7	7-108 HIGHWAY	NOISE	PREDIC		IODEL (	9/12/2	021)		
Scenario: ( Road Name: \ Road Segment: e	/an Buren Blv					Name: Na		Campus Up	oper Plat	e
	ECIFIC INPU	IT DATA						L INPUT	5	
Highway Data				Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Trat	ffic (Adt): 83	569 vehicles					Autos:	15		
Peak Hour Per	centage: 9	.80%		Mee	dium Tr	ucks (2 A	Axles):	15		
Peak Hour	Volume: 8,	190 vehicles		Hei	avy Tru	cks (3+ A	Axles):	15		
	e Speed:	50 mph	1	Vehicle N	lix					
Near/Far Lane D	Distance:	41 feet		Vehi	cleType	9	Day	Evening	Night	Daily
Site Data						Autos:	71.9%	12.2%	15.9%	93.96%
Barrier	r Height:	0.0 feet		Me	edium T	rucks:	75.3%	7.0%	17.7%	2.15%
Barrier Type (0-Wall,		0.0		F	leavy T	rucks:	60.4%	12.0%	27.6%	3.899
Centerline Dist. to	Barrier:	60.0 feet		Noise So	urce E	levation	s (in fe	pet)		
Centerline Dist. to C	Observer:	60.0 feet	Ľ.	10.00 00	Auto		000			
Barrier Distance to C		0.0 feet		Mediur			297			
Observer Height (Abo	,	5.0 feet		Heav	y Truck	s: 8.	004	Grade Adj	iustment	0.0
	levation:	0.0 feet	H			. Distant	(in -			
	levation:	0.0 feet	-	Lane Equ	Auto		ce (In 1 611	reet)		
		.0% 90.0 degrees		Mediur			454			
-		90.0 degrees			y Truck		469			
FHWA Noise Model C	alculations									
			istance	Finite		Fresn		Barrier Atte		m Atten
Autos:	70.20	6.57	-0.9		-1.20		-4.69		000	0.00
Medium Trucks:	81.00	-9.84	-0.8		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-7.26	-0.9	0	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Le				(						
	Peak Hour	Leq Day	Leq E		Leq	Night		Ldn		VEL
Autos:	74.7	72.5		70.8		67.2		74.8		75.
Medium Trucks:	69.1 76.0	67.1 73.1		62.8 72.1		62.1 71.0		69.5 77.7		69.
Heavy Trucks: Vehicle Noise:	76.0	73.1		74.8		71.0		79.9		78.
				74.0		12.8	,	79.8	,	00.
Centerline Distance to	o Noise Conte	our (in reet)	70 /	1BA	65	dBA	F	0 dBA	55	dBA
		Ldn:	701	275	00	593	-	1.278		2.754

Wednesday, September 28, 2022

FHWA	RD-77-108 HIG	HWAY NO	DISE P	REDIC	TION M	ODEL (9	/12/2	021)		
Scenario: HY								Campus Upp	per Plate	е
Road Name: Van Bure					Job Ni	umber: 1	4064			
Road Segment: e/o Merio	lian Pkwy.									
SITE SPECIFIC	INPUT DATA			to Con		OISE M Hard = 1				
Highway Data			31	le cont	illions (		· ·	,		
Average Daily Traffic (Adt)		les					utos:			
Peak Hour Percentage						icks (2 A				
Peak Hour Volume	- 1	es		Hea	avy Truc	ks (3+ A	xies):	15		
Vehicle Speed	1		Ve	hicle N	lix					
Near/Far Lane Distance	41 feet			Vehi	cleType	L	Day	Evening	Night	Daily
Site Data					A	utos:	71.9%	12.2%	15.9%	94.089
Barrier Height	: 0.0 feet			Ме	dium Tr	ucks:	75.3%	7.0%	17.7%	2.20%
Barrier Type (0-Wall, 1-Berm)				H	leavy Tr	ucks: (	50.4%	12.0%	27.6%	3.73%
Centerline Dist. to Barrier	: 60.0 feet		No	nise So	urce Ele	evations	(in fe	pet)		
Centerline Dist. to Observer	: 60.0 feet			//30 00	Autos					
Barrier Distance to Observer	: 0.0 feet			Madium	n Trucks	. 0.0				
Observer Height (Above Pad)	: 5.0 feet				y Trucks			Grade Adju	stment	0.0
Pad Elevation	: 0.0 feet			neav.	y mucka	. 0.0	04	onado maje	ounone	0.0
Road Elevation	: 0.0 feet		La	ne Equ	iivalent	Distanc	e (in :	feet)		
Road Grade	: 0.0%				Autos	56.6	11			
Left View	: -90.0 degre	es		Mediun	n Trucks	56.4	54			
Right View	: 90.0 degre	es		Heav	y Trucks	56.4	69			
FHWA Noise Model Calculati	ons									
VehicleType REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	e/	Barrier Atte	n Ber	m Atten
Autos: 70.	20 7.14	1	-0.91		-1.20	-	4.69	0.00	00	0.00
Medium Trucks: 81.	-9.18	3	-0.89		-1.20	-	4.88	0.00	00	0.00
Heavy Trucks: 85.	38 -6.88	3	-0.90		-1.20	-	5.34	0.0	00	0.00
Unmitigated Noise Levels (w										
VehicleType Leq Peak H			eq Eve		Leq I	•		Ldn	CI	VEL
Autos:	75.2	73.1		71.4		67.8		75.4		75.
	69.7	67.8		63.5		62.7		70.2		70.
Heavy Trucks:	76.4	73.5		72.5		71.4		78.1		78.
Vehicle Noise:	79.4	76.9		75.3		73.3		80.4		80.
Centerline Distance to Noise	Contour (in fee	t)							_	
			70 dE		65 c		6	60 dBA	55	dBA
		Ldn:		296		638		1.374		2,960
		NEL:		312		673		1,449		3,122

I	HWA-RD-7	7-108 HIGHWA	Y NOISI	E PREDIC	TION M	ODEL (9	/12/20	21)		
Scenario: H Road Name: V Road Segment: e/	an Buren Blv					Name: V umber: 1		ampus Upp	er Plate	
SITE SPE	CIFIC INPL	JT DATA			N	IOISE N	IODE	L INPUTS		
Highway Data				Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffi	c (Adt): 97	,135 vehicles				A	Autos:	15		
Peak Hour Perc	entage: 9	.80%		Me	dium Tru	ucks (2 A	xles):	15		
Peak Hour \	olume: 9,8	519 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Vehicle	Speed:	50 mph		Vehicle I	Nix					
Near/Far Lane Di	stance:	41 feet			cleType		Day	Evening	Night	Daily
Site Data							71.9%	12.2%	15.9%	93.98%
Barrier	Heiaht:	0.0 feet		Me	edium Ti	ucks:	75.3%	7.0%	17.7%	2.15%
Barrier Type (0-Wall, 1		0.0		F	leavy Ti	rucks:	60.4%	12.0%	27.6%	3.87%
Centerline Dist. to	Barrier:	60.0 feet		Noise So	urco Fl	ovations	(in fo	of)		
Centerline Dist. to Ol	server:	60.0 feet		110/30 00	Auto:		000	01/		
Barrier Distance to Ol	server:	0.0 feet		Modiu	n Truck:	0.0	97			
Observer Height (Abov	e Pad):	5.0 feet			y Truck			Grade Adju	stment:	0.0
Pad El	evation:	0.0 feet								
Road Ele	evation:	0.0 feet		Lane Equ				eet)		
Road	Grade: 0	0.0%			Autos		611			
Le	ft View: -	90.0 degrees		Mediur	n Truck	s: 56.4	154			
Rigi	nt View:	90.0 degrees		Heav	y Truck	s: 56.4	69			
FHWA Noise Model Ca	lculations									
VehicleType R	EMEL Tr	raffic Flow D	Distance	Finite	Road	Fresn	e/ I	Barrier Attei	n Berr	n Atten
Autos:	70.20	7.22	-0.9	91	-1.20		-4.69	0.00	00	0.000
Medium Trucks:	81.00	-9.18	-0.8	89	-1.20		-4.88	0.00	00	0.000
Heavy Trucks:	85.38	-6.64	-0.9	90	-1.20		-5.34	0.00	00	0.000
Unmitigated Noise Lev	els (without	Topo and bar	rier atte	nuation)						
VehicleType Leq	Peak Hour	Leq Day	Leq E	Evening	Leq	Night		Ldn	CN	EL
Autos:	75.3	73.2		71.5		67.9		75.5		75.9
Medium Trucks:	69.7	67.8	-	63.5		62.7		70.2		70.4
Heavy Trucks:	76.6	73.8		72.7		71.6		78.4		78.7
Vehicle Noise:	79.5	77.0	)	75.5		73.5		80.6		80.9
Centerline Distance to	Noise Conte	our (in feet)								
				dBA	65	dBA	6	0 dBA	55 0	
		Ldn		304		655		1,410		3,038
		CNEL	-	320		690		1,488		3,205

APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS



This page intentionally left blank



## 14064 - West Campus Upper Plateau CadnaA Noise Prediction Model: 14064\_12.cna

CadnaA Noise Prediction Model: 14064\_12.cna Date: 14.12.22 Analyst: B. Lawson

#### **Calculation Configuration**

ParameterValueGeneral	Configurat	tion
Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00PartitionRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Night-time Penalty (dB)5.00Night-time Penalty (dB)0.00Nodel of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Src100.00Min. Distance Source - Rcvr1.00Min. Distance Source - Reflector0.10Min. Distance Source - Reflector<	Parameter	Value
Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00PartitionRaster FactorRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (#(Unit,LEN))0.00Proj. Line SourcesOnProj. Line SourcesOnReference Time Day (min)960.00Reference Time Day (min)960.00Reference Time Day (min)960.00Reference Time Panelty (dB)0.00Daytime Penalty (dB)0.00Night-time Penalty (dB)10.00DTMStandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Search Radius Rcvr100.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierDobst. within Area Src do not shieldOnStereningIncl. Ground Att. over BarrierMin Distance Curce, Cl,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Industria (ISO 961)	General	
Min. Dist Src to Rcvr0.00Partition0.50Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnReference Time Day (min)960.00Reference Time Day (min)960.00Reference Time Day (min)480.00Daytime Penalty (dB)0.00Night-time Penalty (dB)10.00DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Rcvr100.00Max. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Ind. Distance Source - Reflector0.10Industrial (ISO 9613)Some ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Industri (??)	Max. Error (dB)	0.00
PartitionImage: constant of section (#(Unit,LEN))Raster Factor0.50Max. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnReferance Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Rer. Time Penalty (dB)10.00DTM1000Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Reflector1.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)100.00ScreeningIncl. Ground Att. over BarrierDost, within Area Src do not shieldOnScreening1.02Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Industrial (??)	Max. Search Radius (#(Unit,LEN))	2000.01
Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnRef. Time960.00Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Night-time Penalty (dB)0.00Night-time Penalty (dB)0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Reflector1.000 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)1.00Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDrawitta (SC)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Inclarcent (???)Aircraft (???)Industria (??)	Min. Dist Src to Rcvr	0.00
Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. Time860.00Reference Time Day (min)960.00Daytime Penalty (dB)0.00Night-time Penalty (dB)0.00Night-time Penalty (dB)0.00Night-time Penalty (dB)0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Src100.00Min. Distance Source - Revr1000.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)10.00Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Industrial (ISC 961.2)	Partition	
Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeSection (%)Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Retr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Ror100.00Min. Distance Source - Revr1000.00 1000.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Italet and DiffractionScreeningDz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Search (??)	Raster Factor	0.50
Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)some ObjLateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Industria (??)	Max. Length of Section (#(Unit,LEN))	999.99
Proj. Line SourcesOnProj. Area SourcesOnRef. TimeImage: SourcesReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMImage: SourcesStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Order of Reflection2Search Radius Rovr100.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Image: Source Not S	Min. Length of Section (#(Unit,LEN))	1.01
Proj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Rcvr100.00Max. Order of Reflection2Search Radius Rcvr100.00Max. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Some ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Industri (??)	Min. Length of Section (%)	0.00
Ref. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr100.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit, SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Industri (??)	Proj. Line Sources	On
Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit, SPEED))3.0Roads (TMM)Inclarent (???)Aircraft (???)Industrial (??)	Proj. Area Sources	On
Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2search Radius Src100.00Max. Order of Reflection2Search Radius Src100.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Railways (FTA/FRA)Aircraft (???)Intel Second	Ref. Time	
Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTM	Reference Time Day (min)	960.00
Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTM	Reference Time Night (min)	480.00
Night-time Penalty (dB)10.00DTM	Daytime Penalty (dB)	0.00
DTMConstantStandard Height (m)0.00Model of TerrainTriangulationReflection2max. Order of Reflection2Search Radius Src100.00Max. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)2Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit, TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit, SPEED))3.0Railways (FTA/FRA)Aircraft (???)	Recr. Time Penalty (dB)	5.00
Standard Height (m)     0.00       Model of Terrain     Triangulation       Reflection     2       max. Order of Reflection     2       Search Radius Src     100.00       Search Radius Rovr     1000.00       Max. Distance Source - Revr     1000.00       Min. Distance Source - Reflector     1.00 1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     E       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Dz with limit (20/25)     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 (TMM)     Railways (FTA/FRA)       Aircraft (???)     E	Night-time Penalty (dB)	10.00
Model of Terrain     Triangulation       Reflection     2       max. Order of Reflection     2       Search Radius Src     100.00       Search Radius Rxvr     1000.00       Max. Distance Source - Rxvr     1000.00 1000.00       Min. Distance Source - Reflector     1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     Industrial (ISO 9613)       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Darrier 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 (TMM)     Railways (FTA/FRA)       Aircraft (???)     Industrial (??)	DTM	
ReflectionCmax. Order of Reflection2Search Radius Src100.00Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Darrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Rads (TNM)Railways (FTA/FRA)Aircraft (???)International contraction contractional c	Standard Height (m)	0.00
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 Rource - Reflector         1.00 1.00           Min. Distance Source - Reflector         0.10           Industrial (ISO 9613)         Industrial (ISO 9613)           Lateral Diffraction         some Obj           Obst. within Area Src do not shield         On           Screening         Incl. Ground Att. over Barrier           Datter 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           Railways (FTA/FRA)         Intercent (#2000000000000000000000000000000000000	Model of Terrain	Triangulation
Search Radius Src100.00Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Rcvr - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Industrial (ISO 9613)Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TMM)Industrial (SC 14,2)Railways (FTA/FRA)Industrial (SC 14,2)	Reflection	
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)     Industrial (ISO 9613)       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Darrier 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       Railways (FTA/FRA)     Intercent (#Content for Content f	max. Order of Reflection	2
Max. Distance Source - Rcvr     1000.00 1000.00       Min. Distance Rvcr - Reflector     1.00 1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     some Obj       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Darrier 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       Railways (FTA/FRA)     Aircraft (???)	Search Radius Src	100.00
Min. Distance Rvcr - Reflector     1.00 1.00       Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     some Obj       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Dir With Imit (20/25)     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 (TMM)     Railways (FTA/FRA)       Aircraft (???)     Image: March Sch Sch Sch Sch Sch Sch Sch Sch Sch S	Search Radius Rcvr	100.00
Min. Distance Source - Reflector     0.10       Industrial (ISO 9613)     some Obj       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Dz with limit (20/25)     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       Railways (FTA/FRA)     Aircraft (???)	Max. Distance Source - Rcvr	1000.00 1000.00
Industrial (ISO 9613)     some Obj       Lateral Diffraction     some Obj       Obst. within Area Src do not shield     O       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       Railways (FTA/FRA)     Intercent of the section of the secti	Min. Distance Rvcr - Reflector	1.00 1.00
Lateral Diffraction     some Obj       Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Dz with limit (20/25)       Barrier Coefficients C1,2,3     3.0 20.0 0.0       Temperature (#(Unit,TEMP))     10       rel. Humidity (%)     70       Ground Absorption G     0.50       Wind Speed for Dir. (#(Unit,SPEED))     3.0       Radas (TNM)     Railways (FTA/FRA)       Aircraft (???)     Intercent of the state o	Min. Distance Source - Reflector	0.10
Obst. within Area Src do not shield     On       Screening     Incl. Ground Att. over Barrier       Dz with limit (20/25)       Barrier Coefficients C1,2,3     3.0 20.0 0.0       Temperature (#(Unit,TEMP))     10       rel. Humidity (%)     70       Ground Absorption G     0.50       Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (TMM)     Railways (FTA/FRA)       Aircraft (???)     Intercent of the state of the	Industrial (ISO 9613)	
Screening     Incl. Ground Att. over Barrier       Dz with limit (20/25)       Barrier Coefficients C1,2,3     3.0 20.0 0.0       Temperature (#(Unit,TEMP))     10       rel. Humidity (%)     70       Ground Absorption G     0.50       Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (TMM)     Intervent of the state of th	Lateral Diffraction	some Obj
Dz with limit (20/25)       Barrier Coefficients C1,2,3     3.0 20.0 0.0       Temperature (#(Unit,TEMP))     10       rel. Humidity (%)     70       Ground Absorption G     0.50       Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (TMM)     Railways (FTA/FRA)       Aircraft (???)     Image: Comparison of Comparison o	Obst. within Area Src do not shield	On
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 (TIM)     Railways (FTA/FRA)       Aircraft (???)     Letter (Comparison of Comparison of Compa	Screening	Incl. Ground Att. over Barrier
Temperature (#(Unit,TEMP))     10       rel. Humidity (%)     70       Ground Absorption G     0.50       Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (TNM)		Dz with limit (20/25)
rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???)	Barrier Coefficients C1,2,3	3.0 20.0 0.0
Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???)	Temperature (#(Unit,TEMP))	10
Wind Speed for Dir. (#(Unit,SPEED))     3.0       Roads (TNM)	rel. Humidity (%)	70
Roads (TNM) Railways (FTA/FRA) Aircraft (???)	Ground Absorption G	0.50
Railways (FTA/FRA) Aircraft (???)	Wind Speed for Dir. (#(Unit,SPEED))	3.0
Aircraft (???)	Roads (TNM)	
	Railways (FTA/FRA)	
Strictly acc. to AzB	Aircraft (???)	
-	Strictly acc. to AzB	

