

# The Bowery

NOISE IMPACT ANALYSIS CITY OF SANTA ANA

PREPARED BY:

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

DECEMBER 3, 2019

12282-05 Noise Study



## TABLE OF CONTENTS

ТА	BLE OI	F CONTENTS	. III			
		CES				
		XHIBITS				
-	-	ABLES				
		ABBREVIATED TERMS				
EX	ECUTI	VE SUMMARY	1			
	Off-Si	te Noise Analysis	1			
	On-Sit	te Noise Analysis	1			
	Statio	nary-Source Noise Levels	2			
	Const	ruction Noise Analysis	3			
	Summ	nary of CEQA Significance Findings	4			
1	INT	RODUCTION	5			
	1.1	Site Location	5			
	1.2	Project Description	5			
2	FUI	NDAMENTALS	9			
	2.1	Range of Noise				
	2.1	Noise Descriptors				
	2.2	Sound Propagation				
	2.4	Noise Control				
	2.5	Noise Barrier Attenuation				
	2.6	Land Use Compatibility With Noise				
	2.7	Community Response to Noise				
	2.8	Exposure to High Noise Levels	. 13			
	2.9	Vibration	. 13			
3	REC	GULATORY SETTING	17			
	3.1	State of California Noise Requirements	. 17			
	3.3	City of Santa Ana General Plan	. 18			
	3.4	Construction Noise Standards	. 19			
	3.5	Construction Vibration Standards	. 19			
	3.6	Airport Land Use Compatibility	. 20			
4	SIG	NIFICANCE CRITERIA	-			
	4.1	Potential Impacts Not Further Analyzed				
	4.2	Substantial Permanent Noise Level Increases				
	4.3	Substantial Temporary of Periodic Noise Level Increases				
	4.4	Significance Criteria Summary	. 25			
5	EXI	STING NOISE LEVEL MEASUREMENTS	-			
	5.1	Measurement Procedure and Criteria				
	5.2	Noise Measurement Locations				
	5.3	Noise Measurement Results				
6						
	6.1	FHWA Traffic Noise Prediction Model				
	6.2	Construction Vibration Assessment Methodology	. 37			



7	OF	F-SITE TRANSPORTATION NOISE IMPACTS	39
	7.1	Traffic Noise Contours	. 39
	7.2	Existing Condition Project Traffic Noise Level Contributions	. 46
	7.3	Opening Year 2022 Project Traffic Noise Level Contributions	
	7.4	Horizon Year 2040 Project Traffic Noise Level Contributions	. 48
8	ON	-SITE NOISE IMPACTS	49
	8.1	Exterior Noise Analysis	. 49
	8.2	Interior Noise Analysis	. 51
9	REG	CEIVER LOCATIONS	57
10	со	NSTRUCTION IMPACTS	59
	10.1	Construction Noise Levels	. 59
	10.2	Construction Reference Noise Levels	
	10.3	Construction Noise Analysis	
	10.4	Construction Noise Level Compliance	
	10.5	Construction-Source Noise Level Contributions	
	10.6	Construction Vibration Impacts	. 69
11	RE	ERENCES	71
12	CEF	RTIFICATION	73

## **APPENDICES**

**APPENDIX 5.1: STUDY AREA PHOTOS** 

APPENDIX 5.2: NOISE LEVEL MEASUREMENT WORKSHEETS

APPENDIX 7.1: OFF-SITE TRAFFIC NOISE LEVEL CONTOURS

APPENDIX 8.1: ON-SITE OUTDOOR COMMON AREA TRAFFIC NOISE LEVEL CALCULATIONS

APPENDIX 8.2: ON-SITE BUILDING FAÇADE TRAFFIC NOISE LEVEL CALCULATIONS

APPENDIX 8.3: INTERIOR NOISE LEVEL CALCULATIONS



## LIST OF EXHIBITS

EXHIBIT 1-A:	LOCATION MAP	. 6
EXHIBIT 1-B:	SITE PLAN	. 7
EXHIBIT 2-A:	TYPICAL NOISE LEVELS	9
EXHIBIT 2-B:	NOISE LEVEL INCREASE PERCEPTION	13
EXHIBIT 2-C:	TYPICAL LEVELS OF GROUND-BORNE VIBRATION	15
EXHIBIT 3-A:	INTERIOR AND EXTERIOR NOISE STANDARDS	18
EXHIBIT 3-B:	JOHN WAYNE AIRPORT NOISE LEVEL CONTOUR BOUNDARIES	21
EXHIBIT 5-A:	NOISE MEASUREMENT LOCATIONS	32
EXHIBIT 9-A:	RECEIVER LOCATIONS	58
EXHIBIT 10-A	: CONSTRUCTION ACTIVITY AND RECEIVER LOCATIONS	61

## LIST OF TABLES

ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS	
TABLE 4-1: SIGNIFICANCE OF NOISE IMPACTS AT NOISE-SENSITIVE RECEIVERS	24
TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY	27
TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS	
TABLE 6-1: OFF-SITE ROADWAY PARAMETERS	34
TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES	
TABLE 6-3: TIME OF DAY VEHICLE SPLITS	
TABLE 6-4: DISTRIBUTION OF TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)	36
TABLE 6-5: ON-SITE ROADWAY PARAMETERS	
TABLE 6-6: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT	
TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS	40
TABLE 7-2: EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS	
TABLE 7-3: OPENING YEAR WITHOUT PROJECT CONDITIONS NOISE CONTOURS	42
TABLE 7-4: OPENING YEAR WITH PROJECT CONDITIONS NOISE CONTOURS	43
TABLE 7-5: HORIZON YEAR 2040 WITHOUT PROJECT CONDITIONS NOISE CONTOURS	
TABLE 7-6: HORIZON YEAR 2040 WITH PROJECT CONDITIONS NOISE CONTOURS	
TABLE 7-7: EXISTING OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS	
TABLE 7-8: OPENING YEAR OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS	
TABLE 7-9: HORIZON YEAR 2040 OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS	48
TABLE 8-1: OUTDOOR COMMON AREA EXTERIOR TRAFFIC NOISE LEVELS	
TABLE 8-2: EXTERIOR TRAFFIC NOISE LEVELS AT THE RESIDENTIAL BUILDING FACADES	50
TABLE 8-3: INTERIOR NOISE REDUCTION CALCULATIONS	
TABLE 8-4: FIRST-FLOOR INTERIOR NOISE IMPACTS (CNEL)	53
TABLE 8-5: SECOND-FLOOR INTERIOR NOISE IMPACTS (CNEL)	
TABLE 8-6: THIRD-FLOOR INTERIOR NOISE IMPACTS (CNEL)	
TABLE 8-7: FOURTH TO SIXTH-FLOOR INTERIOR NOISE IMPACTS (CNEL)	56
TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS	
TABLE 10-2: DEMOLITION ACTIVITY NOISE LEVELS	-
TABLE 10-3: GRADING ACTIVITY NOISE LEVELS	
TABLE 10-4: BUILDING CONSTRUCTION ACTIVITY NOISE LEVELS	
TABLE 10-5: ARCHITECTURAL COATING ACTIVITY NOISE LEVELS	65

TABLE 10-6: PAVING ACTIVITY NOISE LEVELS	66
TABLE 10-7: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY	67
TABLE 10-8: CONSTRUCTION-SOURCE NOISE LEVEL COMPLIANCE	67
TABLE 10-9: UNMITIGATED CONSTRUCTION-RELATED TEMPORARY NOISE LEVEL INCREASES	68
TABLE 10-10: UNMITIGATED CONSTRUCTION EQUIPMENT VIBRATION LEVELS	70

## LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
AELUP	Airport Environs Land Use Plan
ALUC	Airport Land Use Commission
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
JWA	John Wayne Airport
L <sub>eq</sub>	Equivalent continuous (average) sound level
L <sub>max</sub>	Maximum level measured over the time interval
L <sub>min</sub>	Minimum level measured over the time interval
mph	Miles per hour
PPV	Peak Particle Velocity
Project	The Bowery
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels



## **EXECUTIVE SUMMARY**

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed The Bowery ("Project"). The Project site is located at the southwest corner of Red Hill Avenue and Warner Avenue within the southeastern most portion of the City of Santa Ana. The Project is proposed to consist of mixed-use development that would include a total of 1,150 multi-family residential units and 80,000 square feet of commercial retail and restaurant space. This study has been prepared consistent with applicable City of Santa Ana noise standards, and significance criteria based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

#### **OFF-SITE NOISE ANALYSIS**

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 24 roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in *The Bowery Traffic Impact Analysis*. (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing, Opening Year, and Horizon Year 2040 traffic conditions. The analysis shows that the unmitigated Project-related traffic noise level increases under all traffic scenarios will be *less than significant*.

#### **ON-SITE NOISE ANALYSIS**

A noise impact analysis has been completed to determine the on-site traffic noise exposure levels that would result from nearby transportation noise sources, and to identify potential noise mitigation measures that would achieve acceptable Project exterior and interior noise levels. The primary source of traffic noise affecting the Project site is anticipated to be from Warner Avenue and Red Hill Avenue. The Project will also experience some background aircraft noise impacts associated with John Wayne Airport (JWA). However, since the Project site is located outside the 55 dBA CNEL aircraft noise level contour boundaries of JWA, the aircraft noise level impacts area considered *less than significant*. However, since the Project site is located within the JWA influence area, all future residents shall be notified of potential aircraft overflight consistent with the requirements of the AELUP as follows:

The property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration or odors). Individual sensitives to those annoyances, if any are associated with the property before you complete your purchase and determine where they are acceptable to you."



#### EXTERIOR NOISE LEVELS

A review of the Project site plan suggests that the multi-family residential outdoor common areas will be limited to the rooftops of Building A, Building B as well as the courtyard areas for Building C and Building D. The location and design of the multi-family residential outdoor common areas substantially limits the potential exposure of these areas to the traffic noise from Warner Avenue and Red Hill Avenue. For example, the roof-deck representing the outdoor common areas for Building A, is located on top of the 7-level parking structure and is screened from both Warner Avenue and Red Hill Avenue by the structure itself including the fitness and clubroom buildings.

The analysis shows that the future unmitigated on-site traffic noise levels are expected to satisfy the City of Santa Ana General Plan Noise Element 65 dBA CNEL noise level standard for the multi-family residential outdoor areas within the Project site with exterior noise levels approaching 57.7 dBA CNEL. As such, the future on-site traffic noise impacts at the multi-family residential outdoor common areas are considered *less than significant* impacts.

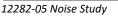
The City of Santa Ana does not identify any exterior noise level limits for the commercial retail uses. Therefore, analysis of the commercial retail land use is limited to the interior noise levels significance criteria outlined in California Green Building Standards Code Section 5.507. No exterior noise analysis is provided for the planned commercial retail plaza or outdoor patio areas.