#### **Receiver Noise Levels**

Name	M.	ID		Level Lr		Lir	mit. Valı	ue		Land	l Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	47.7	45.9	52.8	55.0	45.0	0.0				5.00	r	6239395.68	2277518.39	1655.67
RECEIVERS		R2	44.3	42.8	49.6	55.0	45.0	0.0				5.00	r	6240840.00	2277494.60	1651.48
RECEIVERS		R3	40.3	38.0	44.9	55.0	45.0	0.0				5.00	r	6242300.90	2277400.66	1634.81
RECEIVERS		R4	43.4	38.9	46.3	55.0	45.0	0.0				5.00	r	6244773.77	2274154.49	1645.02
RECEIVERS		R5	34.0	31.0	38.0	55.0	45.0	0.0				5.00	r	6243135.43	2273499.44	1712.25
RECEIVERS		R6	46.7	44.1	51.1	55.0	45.0	0.0				5.00	r	6241549.82	2272804.45	1773.00
RECEIVERS		R7	41.5	40.1	46.9	55.0	45.0	0.0				5.00	r	6240610.52	2272148.50	1776.64
RECEIVERS		R8	47.4	43.7	50.9	55.0	45.0	0.0				5.00	r	6238684.09	2273020.65	1696.99
RECEIVERS		R9	38.5	35.1	42.2	55.0	45.0	0.0				5.00	r	6237166.99	2274522.15	1657.00
RECEIVERS		R10	40.5	38.0	44.9	55.0	45.0	0.0				5.00	r	6238570.92	2277016.29	1641.37

# Point Source(s)

Name	М.	ID	R	esult. PW	'L		Lw/L	i	Op	erating Ti	ime	Height	:	Ci	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		AC00	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241832.21	2276036.91	1749.06
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6242245.92	2275780.68	1749.06
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241881.06	2274721.43	1821.17
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6242248.59	2276026.24	1749.06
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241960.31	2274837.65	1821.17
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6242256.60	2276279.80	1749.06
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241807.11	2274832.37	1821.17
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240932.71	2275852.74	1759.70

Image         Image <th< th=""><th>Name</th><th>М.</th><th>ID</th><th>R</th><th>esult. PW</th><th>/L</th><th></th><th>Lw/L</th><th>i</th><th>Op</th><th>erating Ti</th><th>ime</th><th>Height</th><th>0</th><th>oordinates</th><th></th></th<>	Name	М.	ID	R	esult. PW	/L		Lw/L	i	Op	erating Ti	ime	Height	0	oordinates	
Image         Image <th< th=""><th>Hame</th><th></th><th></th><th></th><th></th><th></th><th>Туре</th><th></th><th></th><th></th><th></th><th></th><th>neight</th><th></th><th></th><th>Z</th></th<>	Hame						Туре						neight			Z
PUNTUNCIC         Alory         B8         B8         B        B        <				(dBA)					dB(A)	(min)			(ft)	(ft)	(ft)	(ft)
PONNOME         A         A         B        B         B         B <td>POINTSOURCE</td> <td></td> <td>AC04</td> <td>88.9</td> <td>88.9</td> <td>88.9</td> <td>Lw</td> <td>88.9</td> <td></td> <td>585.00</td> <td>0.00</td> <td>252.00</td> <td>5.00 g</td> <td>6241014.25</td> <td>2273926.15</td> <td>1742.19</td>	POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6241014.25	2273926.15	1742.19
DANTSOLIC         COC         889         889         885         985         000         200         500         1         2 <td>POINTSOURCE</td> <td></td> <td>AC05</td> <td>88.9</td> <td>88.9</td> <td>88.9</td> <td>Lw</td> <td>88.9</td> <td></td> <td>585.00</td> <td>0.00</td> <td>252.00</td> <td></td> <td>6240943.39</td> <td>2276092.97</td> <td>1740.13</td>	POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		6240943.39	2276092.97	1740.13
PONTONCIC         COD         B83         B83         B85         B85         D         D         D         E	POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6241164.82	2273916.54	1745.03
PONTONCIC         COT         880        880         880         88	POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6240575.05	2275836.73	1758.46
PANNOMC         ADD         ADD         Set 0         OD         Set 0         C         C         Set 0         Set 0	POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6241172.83	2273814.03	1745.11
PONTONCIC         COM         BAS         B	POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6240585.73	2276095.64	1748.44
PINTSOURC         COM2         B8.9         B8.9         B8.9         B8.9         B8.0         D0010000000000000000000000000000000000				-			Lw									-
PONTONCICCOMR89R89R89R89R80 <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>Lw</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>				1			Lw									
POINTSOURCE         AC09         88.9         88.9         1         88.9         58.0         0.00         22.00         50.00         54302.47         2739845.21           POINTSOURCE         AC10         89.5         88.9         8				-												
DNITSUNCE         AL10         89         88         98         98         55.00         0.00         22.00         50.00         6         6139867.30         2275987.72           DNITSUNCE         AL11         89         88.9         89         58.00         0.00         22.00         50.00         6         613987.84         227698.72         77           DNITSUNCE         AL11         89         88.9         89         58.00         0.00         22.00         50.00         6         613987.84         227697.87         77           DNITSUNCE         AL12         89         88.9         89         58.00         0.00         22.00         56.00         6         613997.73         77         7777         777         777				-												
PONTSOURC         AC10         89         89         89         55.00         0.00         22.00         50.00         6         7339714         22707834717           PONTSOURC         AC11         89         889         889         188         889         58.00         0.00         22.00         6         6739714         2277543471           PONTSOURC         AC12         89         889         889         58.00         0.00         22.00         6         64397154         2277543371           PONTSOURC         AC12         89         889         889         58.00         0.00         22.00         6         64397154         2277543371         2277543371         2277543371         2277543371         2277543371         2277543371         2277543971         227754371         227754371         22																
DNITSUICE         AL11         89.9         89.9         89.0        89.0        89.0        <																
DNITSOURCE         AC11         85.9         85.9         85.0																
POINTSOURCE         AC12         88.9         88.9         88.9         38.0         0.00         22.00         50.00         5         624003.89         12775.94         127           POINTSOURCE         AC13         88.9         88.9         188.9         98.0         0.00         22.00         50.00         5         540017.20         12775.94         127           POINTSOURCE         AC14         88.9         88.9         188.9         98.00         0.00         22.00         50.00         6         630017.20         27753.94         127           POINTSOURCE         AC14         88.9         88.9         188.00         0.00         22.00         50.00         6         643017.90         27753.94         127         1273         12733.94         127763.91         1273         12733.94         127639.17         1273         12733.94         127639.17         1273         12733.94         127639.17         1273         12733.94         127639.17         1273         12733.94         127639.17         1273         12733.94         127639.17         1273         12739.94         127639.17         1273         12739.94         1277618.10.73         127639.10.74         1274         127639.16         1277777777777777777777777																
POINTSOURCE         AC22         88.9         B8.9         Lo         88.9         S5.00         S5.00         S2.00         S5.00         S2         S2.000         S2.0000         S2.000         S2.000         <				-												-
POINTSOURCE         AC13         88.9         88.9         88.9         18.8         S56.00         100         12.00         5.00         12.00073.01         2773.01         2773.01         2773.01         2773.01         2773.01         2773         2773.01         2773         2773.01																
POINTSOURCE         AC13         88.9         88.9         88.9         18.8         Stable          DONTSOURCEAC12																1741.88
POINTSOURE         AC14         88.9         88.9         88.9         168.00         150.00         150.00         15         16.007/292.12         277314.91         177           POINTSOURE         AC15         88.9         88.9         88.9         188.9         88.00         0.00         250.00         50.00         12         200709.20         277314.91         177           POINTSOURCE         AC16         88.9         88.8         188.9         88.00         0.00         252.00         5.00         1         6240079.92         277614.00.157         177         177         177         178         188         88.8         188.8         88.0         0.00         252.00         5.00         1         624007.92         277614.80.157         277614.80.157         277614.80.157         277614.80.157         277614.80.157         1777         1777				-												-
DNITSUNCE         AC14         88.9         88.9         88.9         1         88.0         55.00         00         52.00         5.00         1         623991.01         272338.41         72           DNITSUNCE         AC15         88.9         88.9         88.9         1         88.9         58.00         0.00         72.00         5.00         1         623997.42         27264.01.51         70           POINTSOURCE         AC16         88.9         88.8         88.8         1         88.9         0.00         72.00         5.00         1         623997.42         27274.01.51         70         70         70         70         70         88.9         88.9         1         88.9         98.9         98.0         0.00         72.00         5.00         1         623997.42         72747.72         72         70         70         70         70         70         70         88.9         88.9         1         88.9         98.9         88.9         1         88.9         58.00         0.00         72.00         5.00         1         624075.02         72777.72         72         70         70         70         70         70         70         70         70																
POINTSOURCE         AC15         88.9         88.9         88.9         88.9         88.0         98.0         0.00         22.00         50.00         g         623907.42         22760.12         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         177         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         2761.12         277         2761.12         2761.12         277         2761.12         277         2761.12         277         2761.12         277         2761.12         277         2761.12         277         2761.12         277         2761.12         277         2761.12         277				-												
POINTSOURCE         AC16         88.9         88.9         VI         88.9         S5.00         0.00         22300         500         E         20780301761         20760301761         20760301761         20760301761         20760301761         20760301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         20780301761         2078030177777         277777777777777777         2777777777777777777777777777777777777				-												
POINTSOURCE         AC16         88.9         88.9         W         88.9         S55.00         0.00         27.00         50.00         g         62390114         2276130.00         77           POINTSOURCE         AC17         88.5         88.9         88.9         W         88.9         S55.00         0.00         22.00         50.00         g         6239014.04         227707.72         177           POINTSOURCE         AC18         88.9         88.9         W         88.9         S55.00         0.00         22.00         50.00         g         6243095.45         72779448.5         17           POINTSOURCE         AC18         88.9         88.9         W         88.9         S55.00         0.00         22.00         50.00         g         6243075.42         227971.83         17           POINTSOURCE         AC19         88.9         88.9         W         88.9         S55.00         0.00         22.00         50.00         g         6243076.42         227971.93         17           POINTSOURCE         AC21         88.9         88.9         W         88.9         S55.00         0.00         22.00         50.00         g         6243076.82         227979.72.87				-	88.9	88.9	Lw						-			
POINTSOURCE         AC16         88.9         88.9         V         88.9         S55.00         0.00         272.00         50.00         g         24200145.7         2276113.05         177           POINTSOURCE         AC17         88.9         88.9         88.9         V         88.9         S55.00         0.00         222.00         50.00         g         6240054.77         277647.87         172           POINTSOURCE         AC18         88.9         88.9         88.9         V         88.00         0.00         222.00         50.00         g         6240054.77         277647.87         172           POINTSOURCE         AC19         88.9         88.9         88.9         V         88.0         V         88.0         V         88.0         V         88.0         V         88.0         V         27700.50.00         g         6243974.02         27773.12         172            POINTSOURCE         AC20         88.9         88.9         V         88.0         V         88.0         V         88.0         V         27790.42         747         727         727         727         727         727         727         727         727         727         727 <td></td> <td></td> <td></td> <td></td> <td>88.9</td> <td>88.9</td> <td>Lw</td> <td>88.9</td> <td></td> <td>585.00</td> <td>0.00</td> <td></td> <td></td> <td></td> <td>2276189.05</td> <td>1737.68</td>					88.9	88.9	Lw	88.9		585.00	0.00				2276189.05	1737.68
POINTSOURCE         AC13         88.9         88.9         88.9         88.9         585.00         0.00         25.00         5.00         g         62300543         7277772         721777         721777         7217772         7217772         7217772         7217772         7217772         7217772         7217772         7217772         7217772         7217772         72177772         7217777212	POINTSOURCE		AC16	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		6239011.94	2276139.00	1702.47
POINTSOUNCE         AC18         88.9         88.9         88.9         88.9         58.50         0.00         25.20         5.00         8         623300.47         2279448.57         227944.55         72           POINTSOUNCE         AC19         88.9         88.9         88.9         88.9         88.9         88.0         0.00         25.20         5.00         8         623007.20         277571.31.2         777771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         777771.31.2         777771.31.2         777771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         77771.31.2         777771.31.2         77771.31.2         7777771.	POINTSOURCE		AC17	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6240054.57	2276181.05	1737.68
POINTSOURCE         AC13         88.9         88.9         1w         88.9         S85.00         0.00         25.200         5.00         8         232802.81         227808.98         72773.32         727           POINTSOURCE         AC19         88.9         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         623802.41         227573.32         727           POINTSOURCE         AC20         88.9         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         g         6241076.85         2275972.86         74           POINTSOURCE         AC21         88.9         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         g         6241076.85         275972.86         73           POINTSOURCE         AC22         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         g         623874.10         275902.89         73           POINTSOURCE         AC23         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00	POINTSOURCE		AC17	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		6238998.63	2275747.72	1723.41
POINTSOURCE         AC19         88.9         88.9         1w         88.9         S55.00         0.00         252.00         5.00         8         240372.20         2275944.85         74           POINTSOURCE         AC19         88.9         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         8         6240759.22         2275944.85         74           POINTSOURCE         AC21         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         8         624344957         227564.56         72           POINTSOURCE         AC21         88.9         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         8         624344957         227569.56         72           POINTSOURCE         AC22         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         8         623474.10         227599.56.17         72           POINTSOURCE         AC24         88.9         88.9         1w         88.9         555.00         0.00         252.00         5.00         8         6242457.42	POINTSOURCE		AC18	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6240054.57	2275964.85	1737.68
POINTSOURCE         AC12         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         628929.42         227571.31         27           POINTSOURCE         AC20         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         62898.46         227571.73         17           POINTSOURCE         AC22         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624894.60         227565.52         17           POINTSOURCE         AC22         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241076.85         227595.52         17           POINTSOURCE         AC22         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241076.85         227595.51         17           POINTSOURCE         AC24         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242876.42         227699.41         77	POINTSOURCE		AC18	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6238902.81	2275808.94	1723.41
POINTSOURCE         AC20         88.9         88.9         88.9         1.w         88.9         585.00         0.00         25.20         5.00         8         6240759.22         2273970.19         7.4           POINTSOURCE         AC21         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6241076.82         2273970.59         7.7           POINTSOURCE         AC22         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6241076.82         2275920.59         7.3           POINTSOURCE         AC22         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         624374.31         2275902.93         7.3           POINTSOURCE         AC24         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6243874.31         2274996.14         7.3           POINTSOURCE         AC24         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         624488.37         22	POINTSOURCE		AC19	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6240372.20	2275964.85	1748.43
POINTSOURCE         AC20         88.9         88.9         88.9         98.9         98.9         98.5         98.0         0.00         25.20         5.00         g         623894.06         2275617.29         7.7           POINTSOURCE         AC21         88.9         88.9         88.9         88.9         585.00         0.00         25.200         5.00         g         623894.05         277567.5         51           POINTSOURCE         AC22         88.9         88.9         1.w         88.9         585.00         0.00         25.200         5.00         g         623891.47         277569.52         1.7           POINTSOURCE         AC22         88.9         88.9         1.w         88.9         585.00         0.00         25.20         5.00         g         623971.42         277599.51         1.7           POINTSOURCE         AC24         88.9         88.9         1.w         88.9         585.00         0.00         25.20         5.00         g         623874.24         227499.43         1.73           POINTSOURCE         AC26         88.9         88.9         1.w         88.9         585.00         0.00         25.20         5.00         g         623887.01	POINTSOURCE		AC19	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6238929.42	2275713.12	1723.41
POINTSOURCE         AC21         88.9         88.9         88.9         88.9         98.9         98.9         98.5         98.50         0.00         25.20         5.00         g         621076.85         2775972.86         7.7           POINTSOURCE         AC22         88.9         88.8         88.9         1.00         88.5         0.00         25.20         5.00         g         624076.85         2775972.86         7.7           POINTSOURCE         AC22         88.9         88.9         1.00         88.9         585.00         0.00         25.20         5.00         g         624076.85         2775972.86         7.7           POINTSOURCE         AC23         88.9         88.9         1.00         88.9         585.00         0.00         25.20         5.00         g         623874.31         2775992.16         7.7           POINTSOURCE         AC24         88.9         88.9         1.00         88.9         585.00         0.00         25.20         5.00         g         624287.37         277689.01         7.7           POINTSOURCE         AC25         88.9         88.9         1.00         88.9         585.00         0.00         25.20         5.00         g	POINTSOURCE		AC20	88.9	88.9		Lw	88.9		585.00	0.00	252.00	v	6240759.22	2275970.19	1748.30
POINTSOURCE         AC21         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         E         6238849.57         227564.56         72           POINTSOURCE         AC22         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         E         623884.72         227552.50         73           POINTSOURCE         AC23         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         E         623874.31         227599.56.17         72           POINTSOURCE         AC24         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         E         623874.82         227499.43         73           POINTSOURCE         AC25         88.9	POINTSOURCE		AC20	88.9		88.9	Lw	88.9		585.00		252.00		6238948.06	2275617.29	1723.41
POINTSOURCE         AC22         88.9         88.9         Lw         88.9         S55.00         0.00         252.00         5.00         g         6241076.85         227622.09         173           POINTSOURCE         AC23         88.9         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         623874.31.0         227590.25         173           POINTSOURCE         AC23         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         623874.31.0         227590.26         173           POINTSOURCE         AC24         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241876.51         2276861.67         173           POINTSOURCE         AC26         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242264.61         276861.67         173           POINTSOURCE         AC27         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g				-									v			
POINTSOURCE         AC22         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         623814.97         227505.29         173           POINTSOURCE         AC23         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         623874.10         2757697.94         173           POINTSOURCE         AC24         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         623878.42         2274994.13         175           POINTSOURCE         AC25         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         623882.02         2274999.11         77           POINTSOURCE         AC26         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6234263.75         227668.34         77         73           POINTSOURCE         AC26         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g				-												
POINTSOURCE         AC23         88.9         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6238743.10         2275959.51         173           POINTSOURCE         AC24         88.9         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6238748.10         2275999.57.94         173           POINTSOURCE         AC24         88.9         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6238748.42         2274994.43         173           POINTSOURCE         AC26         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6242053.75         2276859.01         172           POINTSOURCE         AC26         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         6242053.75         227665.02         177         178           POINTSOURCE         AC27         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5																1737.68
POINTSOURCE         AC23         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         623874.31.01         227590.2.5         73           POINTSOURCE         AC24         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         623874.42         227597.94         73           POINTSOURCE         AC25         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         624887.55         2276861.67         72           POINTSOURCE         AC26         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         624887.50         177         73           POINTSOURCE         AC27         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         624276.41         27697.61         72           POINTSOURCE         AC28         88.9         88.9         1.w         88.9         585.00         0.00         252.00         5.00         g         624276.61         27697.61         72     <																1735.18
POINTSOURCE         AC24         88.9         88.9         Iw         88.9         585.00         0.00         252.00         5.00         g         6238764.24         2275697.94         73           POINTSOURCE         AC24         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         6238764.24         2274994.41         73           POINTSOURCE         AC25         88.9         88.9         88.9         1.88.9         585.00         0.00         252.00         5.00         g         623888.51.07         72           POINTSOURCE         AC26         88.9         88.9         88.9         1.88.9         585.00         0.00         252.00         5.00         g         6242053.75         276585.01         72           POINTSOURCE         AC27         88.9         88.9         88.9         1.88.9         585.00         0.00         252.00         5.00         g         6242764.61         2276864.34         72           POINTSOURCE         AC28         88.9         88.9         1.88.9         585.00         0.00         252.00         5.00         g         624795.61         72           POINTSOURCE         AC28																
POINTSOURCE         AC24         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6238748.42         2274994.43         173           POINTSOURCE         AC25         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241837.55         2276851.01         72           POINTSOURCE         AC26         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6243873.51         2276851.01         72           POINTSOURCE         AC26         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242264.61         227686.34         72           POINTSOURCE         AC28         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624375.1         227697.28         72         70         72         72         72         72         72         72         72         72         72         72         72         72         72         72         72         72																
POINTSOURCE         AC25         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241837.55         2276861.67         172           POINTSOURCE         AC25         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624889.05         2274895.91         172           POINTSOURCE         AC27         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242862.01         2274895.91         173           POINTSOURCE         AC27         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242157.44         227697.62         172           POINTSOURCE         AC28         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624197.44         227697.62         172           POINTSOURCE         AC28         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242194.64         227697.62         175<				-												
POINTSOURCE         AC25         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         623888.9         2274989.11         73           POINTSOURCE         AC26         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624205.375         2274895.95         73           POINTSOURCE         AC27         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242157.81         2274695.95         73           POINTSOURCE         AC27         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242157.84         227697.62         72           POINTSOURCE         AC28         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624194.69         227693.10         72         727693.10         72         727693.10         72         727693.10         72         727693.10         72         727693.10         72         727693.10         72727693.10         72         727693.10																
POINTSOURCE         AC26         88.9         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         6242053.75         2276859.01         172           POINTSOURCE         AC27         88.9         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6242053.75         2274859.55         173           POINTSOURCE         AC27         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6242157.84         227697.62         172           POINTSOURCE         AC28         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         624194.64         227691.72         172           POINTSOURCE         AC29         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         624194.164         227691.07         172           POINTSOURCE         AC30         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6242194.16 <td></td>																
POINTSOURCE         AC26         88.9         88.9         88.9         88.9         585.00         0.00         252.00         5.00         8         623820.29         2274895.35         173           POINTSOURCE         AC27         88.9         88.9         88.9         1         88.9         585.00         0.00         252.00         5.00         8         6238735.11         2276864.34         172           POINTSOURCE         AC27         88.9         88.9         1         88.9         585.00         0.00         252.00         5.00         8         623875.61         2276403.15         175           POINTSOURCE         AC28         88.9         88.9         1         88.9         585.00         0.00         252.00         5.00         8         623870.69         2274603.15         175           POINTSOURCE         AC29         88.9         88.9         1         88.9         585.00         0.00         252.00         5.00         8         623870.00         227443.37         175           POINTSOURCE         AC31         88.9         88.9         1         88.9         585.00         0.00         252.00         5.00         8         6242149.83         227691.07 <td></td> <td></td> <td></td> <td>-</td> <td></td>				-												
POINTSOURCE         AC27         88.9         88.9         Lw         88.9         S85.00         0.00         252.00         5.00         g         6242264.61         2276864.34         172           POINTSOURCE         AC27         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242157.84         227697.62         172           POINTSOURCE         AC28         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242157.84         227697.28         172           POINTSOURCE         AC29         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241941.64         227693.07         172           POINTSOURCE         AC30         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241941.64         227693.07         172           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242879.0.277442.33																1735.18
POINTSOURCE         AC27         88.9         88.9         Lw         88.9         S85.00         0.00         252.00         5.00         g         6238735.11         2274810.77         173           POINTSOURCE         AC28         88.9         88.9         Lw         88.9         S85.00         0.00         252.00         5.00         g         6238735.11         2274603.15         175           POINTSOURCE         AC28         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         623876.69         2274603.15         175           POINTSOURCE         AC23         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         623879.00         2274552.41         175           POINTSOURCE         AC30         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624241.81         227641.01         127         175           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03																
POINTSOURCE         AC28         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242157.84         2276797.62         172           POINTSOURCE         AC28         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6238785.69         227692.28         175           POINTSOURCE         AC29         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624194.69         227692.28         175           POINTSOURCE         AC30         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624194.33         276931.07         172           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242360.3         2274416.83         175           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242360.3         2274416.83 </td <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>Lw</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>				-			Lw									
POINTSOURCE         AC28         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6238785.69         2274603.15         175           POINTSOURCE         AC29         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624194.69         227455.24         175           POINTSOURCE         AC30         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         623879.00         227455.24         175           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242149.163         2274458.3         175           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276931.07         172           POINTSOURCE         AC33         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276931.07         172	POINTSOURCE		AC28	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		6242157.84	2276797.62	1724.16
POINTSOURCE         AC29         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         6238910.79         2274555.24         175           POINTSOURCE         AC30         88.9         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6238910.79         2274555.24         175           POINTSOURCE         AC30         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624194.83         2276931.07         172           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242360.3         2276912.28         172           POINTSOURCE         AC32         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242360.3         227693.10         17444.68         175           POINTSOURCE         AC33         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241736.12         227							Lw									
POINTSOURCE         AC29         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         6238910.79         2274555.24         175           POINTSOURCE         AC30         88.9         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         623899.00         2274553.24         175           POINTSOURCE         AC30         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242149.83         227691.07         172           POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242360.3         227692.28         172           POINTSOURCE         AC32         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242360.3         227693.01         172           POINTSOURCE         AC33         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276931.0				-												
POINTSOURCE       AC30       88.9       88.9       88.9       1.w       88.9       585.00       0.00       252.00       5.00       g       6241941.64       2276931.07       172         POINTSOURCE       AC30       88.9       88.9       88.9       88.9       88.9       585.00       0.00       252.00       5.00       g       6238799.00       227448.33       175         POINTSOURCE       AC31       88.9       88.9       88.9       1.w       88.9       585.00       0.00       252.00       5.00       g       6242149.33       2276931.07       172         POINTSOURCE       AC31       88.9       88.9       88.9       1.w       88.9       585.00       0.00       252.00       5.00       g       624216.03       2276932.41       172         POINTSOURCE       AC32       88.9       88.9       1.w       88.9       585.00       0.00       252.00       5.00       g       6242366.03       2276932.41       172         POINTSOURCE       AC33       88.9       88.9       1.w       88.9       585.00       0.00       252.00       5.00       g       624176.12       2276931.07       172         POINTSOURCE       AC34 <td>POINTSOURCE</td> <td></td> <td>AC29</td> <td>88.9</td> <td>88.9</td> <td>88.9</td> <td>Lw</td> <td>88.9</td> <td></td> <td>585.00</td> <td>0.00</td> <td>252.00</td> <td></td> <td>6238910.79</td> <td>2274555.24</td> <td>1751.06</td>	POINTSOURCE		AC29	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		6238910.79	2274555.24	1751.06
POINTSOURCE         AC31         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         6242149.83         2276931.07         172           POINTSOURCE         AC31         88.9         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6238924.10         2274416.83         175           POINTSOURCE         AC32         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6238924.10         2274416.83         175           POINTSOURCE         AC32         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6242366.03         227693.64         172           POINTSOURCE         AC33         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276936.14         176           POINTSOURCE         AC34         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276859.01 <t< td=""><td>POINTSOURCE</td><td></td><td>AC30</td><td>88.9</td><td>88.9</td><td>88.9</td><td>Lw</td><td>88.9</td><td></td><td>585.00</td><td>0.00</td><td>252.00</td><td></td><td>6241941.64</td><td>2276931.07</td><td>1724.16</td></t<>	POINTSOURCE		AC30	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		6241941.64	2276931.07	1724.16
POINTSOURCE         AC31         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6238924.10         2274416.83         175           POINTSOURCE         AC32         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276792.28         172           POINTSOURCE         AC33         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03         227693.64         172           POINTSOURCE         AC33         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239677.59         227490.11         176           POINTSOURCE         AC34         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276931.07         172           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241301.05         2276659	POINTSOURCE		AC30	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6238799.00	2274483.37	1751.06
POINTSOURCE         AC32         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276792.28         172           POINTSOURCE         AC32         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6238833.60         2276792.28         172           POINTSOURCE         AC33         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276936.41         172           POINTSOURCE         AC34         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276931.07         172           POINTSOURCE         AC34         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239643.80         227655.01         173           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48 </td <td>POINTSOURCE</td> <td></td> <td>AC31</td> <td>88.9</td> <td>88.9</td> <td>88.9</td> <td>Lw</td> <td>88.9</td> <td></td> <td>585.00</td> <td>0.00</td> <td>252.00</td> <td>5.00 g</td> <td>6242149.83</td> <td>2276931.07</td> <td>1724.16</td>	POINTSOURCE		AC31	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6242149.83	2276931.07	1724.16
POINTSOURCE         AC32         88.9         88.9         88.9         585.00         0.00         252.00         5.00         g         6238833.60         2274344.96         175           POINTSOURCE         AC33         88.9         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276936.41         172           POINTSOURCE         AC33         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276936.41         172           POINTSOURCE         AC34         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276931.07         172           POINTSOURCE         AC34         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6241047.42         2276550.01         173           POINTSOURCE         AC35         88.9         88.9         1w         88.9         585.00         0.00         252.00         5.00         g         6241047.48         2276559.01         <	POINTSOURCE		AC31	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6238924.10	2274416.83	1751.06
POINTSOURCE         AC33         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6242366.03         2276936.41         172           POINTSOURCE         AC33         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239577.59         2273490.11         176           POINTSOURCE         AC34         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239643.80         2273690.14         176           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.42         2276931.01         173           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48         276859.01         173           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48 </td <td>POINTSOURCE</td> <td></td> <td>AC32</td> <td>88.9</td> <td>88.9</td> <td>88.9</td> <td>Lw</td> <td>88.9</td> <td></td> <td>585.00</td> <td>0.00</td> <td>252.00</td> <td>5.00 g</td> <td>6242366.03</td> <td>2276792.28</td> <td>1724.16</td>	POINTSOURCE		AC32	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00 g	6242366.03	2276792.28	1724.16
POINTSOURCE         AC33         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239577.59         2273490.11         176           POINTSOURCE         AC34         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276931.07         172           POINTSOURCE         AC34         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276931.07         172           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241301.05         2276859.01         173           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241074.48         2276859.01         173           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26<				-			Lw									
POINTSOURCE         AC34         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241736.12         2276931.07         172           POINTSOURCE         AC34         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239643.80         2273560.14         176           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239643.80         2273558.61         173           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48         2276859.01         173           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241107.02         2276782.13         175           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26<				1												
POINTSOURCE         AC34         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239643.80         2273560.14         176           POINTSOURCE         AC35         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239643.80         2273560.14         176           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241301.05         2273558.86         176           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241407.48         2276859.01         173           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26         2276733.29         176           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26<																
POINTSOURCE         AC35         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241301.05         2276859.01         173           POINTSOURCE         AC35         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239506.29         2273558.86         176           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239506.29         2273558.86         176           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241107.26         2276757.21         173           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26         2276773.32.9         176           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         623966.5.02         22		-														
POINTSOURCE         AC35         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239506.29         2273558.86         176           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48         2276559.01         173           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48         2276559.01         173           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48         2276797.62         173           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26         2276797.62         173           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624167.60         276920													-			-
POINTSOURCE         AC36         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241047.48         2276859.01         173           POINTSOURCE         AC36         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239580.14         2276352.52         176           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239580.14         2273635.25         176           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26         2276797.62         173           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624183.79         227692.4.0         173           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241967.03         277692		-														
POINTSOURCE         AC36         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239580.14         2273635.25         176           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239580.14         2273635.25         176           POINTSOURCE         AC37         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241170.26         2276797.62         173           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239646.34         2273732.91         176           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241383.79         227692.84         173           POINTSOURCE         AC39         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624167.60         227692.		-														
POINTSOURCE       AC37       88.9       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6241170.26       2276797.62       173         POINTSOURCE       AC37       88.9       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6239646.34       2273733.29       176         POINTSOURCE       AC38       88.9       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6239646.34       227373.29       176         POINTSOURCE       AC38       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6241383.79       227692.84       173         POINTSOURCE       AC38       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6239505.02       227373.29       176         POINTSOURCE       AC39       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       624957.50       227383.05       176         POINTSOURCE       AC40       88.9       <		-		-												-
POINTSOURCE       AC37       88.9       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6239646.34       2273733.29       176         POINTSOURCE       AC38       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6239646.34       2273733.29       176         POINTSOURCE       AC38       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6241383.79       2276928.40       173         POINTSOURCE       AC38       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6241383.79       2276928.40       173         POINTSOURCE       AC39       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       624957.250       227383.00       176         POINTSOURCE       AC40       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6239641.25       227383.02       173         POINTSOURCE       AC40       88.9       88.9       Lw		-														
POINTSOURCE         AC38         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241383.79         2276928.40         173           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241383.79         2276928.40         173           POINTSOURCE         AC38         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239505.02         2273729.47         176           POINTSOURCE         AC39         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241167.60         226920.40         173           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624967.37         2276925.73         173           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240507.31         2276925		-														
POINTSOURCE       AC38       88.9       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6 239505.02       2273729.47       176         POINTSOURCE       AC39       88.9       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6 239505.02       2273729.47       176         POINTSOURCE       AC39       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6 241167.60       2276920.40       173         POINTSOURCE       AC40       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6 2439572.50       2273830.05       176         POINTSOURCE       AC40       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6 243957.25       2273931.51       176         POINTSOURCE       AC40       88.9       88.9       Lw       88.9       585.00       0.00       252.00       5.00       g       6 2439641.25       2273911.54       176         POINTSOURCE       AC41       88.9       88.9		-														
POINTSOURCE         AC39         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241167.60         2276920.40         173           POINTSOURCE         AC39         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6241167.60         2276920.40         173           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239572.50         2273330.05         176           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6249927.37         2276925.73         173           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239641.25         2273911.54         176           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240500.31<		-		-												-
POINTSOURCE         AC39         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239572.50         2273830.05         176           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239572.50         2273830.05         176           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240927.37         2276925.73         173           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239641.25         2273911.54         176           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624050.31         2276904.38         171           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240611.43         227323		-														
POINTSOURCE         AC40         88.9         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240927.37         2276925.73         173           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240927.37         2276925.73         173           POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239641.25         2273911.54         176           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624050.31         2276904.38         171           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240611.43         2273235.47         180           POINTSOURCE         AC42         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240609.75         227697		-		-												
POINTSOURCE         AC40         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239641.25         2273911.54         176           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6239641.25         2273911.54         176           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240500.31         2276904.38         171           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240611.43         2273235.47         180           POINTSOURCE         AC42         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240609.75         2276971.11         171		-														
POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         624050.31         2276904.38         171           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240500.31         2276904.38         171           POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240611.43         2273235.47         180           POINTSOURCE         AC42         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240609.75         2276971.11         171		-		1									-			-
POINTSOURCE         AC41         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240611.43         2273235.47         180           POINTSOURCE         AC42         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240611.43         2273235.47         180           POINTSOURCE         AC42         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240609.75         2276971.11         171		$\vdash$														
POINTSOURCE         AC42         88.9         88.9         Lw         88.9         585.00         0.00         252.00         5.00         g         6240609.75         2276971.11         171		$\vdash$		-												
		-		-												-
POINTSOURCE AC42 88.9 88.9 88.9 Lw 88.9 585.00 0.00 252.00 5.00 g 6240768.03 2273236.74 180		$\vdash$									0.00					