#### INTERIOR NOISE LEVELS

This noise study evaluates the interior noise levels at the Project buildings based on the City of Santa Ana 45 dBA CNEL residential interior noise level standards. The Project buildings are shown to require a Noise Reduction (NR) of up to 28.2 dBA and a windows-closed condition requiring a means of mechanical ventilation (e.g. air conditioning). The interior noise level assessment for the second, third and fourth to seventh floor building façade shows that the City of Santa Ana 45 dBA CNEL multi-family residential interior noise standards can be satisfied using standard building construction with windows and doors providing a minimum STC ratings of 27 for units facing Warner Avenue and Red Hill Avenue. The analysis shows that the unmitigated interior noise levels within the mixed-use Project will be *less than significant*.

#### STATIONARY-SOURCE NOISE LEVELS

The Bowery mixed-use development is not expected to include any specific type of operational noise levels beyond the typical noise sources associated with residential land use in the Project study area, such as people and children, car doors slamming, garage doors, trash collection, and outdoor common areas, and is considered a noise-sensitive receiving land use. In addition, the project study area does not include any nearby noise sensitive receiver locations that may be impacted from the Project related operational noise levels. Therefore, the potential operational noise impacts associated with the mixed-use Project are considered *less than significant*.





#### **CONSTRUCTION NOISE ANALYSIS**

On-site construction noise represents a short-term increase on the ambient noise levels associated with the development of the Project on nearby receivers. Construction-related noise impacts are expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site when certain activities occur at the Project site boundary. Using sample reference noise levels to represent the planned construction activities of The Bowery site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. Since the City of Santa Ana General Plan and Municipal Codes do not identify specific construction noise level limits, this analysis relies on the 85 dBA Leq threshold identified by the National Institute for Occupational Safety and Health (NIOSH) to quantify and determine potential construction noise levels will approach 71.4 dBA Leq and will satisfy the 85 dBA Leq threshold identified by the National Institute for Occupational Institute for Occupational Safety and Health (NIOSH). (3) and therefore, the noise level impacts at the nearby sensitive receiver locations are considered *less than significant*.

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 necessary to assess the level of significance associated with temporary construction noise level impacts.

Since the City of Santa Ana General Plan and Municipal Code do not identify specific construction noise level thresholds, a temporary noise level increase of 10 dBA  $L_{eq}$  has historically been used to describe a potentially significant impact for residential noise sensitive receiver locations since it represents the perceived doubling of the existing noise level conditions. However, due to the professional and administrative office land use designation and non-residential nature of the existing Project site, all the nearby receivers are considered non-noise sensitive and the 10 dBA  $L_{eq}$  is not applicable.

Therefore, to describe a *substantial* temporary noise level increase threshold for construction noise levels at the non-noise sensitive receivers surrounding the project site, this analysis relies on applicable State-level regulations. More specifically, Caltrans' May 2011 *Traffic Noise Analysis Protocol* identifies a 12 dBA Leq noise level increase as *substantial*, and therefore, a 12 dBA Leq temporary noise level increase threshold is used in this noise study to address CEQA Noise Guideline D. (4) While the Caltrans 12 dBA Leq threshold was not created specifically for construction noise, it is applied in the Noise Study as a reasonable threshold to assess temporary, substantial noise level increases during Project construction. (4) No nighttime construction activity is permitted in the City of Santa Ana Municipal Code, and therefore, is not analyzed in this noise study.

The Project will contribute unmitigated, worst-case construction noise level increases ranging from 0.4 to 11.2 dBA Leq during the daytime hours at the closest receiver locations, which are



non-residential non-sensitive receptors. Since the worst-case temporary noise level increase of up to 11.2 dBA Leq during Project construction satisfies the 12 dBA Leq significance threshold, the unmitigated construction noise level increases are considered *less than significant* temporary noise impacts.

#### SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this The Bowery Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (5). 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 described below.

Anchusia	Report Section	Significance Findings		
Analysis		Unmitigated	Mitigated	
Off-Site Traffic Noise Levels	7	Less Than Significant	n/a	
On-Site Exterior Traffic Noise Levels	- 8	Less Than Significant	n/a	
On-Site Interior Traffic Noise Levels		Less Than Significant	n/a	
Construction Noise Levels	10	Less Than Significant	n/a	
Construction Vibration Levels		Less Than Significant	n/a	

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

## 1 INTRODUCTION

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

### **1.1** SITE LOCATION

The proposed The Bowery Project is located at 2300, 2310, and 2320 Red Hill Avenue in the City of Santa Ana, as shown on Exhibit 1-A. The site is located at the southwest corner of Red Hill Avenue and Warner Avenue within the southeastern most portion of the City of Santa Ana. Areas across from Red Hill Avenue (to the east) are within the City of Tustin and are part of the former Tustin Marine Corps Air Station (MCAS), now known as the Tustin Legacy. Areas across from Dyer Road (0.5 mile south of the site) are in the City of Irvine, within the Irvine Business Complex (IBC).

The closest airport to the Project site is John Wayne Airport which is located approximately 2.5 miles south of the Project site. The site is currently developed with three partially occupied industrial buildings, parking areas, and vehicle circulation drives.

### **1.2 PROJECT DESCRIPTION**

The Project would redevelop the Project site for new commercial and multi-family residential uses, as shown on Exhibit 1-B. The proposed Project would demolish the three existing buildings and remove all the existing improvements, landscaping, and pavement. The Project would then construct a 4-phase mixed-use development that would include a total of 1,150 multi-family residential units and 80,000 square feet of commercial retail and restaurant space.

The proposed Project would develop four residential buildings that would be 6-stories in height. Each building would have an adjacent parking structure. Two parking structures would provide 7-levels of above ground parking and two would provide 6 levels of above ground parking. In addition, the Project would develop two one-story retail/restaurant commercial buildings and a surface parking lot.



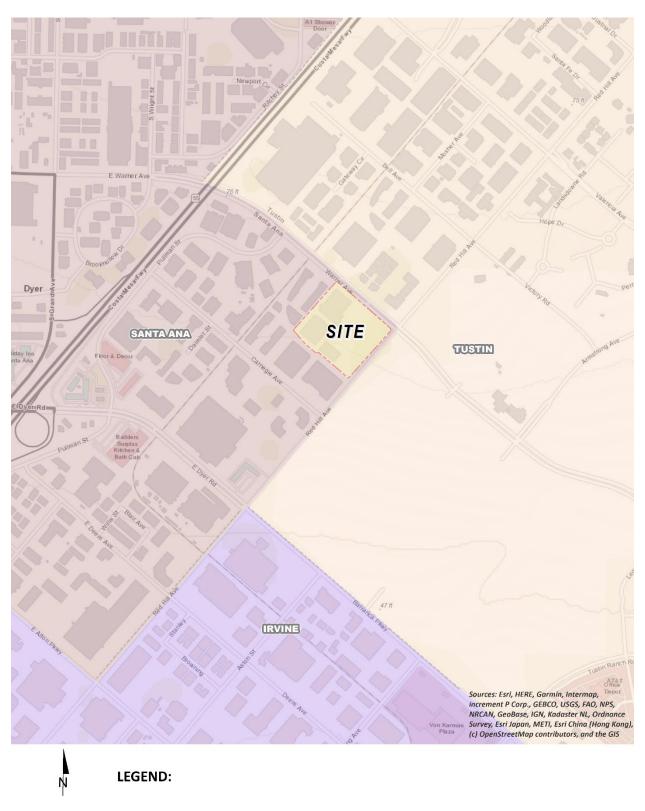


EXHIBIT 1-A: LOCATION MAP



EXHIBIT 1-B: SITE PLAN





This page intentionally left blank



## 2 FUNDAMENTALS

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

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

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

### 2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (6) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 100 feet, which can cause serious discomfort. (7) 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 commonly used figure is the equivalent level ( $L_{eq}$ ). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level ( $L_{eq}$ ) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period and is commonly used to describe the "average" noise levels within the environment.

To describe the time-varying character of environmental noise, the statistical or percentile noise descriptors  $L_{50}$ ,  $L_{25}$ ,  $L_8$  and  $L_2$ , are commonly used. The percentile noise descriptors are the noise levels equaled or exceeded during 50 percent, 25 percent, 8 percent and 2 percent of a stated time. Sound levels associated with the  $L_2$  and  $L_8$  typically describe transient or short-term events, while levels associated with the  $L_{50}$  describe the steady state (or median) noise conditions. The City of Santa Ana relies on the percentile noise levels to describe the stationary source noise level limits. While the  $L_{50}$  describes the noise levels occurring 50 percent of the time, the  $L_{eq}$  accounts for the total energy (average) observed for the entire hour. Therefore, the  $L_{eq}$  noise descriptor is generally 1-2 dBA higher than the  $L_{50}$  noise level.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA  $L_{eq}$  sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Santa Ana 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. (6)



#### 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. (8)

#### 2.3.3 ATMOSPHERIC EFFECTS

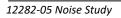
Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (6)

#### 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 resident. 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 FHWA does not consider the planting of vegetation to be a noise abatement measure. (8)

### 2.4 NOISE CONTROL

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





### **2.5** Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by up to 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (8)

#### 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. (9)

#### 2.7 COMMUNITY RESPONSE TO NOISE

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

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

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (10) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (10) 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. An increase of decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments (11), a change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (8)



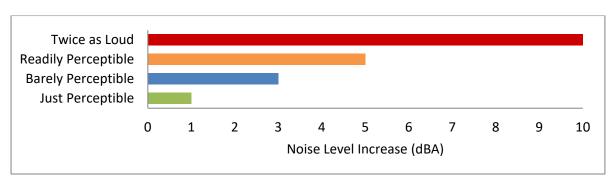


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

### 2.8 EXPOSURE TO HIGH NOISE LEVELS

The Occupational Safety and Health Administration (OSHA) sets legal limits on noise exposure in the workplace. The permissible exposure limit (PEL) for a worker over an eight-hour day is 90 dBA. The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half. The National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss. NIOSH also recommends a 3 dBA exchange rate so that every increase by 3 dBA doubles the amount of the noise and halves the recommended amount of exposure time. (12)

OSHA has implemented requirements to protect all workers in general industry (e.g. the manufacturing and the service sectors) for employers to implement a Hearing Conservation Program where workers are exposed to a time weighted average noise level of 85 dBA or higher over an eight-hour work shift. Hearing Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training, and conduct evaluations of the adequacy of the hearing protectors in use unless changes to tools, equipment and schedules are made so that they are less noisy and worker exposure to noise is less than the 85 dBA. This noise study does not evaluate the noise exposure of workers within a project or construction site based on CEQA requirements, and instead, evaluates Project-related operational and construction noise levels at the nearby sensitive receiver locations in the Project study area.