POINTSOURCE POINTSOURCE POINTSOURCE			Day	Evening	Night	-										
POINTSOURCE POINTSOURCE					Night	Туре	Value	norm.	Day	Special	Night			х	Y	Z
POINTSOURCE POINTSOURCE			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC43	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240377.53	2276842.99	1717.10
		AC43	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240694.19	2273305.49	
		AC44	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240369.53	2276968.44	
POINTSOURCE		AC44	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240765.49	2273390.80	
POINTSOURCE		AC45	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240270.77		
POINTSOURCE		AC45	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240616.52		
POINTSOURCE POINTSOURCE		AC46 AC46	88.9 88.9	88.9 88.9	88.9 88.9	Lw	88.9 88.9		585.00 585.00	0.00	252.00 252.00		g	6240153.33 6240696.74	2276968.44 2273473.56	
POINTSOURCE		AC40 AC47	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g g	6239873.07	2276963.10	-
POINTSOURCE		AC47	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		в g	6240773.13	2273560.14	
POINTSOURCE		AC48	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		в g	6239752.96		
POINTSOURCE		AC48	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240617.80	2273560.14	
POINTSOURCE		AC49	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239624.84	2276837.65	
POINTSOURCE		AC49	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240696.74	2273646.71	1801.24
POINTSOURCE		AC50	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239624.84	2276957.76	1701.08
POINTSOURCE		AC50	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240776.95	2273753.66	1801.24
POINTSOURCE		AC51	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239518.08	2276901.71	1701.08
POINTSOURCE		AC51	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240621.62	2273748.57	1801.24
POINTSOURCE		AC52	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239400.63	2276963.10	
POINTSOURCE		AC52	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240689.10	2273828.78	
POINTSOURCE		AC53	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239115.60	2276142.86	
POINTSOURCE		AC53	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240771.85		
POINTSOURCE		AC54	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239008.32	2275832.31	
POINTSOURCE POINTSOURCE		AC54 AC55	88.9 88.9	88.9 88.9	88.9 88.9	Lw Lw	88.9 88.9		585.00 585.00	0.00	252.00 252.00		g a	6239974.83 6238872.80	2273262.21 2275544.34	
POINTSOURCE	_	AC55 AC55	88.9	88.9	88.9	LW	88.9 88.9		585.00	0.00	252.00		g g	6238872.80	2273255.84	
POINTSOURCE		AC55 AC56	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g g	6238889.74	2275098.27	
POINTSOURCE		AC56	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		б g	6240066.50	2273341.14	-
POINTSOURCE		AC57	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6238889.74	2274815.94	
POINTSOURCE		AC57	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239974.83	2273434.09	1810.17
POINTSOURCE		AC58	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6238946.21	2274279.53	1751.06
POINTSOURCE		AC58	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240158.17	2273432.82	1810.17
POINTSOURCE		AC59	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239499.56	2273912.51	1765.77
POINTSOURCE		AC59	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240055.04	2273510.48	1810.17
POINTSOURCE		AC60	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240153.50	2273900.77	1810.17
POINTSOURCE		AC60	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239977.38	2273600.88	1810.17
POINTSOURCE		AC61	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240610.26		
POINTSOURCE		AC61	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240150.53		
POINTSOURCE		AC62	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6241792.13	2274621.78	
POINTSOURCE		AC62 AC63	88.9 88.9	88.9 88.9	88.9 88.9	Lw	88.9 88.9		585.00 585.00	0.00	252.00 252.00		g	6240065.23 6241798.50	2273677.27	
POINTSOURCE		AC63	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g g	6239978.65	2273082.78	
POINTSOURCE		AC64	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		в g	6241735.57	2276792.21	
POINTSOURCE		AC64	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		ъ g	6240158.17	2273757.48	
POINTSOURCE		AC65	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6241379.84	2276780.92	
POINTSOURCE		AC65	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240063.95	2273817.32	1810.17
POINTSOURCE		AC66	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240928.12	2276809.15	1739.99
POINTSOURCE		AC66	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239971.01	2273893.72	1810.17
POINTSOURCE		AC67	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240614.38	2276836.46	1717.10
POINTSOURCE		AC67	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239587.47	2274587.58	1753.32
POINTSOURCE		AC68	88.9	88.9	88.9	Lw	88.9		585.00	0.00			g	6240154.55	2276843.03	
POINTSOURCE		AC68	88.9	88.9	88.9	Lw	88.9		585.00	0.00			g	6239923.78	2274587.58	
POINTSOURCE	_	AC69	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239877.87	2276837.38	
POINTSOURCE	_	AC69	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00 252.00		g	6240260.09	2274558.22	
POINTSOURCE		AC70 AC70	88.9 88.9	88.9 88.9	88.9 88.9	Lw Lw	88.9 88.9		585.00 585.00	0.00	252.00		g a	6239397.92 6240647.12	2276843.03 2274563.56	
POINTSOURCE	_	AC70 AC71	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g g	6240647.12	2274363.36	
POINTSOURCE	_	AC71 AC71	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g g	6241078.00	2273830.00	-
POINTSOURCE	_	AC71 AC72	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		б g	6241033.43	2274308.30	
POINTSOURCE		AC72	88.9	88.9	88.9	Lw	88.9		585.00	0.00			ь g	6240647.12	2274822.46	
POINTSOURCE		AC73	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239703.71	2276195.74	
POINTSOURCE		AC73	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240276.11	2274817.12	
POINTSOURCE		AC74	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239499.15	2274411.73	1753.32
POINTSOURCE		AC74	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239942.47	2274825.13	1753.32
POINTSOURCE		AC75	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239475.71	2275010.69	
POINTSOURCE		AC75	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239595.48	2274833.14	
POINTSOURCE		AC76	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6242270.57	2275539.05	
POINTSOURCE		AC76	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239488.71	2274697.01	-
POINTSOURCE		AC77	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6241788.79	2276281.24	
POINTSOURCE		AC77	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6239758.30	2274697.01	
POINTSOURCE	_	AC78	88.9	88.9	88.9	Lw	88.9		585.00	0.00			g	6240102.61	2274699.68	-
POINTSOURCE		AC79	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g	6240449.60	2274697.01	
POINTSOURCE	_	AC80	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g a	6240860.65	2274699.68	
POINTSOURCE		AC81 AC82	88.9 88.9	88.9 88.9	88.9 88.9	Lw Lw	88.9 88.9		585.00 585.00	0.00	252.00 252.00		g g	6241226.32 6241039.48	2274713.03 2274814.45	
POINTSOURCE		AC82 AC83	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00		g g	6241039.48	2274814.45	-
POINTSOURCE POINTSOURCE						LVV			JUJ.UU	0.00	LJL.UU	0.00	8			14. JJ.41