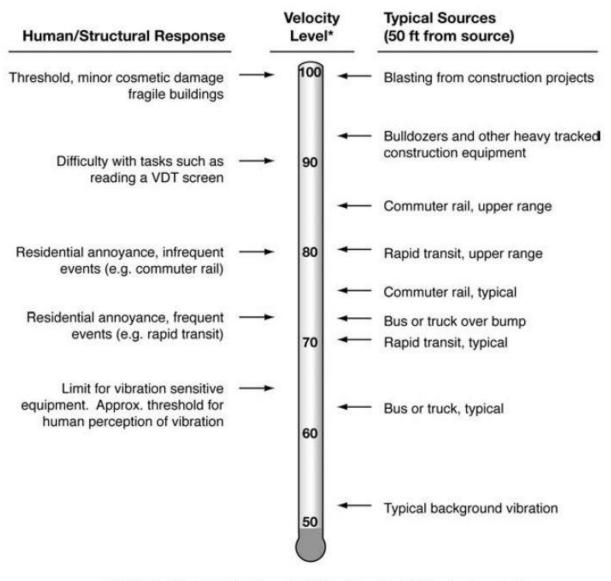
### 2.9 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Assessment* (13), 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), vibration-sensitive equipment and/or activities

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



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

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

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



This page intentionally left blank



## **3 REGULATORY SETTING**

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

### 3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research. (14) 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.

#### 3.1.1 RESIDENTIAL CONSTRUCTION

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are developed near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans for noise-sensitive land uses must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

#### **3.1.2** Non-Residential Construction

The State of California's Green Building Standards Code contains mandatory measures for nonresidential building construction in Section 5.507 on Environmental Comfort. (15) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other



noise source. If the development falls within an airport or freeway 65 dBA CNEL noise contour, buildings shall be construction to provide an interior noise level environment attributable to exterior sources that does not exceed an hourly equivalent level of 50 dBA  $L_{eq}$  in occupied areas during any hour of operation.

#### **3.3** CITY OF SANTA ANA GENERAL PLAN

The City of Santa Ana has adopted a Noise Element of the General Plan to address existing and future noise issues throughout the City. (16) The Noise Element identifies several objectives and policies to minimize the impacts of excessive noise levels throughout the City and establishes transportation related noise level requirements for sensitive land uses.

Table 1 of the City of Santa Ana General Plan Noise Element and Airport Environs Element (16) provides standards to evaluate transportation-related noise at new developments, such as The Bowery. The interior and exterior noise standards identify maximum transportation related exterior noise standards for the traditional residential, institutional and open space land uses categories. The City of Santa Ana General Plan Noise Element does not identify any exterior noise level standards for mixed-use development representing the combination of multi-family residential and commercial retail uses. Exhibit 3-A shows the interior and exterior noise level standards identified in Table 1 of the City's General Plan Noise Element.

	Land Use Categories	CNEL		
Categories	Uses	Interior <sup>1</sup>	Exterior <sup>2</sup>	
Residential	Single-family, duplex, multi-family	45 <sup>3</sup>	65	
Institutional	Hospital, school classrooms/playgrounds	45	65	
Institutional	Church, library	45	_	
Open Space	Parks	_	65	

#### EXHIBIT 3-A: INTERIOR AND EXTERIOR NOISE STANDARDS

Notes:

<sup>1</sup> Interior areas (to include but are not limited to): bedrooms, bathrooms, kitchens, living rooms, dining rooms, closets, corridors/hallways, private offices, and conference rooms.

<sup>2</sup> Exterior areas shall mean: private yard of single-family homes, mobile home parks, park picnic areas, school playgrounds, and common areas. Private open space, such as atriums and balconies, shall be excluded from exterior areas provided sufficient common area is included within the project.

<sup>3</sup> Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12, Section 1305 of the Uniform Building Code.

For multi-family residential uses that are not part of a mixed-use development, the City of Santa Ana requires an exterior noise level standard of 65 dBA CNEL for the outdoor common areas. The outdoor common areas for multi-family residential does not include private open space such as atriums and balconies. Further, an interior noise level standard for multi-family residential uses with windows closed of 45 dBA CNEL is identified on Table 1 of the City of Santa Ana General Plan



Noise Element. (16) While the noise element identifies interior and exterior transportation related noise standards for noise sensitive multi-family residential use, the City does not identify any interior or exterior noise level limits for commercial retail uses.

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

To analyze noise impacts originating from the construction of The Bowery, noise from construction activities are typically evaluated against standards established under a City's Municipal Code. The Municipal Code noise standards for construction are described below for the City of Santa Ana to determine the potential noise impacts at nearby receiver locations.

To control noise impacts associated with the construction of the proposed Project, the City has established limits to the hours of operation. The City of Santa Ana Municipal Code, Section 18-314(e) indicates that noise sources associated with construction shall not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or any time on Sunday or a federal holiday. (17) However, the City's General Plan and Municipal Code do not establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes as the *generation of noise levels in excess of standards* or as a *substantial temporary or periodic noise increase*, the following construction noise level thresholds are used in this noise study.

To evaluate whether the Project will generate potentially significant temporary construction noise levels at off-site sensitive receiver locations, a construction-related noise level threshold is adopted from the Criteria for Recommended Standard: Occupational Noise Exposure prepared by the National Institute for Occupational Safety and Health (NIOSH). (3) A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The construction related noise level threshold starts at 85 dBA for more than eight hours per day, and for every 3 dBA increase, the exposure time is cut in half. This results in noise level thresholds of 88 dBA for more than four hours per day, 92 dBA for more than one hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. (3) For the purposes of this analysis, the lowest, more conservative construction noise level threshold of 85 dBA Lea is used as an acceptable threshold for construction noise at the nearby sensitive receiver locations. Since this construction-related noise level threshold represents the energy average of the noise source over a given time, they are expressed as Leg noise levels. Therefore, the noise level threshold of 85 dBA Leg over a period of eight hours or more is used to evaluate the potential Project-related construction noise level impacts at the nearby sensitive receiver locations.

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

The City of Santa Ana General Plan and Municipal Code do not identify specific vibration level standards. Therefore, applicable vibration standards identified by the California Department of Transportation ("Caltrans") *Transportation and Construction Vibration Guidance Manual* are used in this noise study. (18) According to the Caltrans vibration manual, large mobile equipment, and loaded trucks used during construction activities can produce vibration which

can potentially cause annoyance at sensitive land uses within the Project study area, or damage to adjacent structures. The Caltrans vibration manual establishes thresholds for determining potential vibration impacts resulting in building damage for older residential structures of 0.3 in/sec PPV, and for human annoyance of 0.04 in/sec PPV. These Caltrans thresholds are used in this analysis to assess potential impacts at the adjacent sensitive uses to the Project site.

### **3.6** AIRPORT LAND USE COMPATIBILITY

The Project site is located roughly 2.5 miles north of John Wayne Airport (JWA). This places the Project within the primary aircraft approach corridor and the Airport Environs Land Use Plan (AELUP) notification area for JWA. The AELUP (19) prepared by the Orange County Airport Land Use Commission (ALUC), identifies noise compatibility policies to safeguard the general welfare of the inhabitants within the vicinity of the airport and to ensure the continued operation of the airport. Specifically, the AELUP plan seeks to protect the public from the adverse effects of aircraft noise, to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and to ensure that no structures or activities adversely affect navigable airspace.

The basic function of the AELUP is to promote compatibility between the airport and the land uses that surround it. As required by State law, the AELUP provides guidance to affected local jurisdictions regarding airport land use compatibility. The main objective of the AELUP is to avoid future compatibility conflicts rather than to remedy existing incompatibilities. Also, the AELUP is aimed at addressing future land uses and development, not airport activity. The AELUP does not place any restrictions on the present and future role, configuration, or use of the airport.

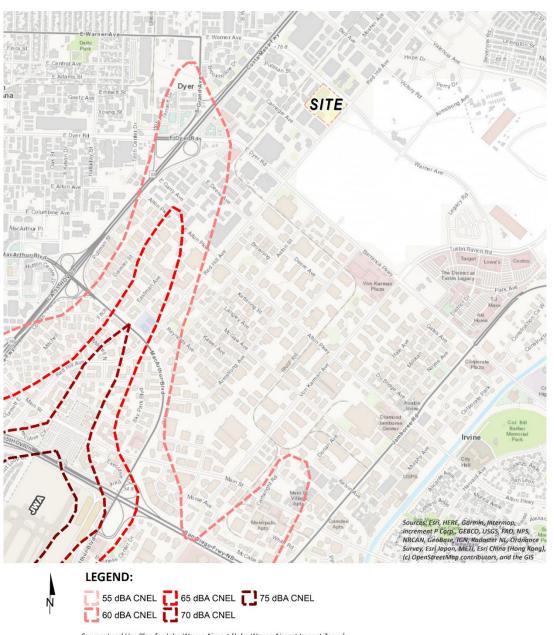
The AELUP establishes aircraft noise exposure exterior noise level compatibility thresholds for new developments by land use category. According to the exterior noise thresholds outlined in the AELUP, multi-family residential development is considered *normally consistent* with exterior noise levels of less than 60 dBA CNEL, *conditionally consistent* with exterior noise levels between 60 and 65 dBA CNEL and *normally inconsistent* with exterior noise level above 65 dBA CNEL. For commercial retail land use, exterior noise levels are considered *normally consistent* with exterior noise levels of less than 65 dBA CNEL and *conditionally consistent* with exterior noise level above 65 dBA CNEL.

As shown on Exhibit 3-B, the Project site is located outside the 55 dBA CNEL aircraft noise level contour boundaries of JWA. Therefore, according to the AELUP, the Project residential and commercial retail land use is considered *normally consistent* with JWA aircraft noise exposure exterior noise level compatibility thresholds. In addition, the County of Orange has adopted the General Aviation Noise Ordinance (GANO) that prohibits commercial aircraft departures between the hours of 10:00 p.m. and 7:00 a.m. and arrivals between the hours of 11:00 p.m. and 7:00 a.m. (20) These restrictions substantially reduce the aircraft noise levels impacts during the noise sensitive nighttime hours for residential use.



However, since the Project site is located within the JWA influence area, all future residents shall be notified of potential aircraft overflight consistent with the requirements of the AELUP as follows:

The property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration or odors). Individual sensitives to those annoyances, if any are associated with the property before you complete your purchase and determine where they are acceptable to you."



#### EXHIBIT 3-B: JOHN WAYNE AIRPORT NOISE LEVEL CONTOUR BOUNDARIES

Source: Land Use Plan for John Wayne Airport (John Wayne Airport Impact Zones) Amended: April 17, 2008.



This page intentionally left blank



## 4 SIGNIFICANCE CRITERIA

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

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

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

### 4.1 POTENTIAL IMPACTS NOT FURTHER ANALYZED

Based on JWA Airport Impact Zones provided in the AELUP, the Project site is located outside the 55 dBA CNEL (Exhibit 3-B) noise level contour boundary. As such, exterior noise levels due to aircraft overflight activities would be considered *normally consistent*, and Project interior noise levels would be reduced with standard building construction. Further, the Project does not propose or require facilities or actions that would contribute to or exacerbate noise generated by airport/airfield facilities and activities. Therefore, potential impacts related to the exposure of people residing or working in the Project area due to airport related noise levels is considered *less-than-significant*. Accordingly, no further analysis is warranted.

### 4.2 SUBSTANTIAL PERMANENT NOISE LEVEL INCREASES

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest receiver locations.

#### 4.2.1 NOISE SENSITIVE RECEIVERS

Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant*. (21) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is



the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (22) 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 (i.e., CNEL) or median noise level ( $L_{50}$ ).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (21) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, FICON identifies a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. Per the FICON, in areas where the without project noise levels range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. Table 4-1 below provides a summary of the potential noise impact significance criteria, based on guidance from FICON.

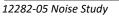
Without Project Noise Level	Potential Significant Impact	
< 60 dBA	5 dBA or more	
60 - 65 dBA	3 dBA or more	
> 65 dBA	1.5 dBA or more	

 TABLE 4-1: SIGNIFICANCE OF NOISE IMPACTS AT NOISE-SENSITIVE RECEIVERS

Federal Interagency Committee on Noise (FICON), 1992.

#### 4.2.2 OTHER RECEIVERS

Since the City of Santa Ana General Plan Noise Element does not identify criteria to assess the impacts associated with off-site transportation-related noise impacts at other non-noise-sensitive uses, such as the office and commercial uses in the Project study area, the Office of Planning and Research (OPR) land use/noise compatibility criteria, found in Figure 2 of the *General Plan Guidelines, Appendix D: Noise Element Guidelines* is used to determine potential impacts at adjacent land uses. The *normally acceptable* exterior noise level for non-noise-sensitive land use, such as office and commercial uses, is 70 dBA CNEL. Noise levels greater than





70 dBA CNEL are considered *conditionally acceptable* according to the *Land Use Compatibility Criteria*. (14)

To determine if Project-related traffic noise level increases are significant at off-site non-noisesensitive land uses, a *readily perceptible* 5 dBA and *barely perceptible* 3 dBA criteria are used. When the without Project noise levels at the non-noise-sensitive land uses are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a *readily perceptible* 5 dBA or greater noise level increase is considered a significant impact. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the OPR land use/noise compatibility criteria, found in Figure 2 of the *General Plan Guidelines, Appendix D: Noise Element Guidelines normally acceptable* 70 dBA CNEL exterior noise level criteria. The 70 dBA CNEL criteria is also consistent with the nearby City of Orange General Plan Noise Element Table N-3 standards for non-noise-sensitive uses. (14)

#### 4.3 SUBSTANTIAL TEMPORARY OF PERIODIC NOISE LEVEL INCREASES

Due to the temporary, short-term nature of noise-generating construction activities, the temporary or periodic noise level increases over the existing ambient conditions must be considered under CEQA Guideline D, consistent with the legal case, Friends of Riverside's Hills v. Riverside Transportation Commission, et al. (13)

The City of Santa Ana has historically been used 10 dBA  $L_{eq}$  threshold to describe a potentially significant impact for residential noise sensitive receiver locations since it represents the perceived doubling of the existing noise level conditions. However, due to the professional and administrative office land use designation and non-residential nature of the existing Project site, all the nearby receivers are considered non-noise sensitive. Therefore, to describe a substantial temporary noise level increase threshold for construction noise levels at non-noise sensitive receivers, this analysis relies on applicable State-level regulations.

The Caltrans *Traffic Noise Analysis Protocol* 12 dBA Leq *substantial* noise level increase threshold is used in this analysis to assess temporary noise level increases at all the nearby non-noise sensitive receiver locations. (4) If the Project-related construction noise levels generate a temporary noise level increase above the existing ambient noise levels of up to 12 dBA Leq, 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 Leq substantial noise level increase threshold is used in California to address noise level increases with the potential to exceed existing conditions. (4)

#### 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 4-2 shows the significance criteria summary matrix.



#### OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g., residential, hospital, etc.):
  - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase; or
  - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase; or
  - already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g. office, commercial, etc.):
  - are less than the OPR General Plan Guidelines, Figure 2, normally acceptable 70 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater Project-related noise level increase; or
  - are greater than the OPR General Plan Guidelines, Figure 2, normally acceptable 70 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater Project-related noise level increase.

#### **ON-SITE TRAFFIC NOISE**

- If the on-site noise levels:
  - exceed the exterior noise level standard of 65 dBA CNEL for outdoor areas (e.g., outdoor common areas); or
  - exceed an interior noise level of 45 dBA CNEL for residential uses (City of Santa Ana General Plan Noise Element, Table 1).
  - exceed an interior noise level of 50 dBA L<sub>eq</sub> for non-residential buildings (CALGreen Section 5.507 Environmental Comfort).

#### **CONSTRUCTION NOISE AND VIBRATION**

- If Project-related construction activities:
  - occur at any time between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or any time on Sunday or a federal holiday (City of Santa Ana Municipal Code, Section 18-314(e); or
  - create noise levels which exceed the 85 dBA Leq acceptable noise level threshold at the nearby sensitive receiver locations (NIOSH, Criteria for Recommended Standard: Occupational Noise Exposure); or
  - generate temporary Project construction-related noise level increases which exceed the 10 dBA L<sub>eq</sub> noise level increase threshold at residential noise-sensitive receiver locations.
- If Project-related construction activities generate vibration levels which exceed the Caltrans building damage vibration level threshold for older residential structures of 0.3 in/sec PPV, or the *distinctly perceptible* human annoyance vibration level threshold of 0.04 in/sec PPV at nearby sensitive receiver locations (Caltrans Transportation and Construction Vibration Guidance Manual, Tables 19 & 20).



Analysia	Receiving Condition (a)		Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
	Noise- Sensitive <sup>1</sup>	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL P	Project increase	
Off-Site		If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase		
Traffic	Sensitive	If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase	
Noise	Non-Noise-	if ambient is < 70 dBA CNEL	≥ 5 dBA CNEL P	Project increase	
	Sensitive <sup>2</sup>	if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase		
	Residential <sup>3</sup> Commercial <sup>4</sup>	Exterior Noise Level Standard	65 dBA CNEL (common areas)		
On-Site		Interior Noise Level Standard	45 dBA CNEL		
Traffic Noise		Exterior Noise Level Standard	none		
		Interior Noise Level Standard	50 dBA L <sub>eq</sub>		
	Noise- Sensitive	Noise Level Threshold <sup>5</sup>	85 dBA L <sub>eq</sub>	n/a	
Construction Noise &		Vibration Level Threshold (Building Damage) <sup>6</sup>	0.3 in/sec PPV	n/a	
Vibration		Vibration Level Threshold (Distinctly Perceptible) <sup>6</sup>	0.04 in/sec PPV	n/a	

#### **TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY**

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

<sup>2</sup> Based on the FICON increase criteria and the land use compatibility criteria for non-noise-sensitive land uses in the OPR General Plan Guidelines, Appendix D.

<sup>3</sup> Source: City of Santa Ana General Plan Noise Element, Table 1.

<sup>4</sup> Source: California Green Building Standards Code Section 5.507

<sup>5</sup> NIOSH, Criteria for Recommended Standard: Occupational Noise Exposure.

<sup>6</sup> Source: Caltrans Transportation and Construction Vibration Guidance Manual, September 2013, Tables 19 & 20.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "n/a" = No nighttime construction activity is permitted, so no nighttime construction noise level limits are identified; "PPV" = peak particle velocity

12282-05 Noise Study



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 six locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Tuesday, May 14<sup>th</sup>, 2019. Appendix 5.1 includes study area photos. Background noise levels are also influenced by the existing John Wayne Airport aircraft overflight activities.

### 5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (23)

## 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. (6) 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. (24)* 

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. (24) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the



future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

#### 5.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the average or equivalent sound levels ( $L_{eq}$ ). The equivalent sound level ( $L_{eq}$ ) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels on Warner Avenue near existing business complex, across from northeast boundary of the Project site. The noise levels at this location consist primarily of traffic noise from Warner Avenue and commercial parking lot vehicle movements. The noise level measurements collected show an overall 24-hour exterior noise level of 65.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 62.9 dBA L<sub>eq</sub> with an average nighttime noise level of 56.7 dBA L<sub>eq</sub>.
- Location L2 represents noise levels on Warner Avenue near Tustin Legacy development, southeast of the Project site. Ambient noise levels at this location account for the daytime operations at the U.S. Armed Forces Reserve Center in addition to traffic noise from Warner Avenue. The noise level measurements collected show an overall 24-hour exterior noise level of 62.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.0 dBA Leq with an average nighttime noise level of 54.2 dBA Leq.
- Location L3 represents the noise levels on Red Hill Avenue near the southeast border of the project site. The noise levels at this location consist primarily of traffic noise from Red Hill Avenue and vehicle movement into business complex parking lot. The noise level measurements collected show an overall 24-hour exterior noise level of 64.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.6 dBA L<sub>eq</sub> with an average nighttime noise level of 56.4 dBA L<sub>eq</sub>.
- Location L4 represents the noise levels on Red Hill Avenue, across from southeastern boundary of the Project site, near Tustin Legacy development. The noise level measurements collected show an overall 24-hour exterior noise level of 62.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 60.9 dBA L<sub>eq</sub> with an average nighttime noise level of 53.2 dBA L<sub>eq</sub>. The noise levels at this location consist primarily of traffic noise from Red Hill Avenue.
- Location L5 represents the noise levels within Project site boundaries, adjacent to southwestern border of the Project site, near light industrial area. The 24-hour CNEL indicates that the overall exterior noise level is 58.9 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 58.0 dBA L<sub>eq</sub> with an average nighttime noise level of 47.6 dBA L<sub>eq</sub>. Background industrial activity represent the primary noise source at this location.



Location L6 represents the noise levels northwest of the Project site, adjacent to existing industrial use. The 24-hour CNEL indicates that the overall exterior noise level is 63.8 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 63.7 dBA L<sub>eq</sub> with an average nighttime noise level of 51.9 dBA L<sub>eq</sub>. Parking lot vehicle movements and background industrial activity represents the primary source of noise at this location.

Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L<sub>1</sub>, L<sub>2</sub>, L<sub>5</sub>, L<sub>8</sub>, L<sub>25</sub>, L<sub>50</sub>, L<sub>90</sub>, L<sub>95</sub>, and L<sub>99</sub> percentile noise levels observed during the daytime and nighttime periods.

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with Warner Avenue and Red Hill Avenue. This includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 5-1.