Name	M.	ID	R	esult. PW	/L		Lw / L	i	Op	erating Ti	me	Height	:	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		AC85	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240078.59	2274939.90	1753.32
POINTSOURCE		AC86	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239744.95	2274929.23	1753.32
POINTSOURCE		AC87	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6239760.97	2274464.80	1753.32
POINTSOURCE		AC88	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240067.92	2274459.46	1756.60
POINTSOURCE		AC89	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240441.59	2274456.79	1753.32
POINTSOURCE		AC90	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6240855.31	2274459.46	1753.32
POINTSOURCE		AC91	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241215.64	2274454.12	1753.32
POINTSOURCE		AC92	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241212.97	2274982.61	1763.44
POINTSOURCE		AC93	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241957.66	2275086.71	1821.17
POINTSOURCE		AC94	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241882.45	2274963.09	1821.17
POINTSOURCE		AC95	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6242048.41	2276167.70	1749.06
POINTSOURCE		AC96	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6242048.41	2275922.14	1749.06
POINTSOURCE		AC97	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6242061.75	2275649.89	1753.55
POINTSOURCE		AC98	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241848.22	2275521.77	1764.37
POINTSOURCE		AC99	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6241850.89	2275778.01	1755.05
POINTSOURCE		CAR00	87.8	87.8	87.8	Lw	87.8					5.00	r	6241869.52	2276466.13	1699.00
POINTSOURCE		CAR01	87.8	87.8	87.8	Lw	87.8					5.00	r	6241721.09	2276471.34	1701.01
POINTSOURCE		CAR01	87.8	87.8	87.8	Lw	87.8					5.00	r	6241302.59	2273946.43	1748.83
POINTSOURCE		CAR02	87.8	87.8	87.8	Lw	87.8					5.00	r	6241222.05	2273991.06	1748.02
POINTSOURCE		CAR03	87.8	87.8	87.8	Lw	87.8					5.00	r	6241113.20	2273987.79	1745.44
POINTSOURCE		CAR04	87.8	87.8	87.8	Lw	87.8					5.00	r	6241019.59	2273986.70	1743.23
POINTSOURCE		CAR05	87.8	87.8	87.8	Lw	87.8					5.00	r	6238485.54	2274205.09	1689.37
POINTSOURCE		CAR06	87.8	87.8	87.8	Lw	87.8					5.00	r	6238451.82	2274269.72	1687.05
POINTSOURCE		CAR07	87.8	87.8	87.8	Lw	87.8					5.00	r	6238423.72	2274337.16	1685.71
POINTSOURCE		CAR08	87.8	87.8	87.8	Lw	87.8					5.00	r	6238375.95	2274955.37	1700.35
POINTSOURCE		CAR09	87.8	87.8	87.8	Lw	87.8					5.00	r	6238395.62	2275025.63	1699.74
POINTSOURCE		CAR10	87.8	87.8	87.8	Lw	87.8					5.00	r	6238415.29	2275090.26	1697.65
POINTSOURCE		CAR11	87.8	87.8	87.8	Lw	87.8					5.00	r	6242206.99	2276603.36	1687.05
POINTSOURCE		CAR12	87.8	87.8	87.8	Lw	87.8					5.00	r	6242050.89	2276603.36	1695.36
POINTSOURCE		CAR13	87.8	87.8	87.8	Lw	87.8					5.00	r	6241880.33	2276603.36	1694.00
POINTSOURCE		CAR14	87.8	87.8	87.8	Lw	87.8					5.00	r	6241611.48	2276768.14	1684.54
POINTSOURCE		CAR15	87.8	87.8	87.8	Lw	87.8					5.00	r	6241608.58	2276947.37	1674.17
POINTSOURCE		CAR16	87.8	87.8	87.8	Lw	87.8					5.00	r	6241290.59	2276603.36	1704.70
POINTSOURCE		CAR17	87.8	87.8	87.8	Lw	87.8					5.00	r	6241177.85	2276606.25	1707.01
POINTSOURCE		CAR18	87.8	87.8	87.8	Lw	87.8					5.00	r	6241059.32	2276609.14	
POINTSOURCE		CAR19	87.8	87.8	87.8	Lw	87.8					5.00	r	6240553.42	2276614.92	1703.10
POINTSOURCE		CAR20	87.8	87.8	87.8	Lw	87.8					5.00	r	6240423.33	2276614.92	1692.96
POINTSOURCE		CAR21	87.8	87.8	87.8	Lw	87.8					5.00	r	6240275.90	2276614.92	1687.74
POINTSOURCE		CAR22	87.8	87.8	87.8	Lw	87.8					5.00	r	6239775.78	2276609.14	1679.93
POINTSOURCE		CAR23	87.8	87.8	87.8	Lw	87.8					5.00	r	6239637.02	2276606.25	1685.60
POINTSOURCE		CAR24	87.8	87.8	87.8	Lw	87.8					5.00	r	6239483.80	2276609.14	1682.01
POINTSOURCE		CAR25	87.8	87.8	87.8	Lw	87.8					5.00	r	6239191.82	2276496.40	1667.09
POINTSOURCE		CAR26	87.8	87.8	87.8	Lw	87.8					5.00	r	6239212.06	2276320.05	1669.29
POINTSOURCE		CAR27	87.8	87.8	87.8	Lw	87.8					5.00	r	6239238.08	2276123.48	1679.84
POINTSOURCE		CAR28	87.8	87.8	87.8	Lw	87.8					5.00	r	6239041.50	2275990.50	1675.25
POINTSOURCE		CAR29	87.8	87.8	87.8	Lw	87.8					5.00	r	6239139.79	2275924.01	1683.88
POINTSOURCE		CAR30	87.8	87.8	87.8	Lw	87.8					5.00	r	6239055.95	2275678.28	1688.87
POINTSOURCE		CAR31	87.8	87.8	87.8	Lw	87.8					5.00	r	6239009.70	2275565.54	1683.45
POINTSOURCE		CAR32	87.8	87.8	87.8	Lw	87.8					5.00	r	6238804.45	2275447.01	1675.14
POINTSOURCE		CAR33	87.8	87.8	87.8	Lw	87.8					5.00	r	6238975.01	2275409.43	1679.02
POINTSOURCE		CAR34	87.8	87.8	87.8	Lw	87.8					5.00	r	6242056.67	2275039.40	1766.44
POINTSOURCE		CAR35	87.8	87.8	87.8		87.8					5.00	r	6241883.22	2275192.62	
POINTSOURCE		CAR36	87.8	87.8	87.8	Lw	87.8					5.00	r	6241709.76	2275195.51	1768.20
POINTSOURCE		CAR37	87.8	87.8	87.8	Lw	87.8					5.00	r	6241625.93	2274981.58	1780.97
POINTSOURCE		CAR38	87.8	87.8	87.8	Lw	87.8					5.00	r	6241625.93	2274828.37	1775.66
POINTSOURCE		CAR39	87.8	87.8	87.8	Lw	87.8					5.00	r	6241628.82	2274692.50	1773.16
POINTSOURCE		CAR40	87.8	87.8	87.8	Lw	87.8					5.00	r	6241649.06	2274487.25	1776.43
POINTSOURCE		CAR41	87.8	87.8	87.8	Lw	87.8					5.00	r	6240773.12	2273987.13	1756.41
POINTSOURCE		CAR42	87.8	87.8	87.8	Lw	87.8					5.00	r	6240619.91	2273990.02	1755.00
POINTSOURCE		CAR43	87.8	87.8	87.8	Lw	87.8					5.00	r	6240469.58	2273995.80	1758.80
POINTSOURCE		CAR44	87.8	87.8	87.8	Lw	87.8					5.00	r	6240443.57	2273854.15	1753.34
POINTSOURCE		CAR45	87.8	87.8	87.8	Lw	87.8					5.00	r	6240316.37	2273851.26	1761.75
POINTSOURCE		CAR46	87.8	87.8	87.8	Lw	87.8					5.00	r	6240215.19	2273990.02	1761.34
POINTSOURCE		CAR47	87.8	87.8	87.8	Lw	87.8					5.00	r	6240076.43	2273992.91	1753.28
POINTSOURCE		CAR48	87.8	87.8	87.8	Lw	87.8					5.00	r	6239949.23	2273990.02	1744.87
POINTSOURCE		CAR49	87.8	87.8	87.8	Lw	87.8					5.00	r	6239637.02	2273241.28	1719.13
POINTSOURCE		CAR50	87.8	87.8	87.8	Lw	87.8					5.00	r	6239556.07	2273351.14	1720.34
POINTSOURCE		CAR51	87.8	87.8	87.8	Lw	87.8					5.00	r	6239437.55	2273591.08	1716.45
POINTSOURCE		CAR52	87.8	87.8	87.8	Lw	87.8					5.00	r	6239376.84	2273677.80	1715.66
POINTSOURCE		CAR53	87.8	87.8	87.8	Lw	87.8					5.00	r	6239408.64	2273796.33	
POINTSOURCE		CAR54	87.8	87.8	87.8	Lw	87.8					5.00	r	6238920.08	2274024.71	1705.92
POINTSOURCE		CAR55	87.8	87.8	87.8	Lw	87.8					5.00	r	6238995.24	2274073.85	
POINTSOURCE		CAR56	87.8	87.8	87.8	Lw	87.8					5.00	r	6238896.95	2274143.23	
POINTSOURCE		CAR57	87.8	87.8	87.8	Lw	87.8					5.00	r	6239024.15	2274380.28	
POINTSOURCE		CAR58	87.8	87.8	87.8	Lw	87.8					5.00	r	6239018.37	2274495.92	
FORMISOURCE				· · ·					1	I			-			
POINTSOURCE		CAR59	87.8	87.8	87.8	Lw	87.8					5.00	r	6239018.37	2274605.77	1/10.1/