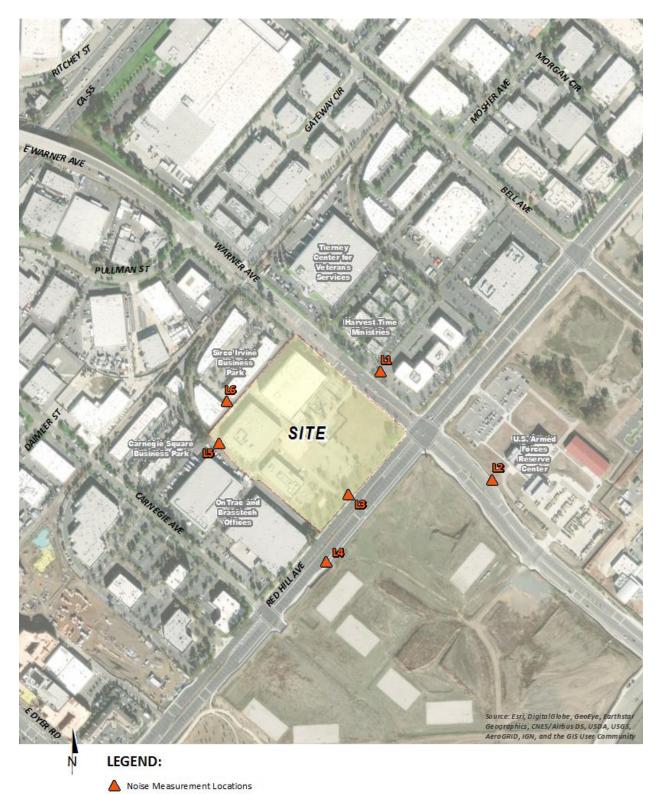
Location <sup>1</sup>	Description	Energy / Noise (dBA	CNEL	
			Nighttime	
L1	Located on Warner Avenue near existing business complex, across from northeast boundary of the Project site.	62.9	56.7	65.1
L2	Located on Warner Avenue near in progress Tustin Legacy development, southeast of the Project site.	61.0	54.2	62.9
L3	Located on Red Hill Avenue near the southeast border of the project site.	61.6	56.4	64.3
L4	Located on Red Hill Avenue, across from southeastern boundary of the Project site, near in progress Tustin Legacy development.	60.9	53.2	62.3
L5	Located within Project site boundaries, adjacent to southwestern border of the Project site, near light industrial area and railroad tracks.	58.0	47.6	58.9
L6	Located northwest of the Project site, adjacent to existing business commercial area.	63.7	51.9	63.8

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.





12282-05 Noise Study



# 6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment.

# 6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The estimated roadway noise impacts from vehicular traffic were calculated using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (25) 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. (26) 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.

## 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 24 study area roadway segments, the distance from the centerline to adjacent land use based on the roadway facility type, and the posted vehicle speeds. For this analysis, soft site conditions are used to analyze the off-site traffic noise impacts within the Project study area. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. Caltrans' research has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model as used in this off-site traffic noise analysis. (27)

The Existing, Opening Year, and Year 2040 average daily traffic volumes derived from the peak hour turning movements used for this study are presented on Table 6-2 and are provided by *The Bowery Traffic Impact Analysis*. (2) Table 6-3 presents the time of day vehicle splits and Table 6-4 presents the traffic flow distributions (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks, and heavy trucks for input into the FHWA noise prediction model.



ID	Roadway	Segment	City	Roadway Facility Type	Distance From Centerline To Nearest Adjacent Land Use (Feet) <sup>1</sup>	Vehicle Speed (mph) <sup>2</sup>
1	Grand Ave.	s/o Warner Ave.	Santa Ana	6-Lane Divided	60'	45
2	Newport Ave.	n/o Valencia Ave.	Tustin	6-Lane Divided	60'	40
3	Red Hill Ave.	n/o Walnut Ave.	Tustin	6-Lane Divided	60'	40
4	Red Hill Ave.	s/o Walnut Ave.	Tustin	6-Lane Divided	60'	40
5	Red Hill Ave.	n/o Valencia Ave.	Tustin	6-Lane Divided	60'	45
6	Red Hill Ave.	s/o Valencia Ave.	Tustin	6-Lane Divided	60'	50
7	Red Hill Ave.	s/o Warner Ave.	Tustin	6-Lane Divided	60'	50
8	Red Hill Ave.	n/o Carnegie Ave.	Tustin	6-Lane Divided	60'	50
9	Red Hill Ave.	s/o Carnegie Ave.	Tustin	6-Lane Divided	60'	50
10	Red Hill Ave.	n/o Barranca Pkwy.	Tustin	8-Lane Divided	70'	50
11	Red Hill Ave.	s/o Barranca Pkwy.	Irvine	8-Lane Divided	70'	50
12	Red Hill Ave.	n/o MacArthur Blvd.	Irvine	6-Lane Divided	60'	50
13	Red Hill Ave.	s/o MacArthur Blvd.	Irvine	4-Lane Divided	40'	50
14	Valencia Ave.	w/o Red Hill Ave.	Tustin	4-Lane Divided	40'	45
15	Valencia Ave.	e/o Red Hill Ave.	Tustin	4-Lane Divided	40'	45
16	Warner Ave.	w/o Grand Ave.	Santa Ana	4-Lane Divided	40'	45
17	Warner Ave.	e/o Grand Ave.	Santa Ana	4-Lane Divided	40'	45
18	Warner Ave.	w/o Red Hill Ave.	Santa Ana	6-Lane Divided	60'	45
19	Warner Ave.	e/o Red Hill Ave.	Tustin	6-Lane Divided	60'	50
20	Dyer Rd.	w/o Red Hill Ave.	Santa Ana	6-Lane Divided	60'	40
21	Barranca Pkwy.	e/o Red Hill Ave.	Tustin	8-Lane Divided	70'	50
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	Tustin	8-Lane Divided	70'	50
23	MacArthur Blvd.	w/o Red Hill Ave.	Irvine	8-Lane Divided	70'	50
24	MacArthur Blvd.	e/o Red Hill Ave.	Irvine	8-Lane Divided	70'	50

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

<sup>1</sup> Distance to adjacent land use is based upon the right-of-way distances for each roadway facility type <sup>2</sup> Source: The Bowery Traffic Impact Analysis, November 2019

				Avera	ge Daily T	raffic (1,0	000's)1	
ID	Roadway	Segment	Exist	ting	Openin	g Year	Year	2040
	Noauway	Segment	Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Grand Ave.	s/o Warner Ave.	20.5	20.6	21.6	21.7	20.0	20.1
2	Newport Ave.	n/o Valencia Ave.	10.6	10.8	11.9	12.2	20.8	21.0
3	Red Hill Ave.	n/o Walnut Ave.	23.9	24.0	26.0	26.1	29.5	29.6
4	Red Hill Ave.	s/o Walnut Ave.	24.9	25.0	27.0	27.1	31.2	31.3
5	Red Hill Ave.	n/o Valencia Ave.	23.9	24.1	26.1	26.3	32.0	32.2
6	Red Hill Ave.	s/o Valencia Ave.	27.4	27.9	28.6	29.2	30.9	31.5
7	Red Hill Ave.	s/o Warner Ave.	33.0	34.8	34.4	36.1	38.5	40.2
8	Red Hill Ave.	n/o Carnegie Ave.	32.8	35.7	34.1	37.0	37.2	40.1
9	Red Hill Ave.	s/o Carnegie Ave.	31.9	34.9	33.2	36.2	37.5	40.5
10	Red Hill Ave.	n/o Barranca Pkwy.	32.6	35.6	36.7	39.6	40.7	43.6
11	Red Hill Ave.	s/o Barranca Pkwy.	32.8	34.3	37.1	38.7	41.1	42.7
12	Red Hill Ave.	n/o MacArthur Blvd.	47.3	48.1	52.1	52.9	58.5	59.3
13	Red Hill Ave.	s/o MacArthur Blvd.	21.5	21.9	22.2	22.5	24.3	24.7
14	Valencia Ave.	w/o Red Hill Ave.	7.7	8.0	9.0	9.3	15.3	15.6
15	Valencia Ave.	e/o Red Hill Ave.	9.6	9.7	12.0	12.1	21.6	21.7
16	Warner Ave.	w/o Grand Ave.	24.3	24.4	25.8	26.0	27.6	27.7
17	Warner Ave.	e/o Grand Ave.	22.9	23.6	24.2	24.9	32.1	32.9
18	Warner Ave.	w/o Red Hill Ave.	23.0	26.0	24.3	27.3	36.8	39.8
19	Warner Ave.	e/o Red Hill Ave.	15.1	16.6	16.3	17.7	31.2	32.6
20	Dyer Rd.	w/o Red Hill Ave.	25.5	26.0	29.3	29.8	34.9	35.4
21	Barranca Pkwy.	e/o Red Hill Ave.	30.1	31.0	35.9	36.8	39.3	40.3
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	33.7	34.4	38.2	39.0	41.8	42.5
23	MacArthur Blvd.	w/o Red Hill Ave.	31.5	31.5	33.2	33.3	38.7	38.8
24	MacArthur Blvd.	e/o Red Hill Ave.	25.5	25.8	29.1	29.4	31.2	31.6

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

<sup>1</sup> Source: Derived from the PM peak hour volumes from The Bowery Traffic Impact Analysis, November 2019.



		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> Source: Typical Southern California vehicle mix & County of Orange Land Use/Noise Compatibility Manual, December 1993. "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: DISTRIBUTION OF TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)

Classification		Total % Traffic Flow		Total
Classification	Autos	Medium Trucks	Heavy Trucks	Total
All Roadways <sup>1</sup>	97.42%	1.84%	0.74%	100.00%

<sup>1</sup> Source: County of Orange Land Use/Noise Compatibility Manual, December 1993.

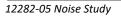
## 6.1.2 ON-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

The on-site roadway parameters including the average daily traffic (ADT) volumes used for this study are presented on Table 6-5. Future traffic volumes on Warner Avenue and Red Hill Avenue are based on *The Bowery Traffic Impact Analysis* Horizon Year 2040 with Project volumes. (2) Hard site conditions are used to account for the sound propagation loss over reflective surfaces between the source and receiver. As previously described, Table 6-3 presents the time of day vehicle splits and Table 6-4 presents the traffic flow distributions (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks, and heavy trucks for input into the FHWA noise prediction model.

#### TABLE 6-5: ON-SITE ROADWAY PARAMETERS

Roadway	Lanes	Facility Type	Future ADT Volume <sup>1</sup>	Posted Speed Limits (mph)	Site Conditions
Warner Ave.	6	Divided	39,800	45	Hard
Red Hill Ave.	6	Divided	40,200	50	Hard

<sup>1</sup> Derived from the Horizon Year 2040 with Project PM peak hour volumes from The Bowery Traffic Impact Analysis, November 2019. "ADT" = Average Daily Traffic





# 6.2 CONSTRUCTION VIBRATION ASSESSMENT METHODOLOGY

This analysis focuses on the potential ground-borne vibration associated with vehicular traffic and construction activities. Ground-borne vibration levels from automobile traffic are generally overshadowed by vibration generated by heavy trucks that roll over the same uneven roadway surfaces. However, due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity.

While vehicular traffic is rarely perceptible, construction activity 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 6-6. Based on the reference vibration levels provided by the Federal Transit Administration (FTA) for various construction equipment types, it is possible to estimate the potential building damage and human response (annoyance) using the following vibration assessment methods defined by the FTA and Caltrans. To describe the potential vibration impacts, the following equation is used:  $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$ 

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

## TABLE 6-6: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment.



This page intentionally left blank



# 7 OFF-SITE TRANSPORTATION NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *The Bowery Traffic Impact Analysis*. (2) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

- <u>Existing Conditions Without Project</u>: This scenario refers to the existing present-day noise conditions without the proposed Project.
  - <u>Existing With Project</u>: This scenario refers to the existing present-day noise conditions with the proposed Project.
- <u>Opening Year Without the Project</u>: This scenario refers to Opening Year noise conditions without the proposed Project.
  - <u>Opening Year With Project</u>: This scenario includes all cumulative projects identified in the *Traffic Impact Analysis*.
- <u>Horizon Year 2040 Without Project</u>: This scenario refers to the background noise conditions at Horizon Year 2040 without the proposed Project.
  - <u>Horizon Year 2040 With Project</u>: This scenario corresponds to Horizon Year 2040 conditions, and includes all cumulative projects identified in the *Traffic Impact Analysis*.

# 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 and 7-6 present a summary of the exterior traffic noise levels, without barrier attenuation, for the 24 study area roadway segments analyzed from the without Project to the with Project conditions for Existing, Opening Year, and Horizon Year 2040 conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.



			Adjacent	CNEL at Nearest	Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	70.9	69	149	320
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	66.7	RW	78	169
3	Red Hill Ave.	n/o Walnut Ave.	Residential	70.3	63	135	291
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	70.5	65	139	300
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	71.6	76	164	354
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.3	100	215	462
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.1	113	243	524
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.1	112	242	521
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.0	110	238	513
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	73.3	117	251	541
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	73.3	117	252	543
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	75.7	143	309	666
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.1	65	139	300
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	67.5	RW	59	127
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	68.4	RW	68	146
16	Warner Ave.	w/o Grand Ave.	Industrial	72.5	59	126	272
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	72.2	56	122	262
18	Warner Ave.	w/o Red Hill Ave.	Office	71.4	74	160	345
19	Warner Ave.	e/o Red Hill Ave.	TLSP	70.7	67	145	311
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	70.6	66	141	304
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	73.0	111	238	513
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	73.5	119	257	553
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	73.2	114	245	528
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	72.3	99	213	459

TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Santa Ana Land Use Element (Exhibit 2) & City of Tustin General Plan & City of Irvine Land Use Figure A-3

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

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



	Dead Comment		Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment		Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	70.9	69	149	321
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	66.8	RW	80	171
3	Red Hill Ave.	n/o Walnut Ave.	Residential	70.3	63	136	292
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	70.5	65	139	300
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	71.6	77	165	356
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.4	101	218	469
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.3	117	252	542
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.5	119	256	552
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.4	117	252	544
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	73.7	123	266	573
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	73.5	121	260	560
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	75.8	145	313	673
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.2	65	141	303
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	67.7	RW	60	130
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	68.5	RW	68	147
16	Warner Ave.	w/o Grand Ave.	Industrial	72.5	59	127	273
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	72.4	58	124	267
18	Warner Ave.	w/o Red Hill Ave.	Office	71.9	81	174	375
19	Warner Ave.	e/o Red Hill Ave.	TLSP	71.1	71	154	331
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	70.7	66	143	308
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	73.1	113	243	523
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	73.6	121	260	561
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	73.2	114	246	529
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	72.3	100	215	463

<b>TABLE 7-2:</b>	EXISTING WITH PROJECT	CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Santa Ana Land Use Element (Exhibit 2) & City of Tustin General Plan & City of Irvine Land Use Figure A-3 <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

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



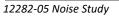
	Dead Comment		Adjacent	CNEL at Nearest			Distance to Contour from Centerline (Feet)		
ID	Road	Segment	Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL		
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	71.1	71	154	331		
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	67.3	RW	85	183		
3	Red Hill Ave.	n/o Walnut Ave.	Residential	70.7	66	143	308		
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	70.8	68	147	316		
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	72.0	81	174	376		
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.5	103	221	476		
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.3	116	250	538		
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.3	115	248	535		
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.1	113	244	526		
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	73.8	126	272	585		
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	73.9	127	274	590		
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	76.1	153	330	710		
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.2	66	142	306		
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	68.2	RW	65	140		
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	69.4	RW	79	171		
16	Warner Ave.	w/o Grand Ave.	Industrial	72.8	61	132	284		
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	72.5	59	126	272		
18	Warner Ave.	w/o Red Hill Ave.	Office	71.6	77	166	358		
19	Warner Ave.	e/o Red Hill Ave.	TLSP	71.0	70	152	327		
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	71.2	72	155	334		
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	73.7	124	268	577		
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	74.0	130	279	602		
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	73.4	118	254	548		
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	72.8	108	233	501		

#### TABLE 7-3: OPENING YEAR WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Santa Ana Land Use Element (Exhibit 2) & City of Tustin General Plan & City of Irvine Land Use Figure A-3

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

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





			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	71.1	71	154	332
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	67.4	RW	86	186
3	Red Hill Ave.	n/o Walnut Ave.	Residential	70.7	67	143	309
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	70.8	68	147	317
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	72.0	81	175	378
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.6	104	224	482
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.5	120	258	556
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.6	122	263	566
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.5	120	258	557
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	74.2	133	286	616
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	74.1	131	282	607
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	76.2	155	333	718
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.3	67	143	309
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	68.3	RW	67	144
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	69.5	RW	80	171
16	Warner Ave.	w/o Grand Ave.	Industrial	72.8	61	132	285
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	72.6	60	129	277
18	Warner Ave.	w/o Red Hill Ave.	Office	72.1	83	180	387
19	Warner Ave.	e/o Red Hill Ave.	TLSP	71.4	75	161	346
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	71.2	73	156	337
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	73.9	126	272	587
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	74.1	131	283	609
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	73.4	118	255	548
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	72.9	109	235	505

TABLE 7-4: OPENING YEAR WITH PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Santa Ana Land Use Element (Exhibit 2) & City of Tustin General Plan & City of Irvine Land Use Figure A-3

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

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



			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	70.8	68	146	315
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	69.7	RW	123	265
3	Red Hill Ave.	n/o Walnut Ave.	Residential	71.2	72	155	335
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	71.5	75	162	348
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	72.8	93	200	430
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.8	108	233	502
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.8	125	269	580
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.6	122	263	567
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.7	123	265	571
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	74.3	135	291	627
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	74.3	136	293	632
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	76.6	165	356	767
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.6	70	151	325
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	70.5	43	93	200
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	72.0	54	117	252
16	Warner Ave.	w/o Grand Ave.	Industrial	73.0	64	138	296
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	73.7	71	152	328
18	Warner Ave.	w/o Red Hill Ave.	Office	73.4	102	219	472
19	Warner Ave.	e/o Red Hill Ave.	TLSP	73.9	109	234	504
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	71.9	81	174	375
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	74.1	132	285	613
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	74.4	138	296	639
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	74.1	131	282	607
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	73.1	113	244	526

#### TABLE 7-5: HORIZON YEAR 2040 WITHOUT PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Santa Ana Land Use Element (Exhibit 2) & City of Tustin General Plan & City of Irvine Land Use Figure A-3

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

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



			Adjacent	CNEL at Nearest		nce to Co enterline	
ID	Road	Segment	Land Use <sup>1</sup>	Adjacent Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	70.8	68	146	315
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	69.7	RW	124	267
3	Red Hill Ave.	n/o Walnut Ave.	Residential	71.2	72	156	336
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	71.5	75	162	349
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	72.9	93	200	432
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.9	109	236	508
7	Red Hill Ave.	s/o Warner Ave.	TLSP	75.0	129	277	597
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	75.0	128	277	596
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	75.0	129	279	600
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	74.6	142	305	657
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	74.5	140	301	648
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	76.7	167	359	774
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.7	71	152	328
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	70.6	44	94	203
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	72.0	54	117	252
16	Warner Ave.	w/o Grand Ave.	Industrial	73.1	64	138	297
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	73.8	72	155	333
18	Warner Ave.	w/o Red Hill Ave.	Office	73.8	107	231	498
19	Warner Ave.	e/o Red Hill Ave.	TLSP	74.1	112	241	520
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	72.0	81	176	378
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	74.2	134	289	623
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	74.5	139	300	646
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	74.1	131	282	608
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	73.2	114	246	530

#### TABLE 7-6: HORIZON YEAR 2040 WITH PROJECT CONDITIONS NOISE CONTOURS

<sup>1</sup> Sources: City of Santa Ana Land Use Element (Exhibit 2) & City of Tustin General Plan & City of Irvine Land Use Figure A-3

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

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



## 7.2 EXISTING CONDITION PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until opening year conditions. Table 7-1 presents the Existing without Project conditions CNEL noise levels. The without Project exterior noise levels are expected to range from 66.7 to 75.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-2 shows the Existing with Project conditions will range from 66.8 to 75.8 dBA CNEL. As shown on Table 7-7 the Project will generate a noise level increase of up to 0.5 dBA CNEL on the study area roadway segments.

ID	Road	Cognest	Adjacent		EL at Adjao nd Use (dB		Noise- Sensitive	Off-Site Traffic Noise	Threshold
U	Rodu	Segment	Land Use <sup>1</sup>	No Project	With Project	Project Addition	Land Use?	Threshold <sup>3</sup>	Exceeded? <sup>3</sup>
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	70.9	70.9	0.0	No	3.0	No
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	66.7	66.8	0.1	No	5.0	No
3	Red Hill Ave.	n/o Walnut Ave.	Residential	70.3	70.3	0.0	Yes	1.5	No
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	70.5	70.5	0.0	Yes	1.5	No
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	71.6	71.6	0.0	No	3.0	No
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.3	73.4	0.1	No	3.0	No
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.1	74.3	0.2	No	3.0	No
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.1	74.5	0.4	No	3.0	No
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.0	74.4	0.4	No	3.0	No
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	73.3	73.7	0.4	No	3.0	No
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	73.3	73.5	0.2	No	3.0	No
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	75.7	75.8	0.1	No	3.0	No
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.1	73.2	0.1	No	3.0	No
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	67.5	67.7	0.2	No	5.0	No
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	68.4	68.5	0.1	No	5.0	No
16	Warner Ave.	w/o Grand Ave.	Industrial	72.5	72.5	0.0	No	3.0	No
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	72.2	72.4	0.2	No	3.0	No
18	Warner Ave.	w/o Red Hill Ave.	Office	71.4	71.9	0.5	No	3.0	No
19	Warner Ave.	e/o Red Hill Ave.	TLSP	70.7	71.1	0.4	No	3.0	No
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	70.6	70.7	0.1	No	3.0	No
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	73.0	73.1	0.1	No	3.0	No
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	73.5	73.6	0.1	No	3.0	No
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	73.2	73.2	0.0	No	3.0	No
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	72.3	72.3	0.0	No	3.0	No
<sup>1</sup> The	CNEL is calculated at the	boundary of the right-of-way o	feach roadway and the property line	of the neare	st adjacent	land use.		•	

### TABLE 7-7: EXISTING OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

 $^{1}$  The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

<sup>2</sup> Significance Criteria (Section 4).



# 7.3 OPENING YEAR 2022 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-3 presents the Opening Year without Project conditions CNEL noise levels which are expected to range from 67.3 to 76.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-4 shows the Opening Year with Project conditions will range from 67.4 to 76.2 dBA CNEL. As shown on Table 7-8 the Project will generate a noise level increase of up to 0.5 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Opening Year with Project conditions at the land uses adjacent to roadways conveying Project traffic.