Name	M. ID	R	esult. PW	/L		Lw/L	i	Op	erating Ti	ime	Height		Co	oordinates	
		Day	Evening	Night	Туре	, Value		Day	Special	Night			Х	Y	Z
		(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE	CAR61	87.8	87.8	87.8	Lw	87.8					5.00	r	6239024.15	2274929.55	1697.72
POINTSOURCE	CAR62	87.8	87.8	87.8	Lw	87.8					5.00	r	6239018.37	2275050.96	
POINTSOURCE	CAR63	87.8	87.8	87.8	Lw	87.8					5.00	r	6238896.95	2275212.85	1696.85
POINTSOURCE	CAR64	87.8	87.8	87.8	Lw	87.8					5.00	r	6238714.83	2275212.85	1705.75
POINTSOURCE	CAR65	87.8	87.8	87.8	Lw	87.8					5.00	r	6239537.34		1700.21
POINTSOURCE	CAR66	87.8	87.8	87.8	Lw	87.8					5.00	r	6239442.03	2275727.83	
POINTSOURCE	CAR67	87.8	87.8 87.8	87.8	Lw	87.8					5.00 5.00	r r	6239325.92	2275731.30 2275882.07	<u> </u>
POINTSOURCE	CAR68 CAR69	87.8 87.8	87.8	87.8 87.8	LW	87.8 87.8						r r	6239523.48 6239393.50	2275878.60	
POINTSOURCE	CAR09 CAR70	87.8	87.8	87.8	LW	87.8					5.00	r	6239535.30	2276044.97	
POINTSOURCE	CAR71	87.8	87.8	87.8	Lw	87.8						r	6239412.57		1685.99
POINTSOURCE	CAR72	87.8	87.8	87.8	Lw	87.8					5.00	r	6239539.07	2276204.40	
POINTSOURCE	CAR73	87.8	87.8	87.8	Lw	87.8						r	6239438.56	2276207.87	
POINTSOURCE	CAR74	87.8	87.8	87.8	Lw	87.8					5.00	r	6241398.57	2275710.50	1735.28
POINTSOURCE	CAR75	87.8	87.8	87.8	Lw	87.8					5.00	r	6241258.20	2275713.97	1743.88
POINTSOURCE	CAR76	87.8	87.8	87.8	Lw	87.8					5.00	r	6241395.11	2275889.00	1728.40
POINTSOURCE	CAR77	87.8	87.8	87.8	Lw	87.8					5.00	r	6241265.13	2275890.73	1736.26
POINTSOURCE	CAR78	87.8	87.8	87.8	Lw	87.8					5.00	r	6241386.44	2276064.03	1721.03
POINTSOURCE	CAR79	87.8	87.8	87.8	Lw	87.8					5.00	r	6241258.20	2276069.23	1728.64
POINTSOURCE	CAR80	87.8	87.8	87.8	Lw	87.8					5.00	r	6241376.04	2276242.53	1718.77
POINTSOURCE	CAR81	87.8	87.8	87.8	Lw	87.8					5.00	r	6241253.00	2276239.06	
POINTSOURCE	CAR82	87.8	87.8	87.8	Lw	87.8						r	6239285.61	2274192.98	
POINTSOURCE	CAR83	87.8	87.8	87.8	Lw	87.8					5.00	r	6239228.32	2274269.80	
POINTSOURCE	CAR84	87.8	87.8	87.8	Lw	87.8						r	6239288.21	2274359.65	
POINTSOURCE	CAR85	87.8	87.8	87.8	Lw	87.8					5.00	r	6239227.01	2274426.05	
POINTSOURCE	CAR86	87.8	87.8	87.8	Lw	87.8					5.00	r	6239289.51		1715.13
POINTSOURCE	CAR87 CAR88	87.8 87.8	87.8 87.8	87.8 87.8	Lw	87.8 87.8					5.00 5.00	r r	6239227.01 6239292.12	2274676.05 2274772.41	1708.87 1705.70
POINTSOURCE	CAR88 CAR89	87.8	87.8	87.8 87.8	Lw Lw	87.8 87.8					5.00	r r	6239292.12	2274772.41	1686.86
POINTSOURCE	CAR90	87.8	87.8	87.8	Lw	87.8					5.00	r	6239290.82	2275039.34	
POINTSOURCE	CAR91	87.8	87.8	87.8	Lw	87.8						r	6239228.32	2275105.74	
POINTSOURCE	CAR92	87.8	87.8	87.8	Lw	87.8					5.00	r	6242262.75	2275385.40	
POINTSOURCE	CAR93	87.8	87.8	87.8	Lw	87.8						r	6242132.54	2275393.22	
POINTSOURCE	CAR94	87.8	87.8	87.8	Lw	87.8						r	6242007.54	2275395.82	
POINTSOURCE	CAR95	87.8	87.8	87.8	Lw	87.8						r	6241887.75	2275401.03	
POINTSOURCE	CAR96	87.8	87.8	87.8	Lw	87.8					5.00	r	6241770.57	2275401.03	1764.51
POINTSOURCE	CAR97	87.8	87.8	87.8	Lw	87.8					5.00	r	6242374.73	2276466.13	1705.85
POINTSOURCE	CAR98	87.8	87.8	87.8	Lw	87.8					5.00	r	6242208.07	2276463.53	1697.35
POINTSOURCE	CAR99	87.8	87.8	87.8	Lw	87.8					5.00	r	6242017.96	2276466.13	1696.21
POINTSOURCE	SPORTS01	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238394.63	2275269.77	1683.24
POINTSOURCE	SPORTS02	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238287.25		1693.17
POINTSOURCE	SPORTS03	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238184.16		1693.00
POINTSOURCE	SPORTS04	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238102.56	2275085.08	
POINTSOURCE	SPORTS05	81.1	81.1	81.1	Lw	81.1		900.00 900.00	0.00	0.00	5.00 5.00	r	6238257.18		1692.09
POINTSOURCE	SPORTS06 SPORTS07	81.1 81.1	81.1 81.1	81.1 81.1	Lw	81.1 81.1		900.00	0.00	0.00	5.00	r r	6238192.75 6238003.77		1686.22 1674.21
POINTSOURCE	SPORTS07	81.1	81.1	81.1	LW	81.1		900.00	0.00	0.00	5.00	r	6238003.77	2274904.88	-
POINTSOURCE	SPORTS09	-	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00				
POINTSOURCE	SPORTS10		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238218.53		
POINTSOURCE	SPORTS11		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238003.77	2274432.22	
POINTSOURCE	SPORTS12		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238205.64		
POINTSOURCE	SPORTS13		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238519.19	2274092.90	
POINTSOURCE	SPORTS14		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238338.79	2274114.37	
POINTSOURCE	SPORTS15	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238085.38	2274148.73	1670.56
POINTSOURCE	SPORTS16	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6237887.80	2274299.07	
POINTSOURCE	SPORTS17	-	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6237840.55	2274535.30	
POINTSOURCE	SPORTS18		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6237827.67	2274797.30	
POINTSOURCE	SPORTS19	-	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6237857.73	2275020.65	
POINTSOURCE	SPORTS20	-	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6237947.93	2275192.46	
POINTSOURCE	SPORTS21	-	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6237900.68	2275432.99	
POINTSOURCE	SPORTS22	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238111.15		
POINTSOURCE	SPORTS23		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238317.31	2275415.81	
	SPORTS24	-	81.1 81.1	81.1 81.1	Lw	81.1 81.1		900.00 900.00	0.00	0.00		r r	6238583.62		
POINTSOURCE	SPORTS25 SPORTS26	-	81.1	81.1	Lw Lw	81.1		900.00	0.00	0.00		r r	6238544.96 6238420.40		
POINTSOURCE	SPORTS26	81.1	81.1	81.1	LW	81.1		900.00	0.00	0.00		r r	6238420.40	2275566.14	
POINTSOURCE	SPORTS27	-	81.1	81.1	LW	81.1		900.00	0.00	0.00	5.00	r	6238660.93	2275793.78	
POINTSOURCE	SPORTS28	81.1	81.1	81.1	LW	81.1		900.00	0.00	0.00		r	6238733.95	2276060.08	
POINTSOURCE	SPORTS30	-	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238742.54	2276249.07	
POINTSOURCE	SPORTS31	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238824.14		
POINTSOURCE	SPORTS32	-	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238682.40		
POINTSOURCE	SPORTS33		81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6238764.01	2276498.19	
POINTSOURCE	SPORTS34	1	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6239778.15	2273943.70	
	SPORTS35	1	81.1	81.1	Lw	81.1		900.00	0.00	0.00		r	6239772.09		
POINTSOURCE					1				0.00	0.00		r			
POINTSOURCE POINTSOURCE	SPORTS36	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00		6239776.13	2273577.98	µ/35./3
	SPORTS36 SPORTS37	81.1 81.1	81.1 81.1	81.1 81.1	LW	81.1		900.00	0.00	0.00		r	6239776.13		

Name	M.	ID	R	esult. PW	/L		Lw/L	i	Op	erating Ti	ime	Height	:	Ci	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		SPORTS39	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237884.19	2274129.21	1679.32
POINTSOURCE		SPORTS40	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237808.32	2275320.68	
POINTSOURCE		SPORTS41	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237684.67	2275750.62	
POINTSOURCE		SPORTS42	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237577.89	2275621.36	
POINTSOURCE		SPORTS42	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237709.96	2275494.91	
				81.1	81.1	LW	81.1			0.00	0.00	5.00	r	6237704.34		
POINTSOURCE		SPORTS44	81.1	-					900.00				-		2275166.13	
POINTSOURCE		SPORTS45	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237586.32	2275309.44	
POINTSOURCE		SPORTS46	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238836.80	2276607.69	
POINTSOURCE		SPORTS47	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238592.33	2276155.27	
POINTSOURCE		SPORTS48	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238241.07	2275576.40	
POINTSOURCE		SPORTS49	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237982.54	2275570.78	1671.94
POINTSOURCE		SPORTS50	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237836.42	2275705.66	1662.90
POINTSOURCE		SPORTS51	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238718.78	2273845.40	1689.93
POINTSOURCE		SPORTS52	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238612.00	2273985.90	1686.40
POINTSOURCE		SPORTS53	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238527.69	2273859.45	1684.62
POINTSOURCE		SPORTS54	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238361.90	2273980.28	1681.09
POINTSOURCE		SPORTS55	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238269.17	2273853.83	1685.61
POINTSOURCE		SPORTS56	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238125.85	2273974.66	1686.06
POINTSOURCE		SPORTS57	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237990.97	2273865.07	1694.74
POINTSOURCE		SPORTS58	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237850.47	2273991.52	1689.71
POINTSOURCE		SPORTS59	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237709.96	2273865.07	1682.40
POINTSOURCE		SPORTS60	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237566.65	2273991.52	
POINTSOURCE		SPORTS61	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237718.39	2274137.64	
POINTSOURCE		SPORTS62	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237569.46	2274233.19	
POINTSOURCE		SPORTS63	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237707.15	2274233.13	
POINTSOURCE		SPORTS64	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r			
														6237575.08	2274500.14 2274657.51	
POINTSOURCE		SPORTS65	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237707.15		
POINTSOURCE		SPORTS66	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237566.65	2274767.10	
POINTSOURCE		SPORTS67	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237701.53	2274935.70	
POINTSOURCE		SPORTS68	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6237575.08	2275036.87	
POINTSOURCE		SPORTS69	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238103.37	2275705.66	
POINTSOURCE		SPORTS70	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238297.27	2275708.47	
POINTSOURCE		SPORTS71	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238587.63	2275926.90	
POINTSOURCE		SPORTS72	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238580.41	2276317.71	
POINTSOURCE		SPORTS73	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238676.20	2276595.13	1650.93
POINTSOURCE		SPORTS74	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238448.87	2275819.93	1659.36
POINTSOURCE		SPORTS75	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238469.11	2276051.20	1654.53
POINTSOURCE		SPORTS76	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238460.43	2276236.22	1649.28
POINTSOURCE		SPORTS77	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238457.54	2276421.23	1644.06
POINTSOURCE		SPORTS78	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238567.09	2276496.66	1645.92
POINTSOURCE		SPORTS79	81.1	81.1	81.1	Lw	81.1		900.00	0.00	0.00	5.00	r	6238457.54	2276612.03	1641.28
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6236480.19	2275238.87	1218.74
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6239651.47	2273388.72	1725.42
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6238972.12	2274186.60	1711.78
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6238905.63	2275394.98	1675.04
POINTSOURCE		TRASH05	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6239151.35	2276626.49	1663.54
POINTSOURCE		TRASH06	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6239848.05	2275493.27	1713.58
POINTSOURCE		TRASH07	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6239671.71	2275198.40	
POINTSOURCE		TRASH08	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00			2273197.92	
POINTSOURCE		TRASH09	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	_	6240273.01		
POINTSOURCE		TRASH10	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	_	6241579.68		
POINTSOURCE		TRASH11	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	_	6242472.95		
POINTSOURCE		TRASH12	89.0	89.0	89.0		89.0		150.00	0.00	90.00	5.00	_	6241810.94		
POINTSOURCE		TRASH12	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	_	6241004.39	2276603.36	
POINTSOURCE		TRASH15	89.0	89.0	89.0		89.0 89.0		150.00	0.00	90.00	5.00	_	6240229.64	2276603.36	
POINTSOURCE		TRASH14 TRASH15	89.0	89.0	89.0	Lw Lw	89.0 89.0		150.00	0.00	90.00	5.00	r	6239440.44		
								<u> </u>					-		2276603.36	
POINTSOURCE		TRASH16	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6241395.51	2274002.18	
POINTSOURCE		TRASH17	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6239907.95	2276347.78	
POINTSOURCE		TRASH18	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r	6239679.89 6241612.38	2274201.46	
POINTSOURCE		TRASH19	89.0	89.0	89.0	Lw	89.0		150.00	0.00	90.00	5.00	r		2275660.67	

# Line Source(s)

		.,										•					<b>D</b> 1 <b>C</b>			
Name	М.	ID	R	esult. PW	<u></u>	R	esult. PW	Ľ.		Lw / Li		Ор	erating Ti	me		Moving	Pt. Src		Heigh	۱t
			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	106.2	91.1	97.2	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK02	105.4	90.3	96.3	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK03	109.9	94.8	100.9	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK04	103.8	88.8	94.8	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK05	100.7	85.6	91.7	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK06	106.3	91.2	97.2	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK07	105.7	90.6	96.6	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK08	107.7	92.7	98.7	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK09	108.3	93.2	99.3	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK10	107.3	92.2	98.3	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK11	108.7	93.6	99.6	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r