ID	Road	Cogmont	Adjacent	CNEL at Adjacent Land Use (dBA) <sup>1</sup>			Noise- Sensitive	Off-Site Traffic Noise	Threshold	
U	Road	Segment	Land Use <sup>1</sup>	No Project	With Project	Project Addition	Land Use?	Threshold <sup>3</sup>	Exceeded? <sup>3</sup>	
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	71.1	71.1	0.0	No	3.0	No	
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	67.3	67.4	0.1	No	5.0	No	
3	Red Hill Ave.	n/o Walnut Ave.	Residential	70.7	70.7	0.0	Yes	1.5	No	
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	70.8	70.8	0.0	Yes	1.5	No	
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	72.0	72.0	0.0	No	3.0	No	
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.5	73.6	0.1	No	3.0	No	
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.3	74.5	0.2	No	3.0	No	
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.3	74.6	0.3	No	3.0	No	
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.1	74.5	0.4	No	3.0	No	
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	73.8	74.2	0.4	No	3.0	No	
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	73.9	74.1	0.2	No	3.0	No	
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	76.1	76.2	0.1	No	3.0	No	
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.2	73.3	0.1	No	3.0	No	
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	68.2	68.3	0.1	No	5.0	No	
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	69.4	69.5	0.1	No	5.0	No	
16	Warner Ave.	w/o Grand Ave.	Industrial	72.8	72.8	0.0	No	3.0	No	
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	72.5	72.6	0.1	No	3.0	No	
18	Warner Ave.	w/o Red Hill Ave.	Office	71.6	72.1	0.5	No	3.0	No	
19	Warner Ave.	e/o Red Hill Ave.	TLSP	71.0	71.4	0.4	No	3.0	No	
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	71.2	71.2	0.0	No	3.0	No	
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	73.7	73.9	0.2	No	3.0	No	
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	74.0	74.1	0.1	No	3.0	No	
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	73.4	73.4	0.0	No	3.0	No	
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	72.8	72.9	0.1	No	3.0	No	

TABLE 7-8: OPENING YEAR OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

<sup>2</sup> Significance Criteria (Section 4).



## 7.4 HORIZON YEAR 2040 PROJECT TRAFFIC NOISE LEVEL CONTRIBUTIONS

Table 7-5 presents the Horizon Year 2040 without Project conditions CNEL noise levels are expected to range from 69.7 to 76.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-6 shows the Horizon Year 2040 with Project conditions will range from 69.7 to 76.7 dBA CNEL. As shown on Table 7-9 the Project will generate a noise level increase of up to 0.4 dBA CNEL on the study area roadway segments. Based on the significance criteria in Section 4, the Project-related noise level increases are considered *less than significant* under Horizon Year 2040 with Project conditions at the land uses adjacent to roadways conveying Project traffic.

	Road	Comment	Adjacent		CNEL at Adjacent Land Use (dBA) <sup>1</sup>			Off-Site Traffic Noise		
ID	Rođu	Segment	Land Use <sup>1</sup>	No Project	With Project	Project Addition	Land Use?	Threshold <sup>3</sup>	Exceeded? <sup>3</sup>	
1	Grand Ave.	s/o Warner Ave.	Industrial and Office	70.8	70.8	0.0	No	3.0	No	
2	Newport Ave.	n/o Valencia Ave.	Commercial/Business	69.7	69.7	0.0	No	5.0	No	
3	Red Hill Ave.	n/o Walnut Ave.	Residential	71.2	71.2	0.0	Yes	1.5	No	
4	Red Hill Ave.	s/o Walnut Ave.	Residential/Institutional	71.5	71.5	0.0	Yes	1.5	No	
5	Red Hill Ave.	n/o Valencia Ave.	Commercial/Business/TLSP	72.8	72.9	0.1	No	3.0	No	
6	Red Hill Ave.	s/o Valencia Ave.	Commercial/Business/TLSP	73.8	73.9	0.1	No	3.0	No	
7	Red Hill Ave.	s/o Warner Ave.	TLSP	74.8	75.0	0.2	No	3.0	No	
8	Red Hill Ave.	n/o Carnegie Ave.	TLSP	74.6	75.0	0.4	No	3.0	No	
9	Red Hill Ave.	s/o Carnegie Ave.	TLSP	74.7	75.0	0.3	No	3.0	No	
10	Red Hill Ave.	n/o Barranca Pkwy.	TLSP	74.3	74.6	0.3	No	3.0	No	
11	Red Hill Ave.	s/o Barranca Pkwy.	Urban and Industrial	74.3	74.5	0.2	No	3.0	No	
12	Red Hill Ave.	n/o MacArthur Blvd.	Urban and Industrial	76.6	76.7	0.1	No	3.0	No	
13	Red Hill Ave.	s/o MacArthur Blvd.	Urban and Industrial	73.6	73.7	0.1	No	3.0	No	
14	Valencia Ave.	w/o Red Hill Ave.	Commercial/Business	70.5	70.6	0.1	No	3.0	No	
15	Valencia Ave.	e/o Red Hill Ave.	TLSP	72.0	72.0	0.0	No	3.0	No	
16	Warner Ave.	w/o Grand Ave.	Industrial	73.0	73.1	0.1	No	3.0	No	
17	Warner Ave.	e/o Grand Ave.	Industrial and Office	73.7	73.8	0.1	No	3.0	No	
18	Warner Ave.	w/o Red Hill Ave.	Office	73.4	73.8	0.4	No	3.0	No	
19	Warner Ave.	e/o Red Hill Ave.	TLSP	73.9	74.1	0.2	No	3.0	No	
20	Dyer Rd.	w/o Red Hill Ave.	Office and District Center	71.9	72.0	0.1	No	3.0	No	
21	Barranca Pkwy.	e/o Red Hill Ave.	TLSP	74.1	74.2	0.1	No	3.0	No	
22	Barranca Pkwy.	w/o Tustin Ranch Rd.	TLSP	74.4	74.5	0.1	No	3.0	No	
23	MacArthur Blvd.	w/o Red Hill Ave.	Urban and Industrial	74.1	74.1	0.0	No	3.0	No	
24	MacArthur Blvd.	e/o Red Hill Ave.	Urban and Industrial	73.1	73.2	0.1	No	3.0	No	

TABLE 7-9: HORIZON YEAR 2040 OFF-SITE PROJECT-RELATED TRAFFIC NOISE IMPACTS

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest adjacent land use.

<sup>2</sup> Significance Criteria (Section 4).



# 8 ON-SITE NOISE IMPACTS

A noise impact analysis has been completed to determine the noise exposure levels that would result from off-site transportation noise sources, and to identify potential noise mitigation measures that would achieve acceptable Project exterior and interior noise levels. The primary source of traffic noise affecting the Project site is anticipated to be from Warner Avenue and Red Hill Avenue. The Project will also experience some background aircraft noise impacts associated with JWA. However, since the Project site is located outside the 55 dBA CNEL aircraft noise level contour boundaries of JWA, the aircraft noise level impacts area considered *less than significant*. In addition, the County of Orange has adopted the General Aviation Noise Ordinance (GANO) that prohibits commercial aircraft departures between the hours of 10:00 p.m. and 7:00 a.m. and arrivals between the hours of 11:00 p.m. and 7:00 a.m. (20) These restrictions substantially reduce the aircraft noise levels impacts during the noise sensitive nighttime hours for residential use.

## 8.1 EXTERIOR NOISE ANALYSIS

Using the FHWA traffic noise prediction model, and the parameters outlined in Section 6, the expected future exterior noise levels were calculated at the multi-family outdoor common areas the residential building façades and at the retail building façades for the planned commercial retail land uses.

## 8.1.1 OUTDOOR COMMON AREAS

A review of the Project site plan suggests that the multi-family residential outdoor common areas will be limited to the rooftops of Building A, Building B as well as the courtyard areas for Building C and Building D. The location and design of the multi-family residential outdoor common areas substantially limits the potential exposure of these areas to the traffic noise from Warner Avenue and Red Hill Avenue. For example, the roof-deck representing the outdoor common areas for Building A, is located on top of the 7-level parking structure and is screened from both Warner Avenue and Red Hill Avenue by the structure itself including the fitness and clubroom buildings.

Table 8-1 presents a summary of future exterior noise levels at the outdoor common areas. The on-site transportation analysis indicates that the unmitigated exterior noise levels multi-family outdoor common areas will range from 45.1 to 57.7 dBA CNEL. The outdoor common area exterior traffic noise analysis calculations are provided in Appendix 8.1. As shown on Table 8-1, future unmitigated on-site traffic noise levels are expected to satisfy the City of Santa Ana General Plan Noise Element 65 dBA CNEL exterior noise level standard for outdoor common areas within the Project site with exterior noise levels approaching 57.7 dBA CNEL. As such, the future on-site traffic noise impacts at the multi-family residential outdoor common areas are considered *less than significant* impacts.



The City of Santa Ana does not identify any exterior noise level limits for the commercial retail uses. Therefore, analysis of the commercial retail land use is limited to the interior noise levels significance criteria outlined in California Green Building Standards Code Section 5.507. No exterior noise analysis is provided for the planned commercial retail plaza or outdoor patio areas.

Outdoor Common Area	Floor	Roadway	Exterior Noise Level (dBA CNEL) <sup>1</sup>	Threshold (dBA CNEL) <sup>2</sup>	Threshold Exceeded?
Bldg. A	7	Warner Ave.	49.7	65	No
Bldg. B	7	Red Hill Ave.	46.1	65	No
Bldg. C	1	Red Hill Ave.	45.1	65	No
Bldg. D	1	Warner Ave.	57.7	65	No

TABLE 8-1: OUTDOOR COMMON AREA EXTERIOR TRAFFIC NOISE LEVELS

<sup>1</sup> Unmitigated exterior noise level within the outdoor common area. <sup>2</sup> See Section 4.

## 8.1.2 BUILDING FACADE

Table 8-2 presents a summary of future exterior noise levels at the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>-6<sup>th</sup> floor building facades where residential units would be located. The on-site transportation analysis indicates that the unmitigated exterior noise levels will range from 68.5 to 73.2 dBA CNEL at the building façades. The on-site traffic noise analysis calculations at the building facades are provided in Appendix 8.2.

On Cita		Exterior Noise Level at Façade (dBA CNEL)						
On-Site Receiver Location	Roadway	1st Floor	2nd Floor	3rd Floor	4th-6th Floors			
	Warner Ave.	73.2	73.1	72.9	72.6			
Bldg. A	Red Hill Ave.	_1	70.7	70.7	70.6			
Bldg. B	Red Hill Ave.	_1	68.6	68.6	68.5			
Bldg. C	Red Hill Ave.	_1	72.2	72.1	72.0			
Bldg. D	Warner Ave.	73.2	73.1	72.9	72.6			
Detail	Warner Ave.	73.1	_ <sup>2</sup>	_ <sup>2</sup>	_ <sup>2</sup>			
Retail	Red Hill Ave.	72.7	_2	_2	_ <sup>2</sup>			

<sup>1</sup> No residential use at this level.