Name	M.	ID	R	esult. PW	Ľ	R	esult. PW	Ľ		Lw / Li		Op	erating Ti	me		Moving	Pt. Src		Heig	ht
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE		TRUCK12	104.5	89.4	95.5	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK13	118.5	103.4	109.5	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK14	120.3	105.2	111.2	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r
LINESOURCE		TRUCK15	102.3	87.2	93.2	85.7	70.6	76.7	PWL-Pt	93.2					1777.0	55.0	222.0	6.2	8	r

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	x	У	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	r		6242442.37	2275605.20	1716.61	1708.61
					6242447.65	2275421.86	1727.44	1719.43
					6242391.35	2275244.31	1741.03	1733.03
LINESOURCE	TRUCK02	8.00	r		6241624.56	2275601.96	1750.03	1742.03
					6241625.14	2275298.49	1763.05	1755.05
LINESOURCE	TRUCK03	8.00	r		6242369.67	2276494.22	1706.29	1698.29
					6241499.65	2276499.68	1704.71	1696.71
LINESOURCE	TRUCK04	8.00	r		6241645.52	2276277.47	1711.44	1703.44
					6241647.10	2276491.31	1698.27	1690.27
LINESOURCE	TRUCK05	8.00	r		6241346.81	2275195.83	1770.03	1762.03
					6241351.03	2275299.76		1758.00
LINESOURCE	TRUCK06	8.00	r		6239619.09	2274281.60	1732.35	1724.35
2	into citto o	0.00				2274277.62		1725.00
					6239443.16	2274265.90	1732.87	1724.87
					6239435.35	2274255.48		1724.59
			-		6239430.14	2274233.48	1731.94	1724.55
			-	$\vdash$	6239427.62	2274075.45	1725.07	1723.34
LINESOURCE	TRUCKOZ	8.00	r		6239617.40	2275166.68	1718.49	1710.49
LINESOURCE	TRUCKUT	8.00			6239434.05	2275170.85	1716.91	1710.49
					6239434.03	2275251.38		
							1722.12	1714.12 1715.31
	TRUCKOR	8.00	~		6239422.25	2275311.27	1723.32	
LINESOURCE	TRUCKU8	8.00	r		6240976.24	2276330.07	1725.02	1717.02
	70110100	0.00			6241502.00	2276329.19	1709.73	1701.73
LINESOURCE	TRUCK09	8.00	r		-	2275562.96	1774.15	1766.15
					6241351.78	2275564.93	1748.12	1740.12
						2275299.76		
LINESOURCE	TRUCK10	8.00	r		6239829.54	2276329.76	1697.73	1689.73
					6239356.00	2276320.90		1671.54
LINESOURCE	TRUCK11	8.00	r		6239806.70	2275557.97	1713.88	1705.88
					6239157.93	2275561.08	1696.15	1688.15
LINESOURCE	TRUCK12	8.00	r		6239433.38	2275559.06	1706.07	1698.07
					6239425.70	2275308.68	1723.56	1715.56
LINESOURCE	TRUCK13	8.00	r		6245311.50	2275489.15	1609.78	1601.78
					6244654.37	2275259.39	1623.01	1615.01
					6244493.54	2275222.62	1617.21	1609.21
					6244102.94	2275176.67	1649.11	1641.11
					6243091.97	2275107.74	1704.97	1696.97
					6242885.18	2275112.34	1716.88	1708.88
					6242352.13	2275254.79	1743.22	1735.22
					6242131.56	2275296.15	1747.27	1739.27
					6239153.81	2275309.93	1696.77	1688.77
LINESOURCE	TRUCK14	8.00	r		6241502.02	2275299.06	1758.16	1750.16
					6241499.65	2276499.68	1704.71	1696.71
			L		6239346.81	2276504.71	1678.61	1670.61
					6239356.00	2276320.90	1679.54	1671.54
					6239356.00	2276160.06	1681.30	1673.30
					6239282.48	2275930.30	1692.80	1684.79
					6239163.00	2275627.01	1693.10	1685.10
					6239153.81	2275507.53	1698.69	
					-	2275309.93		
					6239144.62	2274073.80		
						2274087.59		
					6241502.08			1750.16
LINESOURCE	TRUCK15	8.00	r		6242369.67			1698.29
		5.00	ŀ		6242425.06		1705.22	1697.22
			-	$\vdash$	6242439.20		1708.80	1700.80
			-		6242435.16		1714.17	
			_		0242435.10	2210393.62	1/14.1/	1706.17

# Area Source(s)

Name	М.	ID	R	esult. PW	'L	Re	esult. PW	L''		Lw / L	i	Op	erating Ti	me	Height	
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE		DOCK01	111.5	111.5	111.5	70.2	70.2	70.2	Lw	111.5					8	r
AREASOURCE		DOCK02	111.5	111.5	111.5	71.0	71.0	71.0	Lw	111.5					8	r
AREASOURCE		DOCK03	111.5	111.5	111.5	62.5	62.5	62.5	Lw	111.5					8	r
AREASOURCE		DOCK04	111.5	111.5	111.5	69.2	69.2	69.2	Lw	111.5					8	r
AREASOURCE		DOCK05	111.5	111.5	111.5	66.8	66.8	66.8	Lw	111.5					8	r
AREASOURCE		DOCK06	111.5	111.5	111.5	76.7	76.7	76.7	Lw	111.5					8	r

Name	М.	ID	R	esult. PW	Ľ	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)	П
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		Π
AREASOURCE		DOCK07	111.5	111.5	111.5	76.7	76.7	76.7	Lw	111.5					8	r
AREASOURCE		DOCK08	111.5	111.5	111.5	77.4	77.4	77.4	Lw	111.5					8	r
AREASOURCE		DOCK09	111.5	111.5	111.5	74.6	74.6	74.6	Lw	111.5					8	r
AREASOURCE		DOCK10	111.5	111.5	111.5	76.7	76.7	76.7	Lw	111.5					8	r
AREASOURCE		DOCK11	111.5	111.5	111.5	77.1	77.1	77.1	Lw	111.5					8	r
AREASOURCE		DOCK12	111.5	111.5	111.5	77.8	77.8	77.8	Lw	111.5					8	r
AREASOURCE		DOCK13	111.5	111.5	111.5	80.1	80.1	80.1	Lw	111.5					8	r
AREASOURCE		DOCK14	111.5	111.5	111.5	81.6	81.6	81.6	Lw	111.5					8	r
AREASOURCE		DOCK15	111.5	111.5	111.5	80.2	80.2	80.2	Lw	111.5					8	r
AREASOURCE		DOCK16	111.5	111.5	111.5	80.1	80.1	80.1	Lw	111.5					8	r
AREASOURCE		DOCK17	111.5	111.5	111.5	77.7	77.7	77.7	Lw	111.5					8	r

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	x	у	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	DOCK01	8.00	r		6242523.17	2276395.82	1711.66	1703.66
					6242523.17	2275606.76	1712.23	1704.23
					6242387.75	2275604.15	1722.46	1714.46
					6242343.48	2275601.55	1727.32	1719.32
					6242342.22	2276395.82	1711.75	1703.75
AREASOURCE	DOCK02	8.00	r		6241744.52	2275596.34	1765.34	1757.34
					6241697.65	2275596.34	1758.16	1750.16
					6241562.23	2275606.76	1745.52	1737.52
					6241560.27	2276275.40	1709.80	1701.80
					6241738.08	2276275.40	1713.38	1705.38
AREASOURCE	DOCK03	8.00	r		6239614.28	2275247.35	1724.81	1716.81
					6241290.20	2275247.35	1769.56	1761.56
					6241290.20	2275195.83	1771.09	1763.09
					6241441.53	2275195.83	1765.71	1757.71
					6241443.59	2274196.67	1760.32	1752.32
					6241390.43	2274139.16	1760.31	1752.31
					6239617.64	2274135.69	1735.00	1727.00
					6239619.52	2274325.51	1730.94	1722.94
					6239619.52	2274380.19	1729.51	1721.51
					6241314.84	2274377.59	1756.65	1748.65
					6241307.02	2275067.69	1770.89	1762.89
			_		6239619.52	2275057.28	1710.29	1702.29
	DOCKOA	0.00			6239619.52	2275111.97	1712.97	1704.97
AREASOURCE	DOCK04	8.00	r		6239830.54		1698.71	1690.71
					6239831.67	2276402.33 2276403.84	1694.06	1686.06 1711.20
					6240970.20 6240972.08		1719.20	-
					6240972.08	2276319.85 2276242.53	1725.39 1730.32	1717.39 1722.32
			_		-		1730.32	1693.63
	DOCKOE	8.00	r		6239826.75 6239804.22	2276245.99 2275719.17	1713.00	1705.00
AREASOURCE	DUCKUS	8.00			6241017.31	2275719.17	1713.00	1762.25
			_		6241019.05	2275632.41	1772.00	1764.00
					6241025.98		1775.22	1767.22
			_		6239807.69	2275454.02	1717.84	1709.84
					6239805.96		1712.95	1704.95
AREASOURCE	DOCK06	8.00	r		6239445.01	2276763.44	1678.33	1670.33
					6239828.98	2276761.88	1677.58	1669.58
					6239827.42	2276676.38	1681.41	1673.41
					6239446.56	2276681.05	1681.52	1673.52
AREASOURCE	DOCK07	8.00	r		6240222.28	2276761.88	1683.98	1675.98
					6240604.69	2276763.44	1703.73	1695.73
					6240606.25	2276681.05	1706.32	1698.32
					6240217.61	2276676.38	1688.13	1680.13
AREASOURCE	DOCK08	8.00	r		6240997.99	2276755.66	1697.55	1689.55
					6241327.55	2276757.22	1694.90	1686.90
					6241329.10	2276673.27	1700.26	1692.26
					6240994.88	2276674.83	1702.70	1694.70
AREASOURCE	DOCK09	8.00	r		6241801.68	2276758.77	1690.63	1682.63
					6242407.95	2276761.88	1675.80	1667.80
						2276676.38		
						2276673.27	1695.29	1687.29
AREASOURCE	DOCK10	8.00	r		6240197.76			
					6240258.89		1767.60	1759.60
			-		6240250.47			1731.83
			_		6240194.87			1732.43
AREASOURCE	DOCK11	8.00	r		6240516.01			1749.99
			-			2273935.66		1750.78
			-		6240570.94			1729.73
	DOCKAS	0.00			6240518.90			1731.14
AREASOURCE	DUCK12	8.00	r		6241678.78			1771.31
			-		6241742.62			
L					6241742.38	2274659.63	1781.54	1773.54

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
					6241680.15	2274657.23	1778.32	1770.32
AREASOURCE	DOCK13	8.00	r		6239150.79	2276591.79	1667.08	1659.08
					6239187.55	2276588.06	1669.44	1661.44
					6239183.32	2276184.67	1676.62	1668.62
					6239147.42	2276182.56	1675.23	1667.23
AREASOURCE	DOCK14	8.00	r		6239062.73	2275754.63	1695.62	1687.62
					6238970.27	2275539.24	1684.14	1676.14
					6238933.55	2275554.70	1679.55	1671.55
					6239014.72	2275771.16	1693.02	1685.02
AREASOURCE	DOCK15	8.00	r		6238996.59	2275097.39	1698.37	1690.37
					6238999.59	2274799.33	1704.43	1696.43
					6238950.88	2274795.72	1703.83	1695.83
					6238948.28	2275096.99	1704.78	1696.78
AREASOURCE	DOCK16	8.00	r		6239002.54	2274337.16	1713.17	1705.17
					6238955.76	2274337.16	1712.78	1704.78
					6238953.55	2274644.53	1709.33	1701.33
					6239003.36	2274641.26	1710.15	1702.15
AREASOURCE	DOCK17	8.00	r		6239681.14	2273945.65	1735.13	1727.13
					6239742.87	2273945.65	1738.86	1730.86
					6239742.87	2273528.93	1735.00	1727.00
					6239681.14	2273528.93	1731.22	1723.22

#### Barrier(s)

Name	Sel.	М.	ID	Abso	rption	Z-Ext.	Cant	ilever	н	eig	ht		Coordinat	es	
				left	right		horz.	vert.	Begin	T	End	x	У	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERTEMP			0						12.00	r		6241619.28	2276276.70	1715.25	1703.25
										Τ		6241560.27	2276275.40	1713.80	1701.8
										Τ		6241562.23	2275606.76	1749.52	1737.5
												6241607.61	2275603.27	1752.51	1740.5
BARRIERTEMP			0						12.00	r		6242466.84	2275605.67	1718.81	1706.8
										1		6242523.17	2275606.76	1716.23	1704.2
												6242523.17	2276395.82	1715.66	1703.6
BARRIERTEMP			0						12.00	r		6239618.82	2274254.19	1737.21	1725.2
										1		6239617.64	2274135.69	1739.00	1727.0
										1		6241390.43	2274139.16	1764.31	1752.3
										+		6241443.59	2274196.67	1764.32	1752.3
										+		6241441.53	2275195.83	1769.71	1757.7
										+		6241370.24		1773.42	1761.4
BARRIERTEMP	<u> </u>		0						12.00	r		6241320.76	2275195.83	1774.81	1762.8
5,			Ŭ						12.00	•		6241290.20	2275195.83	1775.09	1763.0
	-									+		6241290.20	2275247.35	1773.56	1761.5
	-									+		6239614.28	2275247.35	1728.81	1716.8
										+		6239616.39	2275192.88	1725.34	1713.3
BARRIERTEMP	-		0						12.00	-		6241023.21	2275528.36	1725.54	1713.3
DARKIEKTEIVIP	-		0						12.00	+		6241025.98	2275459.22	1779.22	1767.2
	-									+					
	-									+		6239807.69		1721.84	
	<u> </u>		-							+		6239807.06	2275519.85	1719.16	1707.1
BARRIERTEMP			0						12.00	r		6239827.11	2276339.88	1701.13	1689.1
										+		6239827.95	2276405.44	1697.68	
										+		6240973.00	2276407.47	1723.12	1711.1
	<u> </u>									+		6240974.89	2276345.91	1727.72	1715.7
BARRIEREXISTING			0						5.00	r		6238882.07	2277628.11	1643.70	1638.7
										_		6238877.20	2276996.83	1661.81	1656.8
										$\downarrow$		6238066.37	2276991.15	1631.36	1626.3
										$\downarrow$		6238064.75	2277022.83	1634.82	1629.8
BARRIEREXISTING			0						5.00	r		6238066.37	2276991.15	1631.36	1626.3
												6238064.75	2277022.83	1634.82	1629.8
												6238046.87	2277032.58	1635.01	1630.0
												6238045.25	2276933.46	1634.03	1629.0
BARRIEREXISTING			0						5.00	r		6238024.12	2276854.66	1635.69	1630.6
												6238063.12	2276844.91	1632.56	1627.5
												6238059.87	2276151.07	1653.37	1648.3
												6237201.11	2276149.45	1627.50	1622.5
										Τ		6237179.17	2273931.45	1649.43	1644.4
BARRIEREXISTING			0						5.00	r		6238855.26	2272183.86	1716.82	1711.8
										1		6241018.82	2272183.86	1792.84	1787.8
										1		6241019.64	2271965.31	1797.08	1792.0
BARRIEREXISTING		1	0						5.00	r		6241511.98	2272187.93	1801.43	1796.4
-										1		6241521.73	2272850.07	1768.60	1763.6
		1								+		6242187.13		1727.00	1722.0
	1	1								+		6242193.56	2273514.55	1769.86	1764.8
	-	-	$\vdash$							+		6244189.22	2273519.76	1664.00	1659.0
	-	-	$\vdash$							+		6244196.17	2274177.75	1665.80	1660.8
	-	-	$\vdash$							+		6245306.41	2274177.73	1625.64	1620.6
BARRIEREXISTING	-	-	0	<u> </u>					12.00	-		6239006.35	2274176.01	1717.56	1705.5

Name	Sel.	М.	ID	Abso	rption	Z-Ext.	Cant	ilever	н	ei	ght		Coordinat	es	
				left	right		horz.	vert.	Begin		End	x	У	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
												6239007.70	2274651.88	1713.56	1701.56
BARRIEREXISTING			0						12.00	r		6240534.88	2273207.16	1736.05	1724.05
												6240240.89	2273202.04	1732.21	1720.21

### Building(s)

Buildin	812	<u></u>						_				
	Sel.		ID	RB	Residents	Absorption	Height			Coordinat	:es	
							Begin		x	у	z	Ground
							(ft)	Π	(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00001	x	0		45.00	r	6241705.75	2276386.53	1744.06	1699.06
001201110		_	50125111000001	~			15.00	ŀ	6242342.22	2276395.82	1744.06	
									6242343.48	2275601.55	1744.06	
		_						$\square$				
									6242387.75	2275604.15	1744.06	-
									6242392.96	2275453.11	1744.06	
									6241692.44	2275450.51	1744.06	
									6241697.65	2275596.34	1744.06	1750.16
									6241744.52	2275596.34	1744.06	1757.34
									6241738.08	2276275.40	1744.06	1705.38
									6241699.69	2276275.40	1744.06	1704.65
BUILDING			BUILDING00002	х	0		45.00	r	6239392.96	2275109.36	1748.32	1703.32
									6239619.52	2275111.97	1748.32	1704.97
									6239619.52	2275057.28	1748.32	
									6241307.02	2275067.69	1748.32	1762.89
		_						$\square$				
									6241314.84	2274377.59	1748.32	
									6239619.52	2274380.19	1748.32	
									6239619.52	2274325.51	1748.32	
									6239392.96	2274333.32	1748.32	1722.99
BUILDING			BUILDING00003	х	0		45.00	r	6239596.26	2276313.58	1732.68	1687.68
									6239826.75	2276311.85	1732.68	1690.52
								Π	6239826.75	2276245.99	1732.68	1693.63
								Π	6240977.46	2276242.53	1732.68	1722.32
								Ħ	6240975.72	2276318.78	1732.68	
								H	6241171.55	2276320.51	1732.68	
									6241165.98	2275632.03	1732.68	
		_						$\vdash$				
								$\square$	6241019.05	2275632.41	1732.68	
									6241017.31	2275719.17	1732.68	
									6239804.22	2275719.17	1732.68	
									6239805.96	2275635.61	1732.68	1704.95
									6239587.66	2275636.18	1732.68	1702.00
BUILDING			BUILDING00004	х	0		45.00	r	6239327.57	2277018.96	1696.08	1651.08
									6239941.82	2277016.94	1696.08	1669.00
									6239941.58	2276682.64	1696.08	1674.41
									6239836.42	2276678.55	1696.08	1673.55
									6239835.40	2276765.90	1696.08	
									6239429.55	2276766.88	1696.08	1669.11
									6239431.59	2276680.59	1696.08	1672.49
		_						$\vdash$				
					-				6239333.58	2276680.59	1696.08	
BUILDING			BUILDING00005	х	0		45.00	r	6240101.44	2277018.96	1712.10	
									6240719.72	2277023.00	1712.10	1675.97
									6240727.56	2276681.62	1712.10	1698.27
									6240610.94	2276681.62	1712.10	1698.35
									6240608.65	2276768.31	1712.10	1695.65
									6240205.72	2276767.35	1712.10	1676.13
									6240207.55	2276677.51	1712.10	1680.63
									6240105.11	2276678.88	1712.10	
BUILDING			BUILDING00006	x	0		45.00	r	6241439.75	2276675.48	1734.99	
- 0.25110			_ 5.25600000	~			.5.00	Ĥ		2276675.48		
								H				
								$\parallel$		2276762.11		
								$\parallel$		2276760.30		
										2276674.68		
										2276678.29		
									6240878.45	2276962.08	1734.99	1674.02
									6241436.78	2276954.69	1734.99	1674.12
BUILDING			BUILDING00007	х	0		45.00	r	6241674.58	2276962.08	1719.16	1674.16
								Π		2276965.03		
								Ħ		2276764.15		
								Η		2276765.40		-
								Η		2276675.76		
								Η				
										2276676.48		1682.51
BUILDING			BUILDING00008	х	0		45.00	r	6241747.06			
										2275147.22		1754.37
									6242010.18	2274736.46	1816.17	1764.46
								Π	6241839.81	2274532.02	1816.17	1777.30
								Π		2274532.99		1772.60
								Η		2274650.13		
								Η		2274652.26		
			BUILDING00000	~			AE 00	Ŀ				
BUILDING			BUILDING00009	х	0		45.00	۱٢	0240574.05	2273939.95	1/90.24	1751.24

Name	Sel.	M.	ID	RB	Residents	Absorption	Height			Coordinat	es	
							Begin		х	У	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
									6240803.01	2273940.99	1796.24	1748.02
									6240794.67	2273205.84	1796.24	1734.35
									6240519.66	2273211.83	1796.24	1724.00
									6240519.66	2273364.65	1796.24	1730.65
									6240579.55	2273363.22	1796.24	1728.30
BUILDING			BUILDING00010	x	0		45.00	r	6240192.99	2273938.90	1805.17	1760.17
									6240188.03	2273357.67	1805.17	1731.62
									6240256.08	2273357.64	1805.17	1731.13
									6240253.28	2273204.82	1805.17	1720.58
									6239921.87	2273207.92	1805.17	1719.36
									6239922.92	2273937.86	1805.17	1739.82
BUILDING			BUILDING00011	x	0		45.00	r	6238911.66	2275920.40	1718.41	1673.41
								H	6239092.54	2275846.82	1718.41	1683.82
								H	6239061.11	2275757.63	1718.41	1687.52
								H	6239014.72	2275771.16	1718.41	1685.02
									6238933.55	2275554.70	1718.41	1671.55
								H	6238970.27	2275539.24	1718.41	1676.14
									6238936.19	2275454.41	1718.41	1672.20
				-					6238752.25	2275518.79	1718.41	1666.25
BUILDING			BUILDING00012	x	0		45.00	r	6238972.98	2276591.79	1697.47	1652.47
DOILDING			DOILDING00012	<u> </u>	0		45.00	ľ	6239150.79	2276591.79	1697.47	1659.08
				-					6239130.79	2276182.56	1697.47	1667.23
				-					6239183.32	2276182.50	1697.47	1668.62
				-					6239183.32	2276184.87	1697.47	1670.26
				-					6238976.04	2276064.49	1697.47	1664.79
BUILDING					0		45.00	r	6238993.46	2275168.17	1730.18	1685.18
BUILDING			BUILDING00013	x	0		45.00	1				
				-					6239000.99	2275104.20 2275104.20	1730.18 1730.18	1689.29 1696.51
									6238945.87			
				<u> </u>					6238948.08	2274793.32	1730.18	1695.76
				<u> </u>					6238998.79	2274793.32	1730.18	1696.69
									6238995.40	2274729.46	1730.18	1698.40
				<u> </u>					6238664.91	2274731.39	1730.18	1690.15
				<u> </u>					6238661.05	2275164.31	1730.18	1700.16
BUILDING			BUILDING00014	x	0		45.00	r	6238950.28	2274647.80	1746.06	1701.06
								$\square$	6238952.49	2274334.71	1746.06	1704.91
									6239005.40	2274334.71	1746.06	1705.30
				<u> </u>					6238997.33	2274223.10	1746.06	1706.82
									6238794.40	2274228.90	1746.06	1709.09
									6238691.97	2274541.99	1746.06	1691.83
									6238697.77	2274646.35	1746.06	1689.71
BUILDING			BUILDING00015	x	0		45.00	r	6239415.04	2273953.95	1760.77	1715.77
								Ц	6239675.99	2273959.59	1760.77	1728.33
									6239675.99	2273430.64	1760.77	1722.07
									6239477.24	2273432.92	1760.77	1713.05
									6239477.24	2273849.64	1760.77	1719.90
									6239415.50	2273849.64	1760.77	1715.53

This page intentionally left blank



APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS



This page intentionally left blank



# 14064 - West Campus Upper Plateau

CadnaA Noise Prediction Model: 14064\_04\_Construction.cna Date: 09.03.22 Analyst: S. Shami

#### Calculation Configuration

Configurat	ion
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (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	47.2	47.2	53.9	55.0	45.0	0.0				5.00	а	6239395.68	2277518.39	5.00
RECEIVERS		R2	48.0	48.0	54.7	55.0	45.0	0.0				5.00	а	6240840.00	2277494.60	5.00
RECEIVERS		R3	46.8	46.8	53.5	55.0	45.0	0.0				5.00	а	6242300.90	2277400.66	5.00
RECEIVERS		R4	39.7	39.7	46.4	55.0	45.0	0.0				5.00	а	6244773.77	2274154.49	5.00
RECEIVERS		R5	42.3	42.3	49.0	55.0	45.0	0.0				5.00	а	6243135.43	2273499.44	5.00
RECEIVERS		R6	44.7	44.7	51.3	55.0	45.0	0.0				5.00	а	6241549.82	2272804.45	5.00
RECEIVERS		R7	43.5	43.5	50.2	55.0	45.0	0.0				5.00	а	6240610.52	2272148.50	5.00
RECEIVERS		R8	46.0	46.0	52.7	55.0	45.0	0.0				5.00	а	6238684.09	2273020.65	5.00
RECEIVERS		R9	47.2	47.2	53.9	55.0	45.0	0.0				5.00	а	6237166.99	2274522.15	5.00
RECEIVERS		R10	47.8	47.8	54.4	55.0	45.0	0.0				5.00	а	6238570.92	2277016.29	5.00

#### Area Source(s)

																_
Name	М.	ID	R	esult. PW	Ľ	R	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)		
CONSTRUCTION		0	115.0	115.0	115.0	53.3	53.3	53.3	Lw	115					8	а

Name	ŀ	lei	ght	Coordinates						
	Begin		End	x	У	z	Ground			
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)			
CONSTRUCTION	8.00	а		6238887.91	2276997.73	8.00	0.00			
				6238893.11	2277472.99	8.00	0.00			

Name	He	ight		Coordinates							
	Begin	End	x	У	z	Ground					
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)					
			6238946.30	2277471.91	8.00	0.00					
			6238946.30	2276698.26	8.00	0.00					
			6239196.25	2276704.21	8.00	0.00					
			6239202.20	2277174.36	8.00	0.00					
			6241261.30	2277186.26	8.00	0.00					
			6241267.25	2277096.99	8.00	0.00					
			6242552.70	2277096.99	8.00	0.00					
			6242546.75	2275281.89	8.00	0.00					
			6242522.94	2275246.18	8.00	0.00					
			6242683.63	2275216.43	8.00	0.00					
			6242975.23	2275156.91	8.00	0.00					
			6243177.57	2275168.82	8.00	0.00					
			6244129.76	2275234.28	8.00	0.00					
			6244165.46	2275293.79	8.00	0.00					
			6244147.61	2276162.66	8.00	0.00					
			6244230.93	2276162.66	8.00	0.00					
			6244236.88	2275305.69	8.00	0.00					
			6244260.68	2275234.28	8.00	0.00					
			6244409.46	2275246.18	8.00	0.00					
			6244516.58	2275281.89	8.00	0.00					
			6245308.09	2275531.84	8.00	0.00					
			6245319.99	2275442.57	8.00	0.00					
			6244522.53	2275180.72	8.00	0.00					
			6244349.95	2275145.01	8.00	0.00					
			6243219.23	2275055.74	8.00	0.00					
			6242880.01	2275067.65	8.00	0.00					
			6242433.68	2275180.72	8.00	0.00					
			6240820.91	2273145.42	8.00	0.00					
			6239541.41	2273133.52	8.00	0.00					
			6239184.34	2273764.34	8.00	0.00					
			6238803.47	2273704.83	8.00	0.00					
			6238767.76	2273806.00	8.00	0.00					
			6237488.27	2273788.15	8.00	0.00					
			6237506.12	2275847.25	8.00	0.00					
			6238351.18	2275859.15	8.00	0.00					
			6238369.04	2276692.31	8.00	0.00					
			6238880.84	2276698.26	8.00	0.00					