<sup>2</sup> No commercial retail land use at this level.

Future on-site traffic noise levels at the residential building façades are shown to approach 73.2 dBA CNEL, which, based on Figure 2 of the OPR's *General Plan Guidelines, Appendix D: Noise Element Guidelines,* represents *normally unacceptable* land use. New construction within this



land use compatibility category is required to demonstrate compliance with interior noise level standards by identifying any necessary noise reduction measures. (14) Therefore, based on the future exterior traffic noise levels, Project interior noise levels are analyzed herein to identify the necessary interior noise reduction measures to satisfy the City of Santa Ana General Plan Noise Element 45 dBA CNEL interior noise level standard for multi-family residential land use and the California Green Building Standard of 50 dBA L<sub>eq</sub> for the commercial retail land use.

## 8.2 INTERIOR NOISE ANALYSIS

To ensure that the interior noise levels comply with the interior noise level standards, future exterior noise levels were calculated at the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>-6<sup>th</sup> floor building facades where residential units would be located.

## 8.2.1 NOISE REDUCTION METHODOLOGY

The interior noise level is the difference between the predicted exterior noise level at the building facade and the noise reduction of the structure. Typical building construction will provide a Noise Reduction (NR) of approximately 12 dBA with "windows open" and a minimum 25 dBA noise reduction with "windows closed." (28; 29) However, sound leaks, cracks and openings within the window assembly can greatly diminish its effectiveness in reducing noise. Several methods are used to improve interior noise reduction, including: [1] weather-stripped solid core exterior doors; [2] upgraded dual glazed windows; [3] mechanical ventilation/air conditioning; and [4] exterior wall/roof assembles free of cut outs or openings.

## 8.2.2 INTERIOR NOISE REDUCTION CALCULATIONS

The noise reduction characteristics of a building are determined by combining the transmission loss of each of the building components that make up the building. Each unique component has a transmission loss value. For residential units, the critical building components include the roof, walls, windows, doors, and attic configuration and insulation characteristics. The total noise reduction is dependent upon the transmission loss of each element and the surface area of that element in relation to the total surface area of the room. To account for the acoustic energy absorbed within a room, the absorption coefficients for individual surface areas such as drywall and carpet are used to calculate the interior room effects. The calculated building noise reduction includes both the transmission loss associated with the exterior wall assembly and the room absorption characteristics.

Noise reduction calculations are based on the architectural floor plans prepared by Architects Orange. (30) The floor plans for the interior rooms with exterior walls of The Bowery Project were used to estimate the "windows closed" interior noise levels. To satisfy the City of Santa Ana NR requirements for exterior noise levels, the calculations were completed using standard windows with a minimum Sound Transmission Class (STC) of 27 As shown on Table 8-3, the calculated interior noise reduction with standard windows (STC 27) will range from 29.7 to 31.3 dBA CNEL. The interior noise reduction calculations are included in Appendix 8.3 for each floor plan indicated on Table 8-2.



Floor Plans Adjacent to Roadways	Room	Calculated NR (STC 27) <sup>1</sup>
A1	Bedroom	30.7
A3	Bedroom	30.6
B2	Bedroom	31.3
B5	Bedroom	30.5
S1	Bedroom	30.4
S2	Living	29.7
Commerc	25.0	

## TABLE 8-3: INTERIOR NOISE REDUCTION CALCULATIONS

<sup>1</sup> Interior noise reduction calculations included in Appendix 8.3.

<sup>2</sup> Standard building construction typically provides up to 25 dBA of attenuation.

"NR" = Noise Reduction

## 8.2.3 INTERIOR NOISE LEVEL ASSESSMENT

Tables 8-4 to 8-7 show that the multi-family residential units within the Project building will require a windows-closed condition and a means of mechanical ventilation (e.g. air conditioning). Table 8-4 shows that the future exterior noise levels at the first-floor building façades facing Warner Avenue are expected at 73.2 dBA CNEL. The first-floor interior noise level analysis shows that the City of Santa Ana 45 dBA CNEL multi-family residential interior noise standards can be satisfied using standard windows and doors with minimum STC ratings of 27 for units facing to Warner Avenue. In addition, the first-floor interior noise level analysis shows that the CALGreen 50 dBA L<sub>eq</sub> non-residential interior noise standards can be satisfied using standard building construction.

Tables 8-5 to 8-7 provide the interior noise level assessment for the second, third and fourth to sixth floor building facades. Table 8-5 to 8-7 also indicate that the City of Santa Ana 45 dBA CNEL multi-family residential interior noise standards can be satisfied using standard windows and doors with minimum STC ratings of 27 for units facing Warner Avenue and Red Hill Avenue. The interior noise level assessment shows that interior noise levels will be *less than significant*.



Receiver Location	Unit Plan	Noise Level at Façade <sup>1</sup>	Required Interior NR <sup>2</sup>	Minimum Calculated Interior NR <sup>3</sup>	Upgraded Windows⁴	Interior Noise Level⁵	Threshold	Threshold Exceeded?
	A1	73.2	28.2	30.7	No	42.5	45	No
	A3	73.2	28.2	30.6	No	42.6	45	No
Bldg. A	B2	73.2	28.2	31.3	No	41.9	45	No
Warner Ave.	B5	73.2	28.2	30.5	No	42.7	45	No
	S1	73.2	28.2	30.4	No	42.8	45	No
	S2	73.2	28.2	29.7	No	43.5	45	No
	A1	73.2	28.2	30.7	No	42.5	45	No
	A3	73.2	28.2	30.6	No	42.6	45	No
Bldg. D	B2	73.2	28.2	31.3	No	41.9	45	No
Warner Ave.	B5	73.2	28.2	30.5	No	42.7	45	No
	S1	73.2	28.2	30.4	No	42.8	45	No
	S2	73.2	28.2	29.7	No	43.5	45	No
Retail-Warner Ave.		73.1	23.1	25.0	No	48.1	50	No
Retail-Red Hill Ave.		72.7	22.7	25.0	No	47.7	50	No

TABLE 8-4: FIRST-FLOOR INTERIOR NOISE IMPACTS (CNEL)

<sup>2</sup> Noise reduction required to satisfy the City of Santa Ana General Plan, Table 1, 45 dBA CNEL interior noise standard for residential uses.

<sup>3</sup> Minimum calculated interior noise reduction from all rooms for each unit plan as shown on Table 8-2.

<sup>4</sup> Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?

<sup>5</sup> Estimated interior noise level with minimum STC rating for all windows.



Receiver Location	Unit Plan	Noise Level at Façade <sup>1</sup>	Required Interior NR <sup>2</sup>	Minimum Calculated Interior NR <sup>3</sup>	Upgraded Windows⁴	Interior Noise Level⁵	Threshold	Threshold Exceeded?
	A1	73.1	28.1	30.7	No	42.4	45	No
	A3	73.1	28.1	30.6	No	42.5	45	No
Bldg. A	B2	73.1	28.1	31.3	No	41.8	45	No
Warner Ave.	B5	73.1	28.1	30.5	No	42.6	45	No
, wei	S1	73.1	28.1	30.4	No	42.7	45	No
	S2	73.1	28.1	29.7	No	43.4	45	No
	A1	70.7	25.7	30.7	No	40.0	45	No
	A3	70.7	25.7	30.6	No	40.1	45	No
Bldg. A	B2	70.7	25.7	31.3	No	39.4	45	No
Red Hill Ave.	B5	70.7	25.7	30.5	No	40.2	45	No
Ave.	S1	70.7	25.7	30.4	No	40.3	45	No
	S2	70.7	25.7	29.7	No	41.0	45	No
	A1	68.6	23.6	30.7	No	37.9	45	No
	A3	68.6	23.6	30.6	No	38.0	45	No
Bldg. B	B2	68.6	23.6	31.3	No	37.3	45	No
Red Hill Ave.	B5	68.6	23.6	30.5	No	38.1	45	No
////	S1	68.6	23.6	30.4	No	38.2	45	No
	S2	68.6	23.6	29.7	No	38.9	45	No
	A1	72.2	27.2	30.7	No	41.5	45	No
	A3	72.2	27.2	30.6	No	41.6	45	No
Bldg. C	B2	72.2	27.2	31.3	No	40.9	45	No
Red Hill Ave.	B5	72.2	27.2	30.5	No	41.7	45	No
Ανς.	S1	72.2	27.2	30.4	No	41.8	45	No
	S2	72.2	27.2	29.7	No	42.5	45	No
	A1	73.1	28.1	30.7	No	42.4	45	No
	A3	73.1	28.1	30.6	No	42.5	45	No
Bldg. D	B2	73.1	28.1	31.3	No	41.8	45	No
Warner	B5	73.1	28.1	30.5	No	42.6	45	No
Ave.	S1	73.1	28.1	30.4	No	42.7	45	No
	S2	73.1	28.1	29.7	No	43.4	45	No

TABLE 8-5: SECOND-FLOOR INTERIOR NOISE IMPACTS (CNEL)

<sup>2</sup> Noise reduction required to satisfy the City of Santa Ana General Plan, Table 1, 45 dBA CNEL interior noise standard for residential uses.

<sup>3</sup> Minimum calculated interior noise reduction from all rooms for each unit plan as shown on Table 8-2.

<sup>4</sup> Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?

<sup>5</sup> Estimated interior noise level with minimum STC rating for all windows.



Receiver Location	Unit Plan	Noise Level at Façade <sup>1</sup>	Required Interior NR <sup>2</sup>	Minimum Calculated Interior NR <sup>3</sup>	Upgraded Windows <sup>4</sup>	Interior Noise Level⁵	Threshold	Threshold Exceeded?
	A1	72.9	27.9	30.7	No	42.2	45	No
	A3	72.9	27.9	30.6	No	42.3	45	No
Bldg. A	B2	72.9	27.9	31.3	No	41.6	45	No
Warner Ave.	B5	72.9	27.9	30.5	No	42.4	45	No
,	S1	72.9	27.9	30.4	No	42.5	45	No
	S2	72.9	27.9	29.7	No	43.2	45	No
	A1	70.7	25.7	30.7	No	40.0	45	No
	A3	70.7	25.7	30.6	No	40.1	45	No
Bldg. A	B2	70.7	25.7	31.3	No	39.4	45	No
Red Hill Ave.	B5	70.7	25.7	30.5	No	40.2	45	No
Ave.	S1	70.7	25.7	30.4	No	40.3	45	No
	S2	70.7	25.7	29.7	No	41.0	45	No
	A1	68.6	23.6	30.7	No	37.9	45	No
	A3	68.6	23.6	30.6	No	38.0	45	No
Bldg. B	B2	68.6	23.6	31.3	No	37.3	45	No
Red Hill Ave.	B5	68.6	23.6	30.5	No	38.1	45	No
////	S1	68.6	23.6	30.4	No	38.2	45	No
	S2	68.6	23.6	29.7	No	38.9	45	No
	A1	72.1	27.1	30.7	No	41.4	45	No
	A3	72.1	27.1	30.6	No	41.5	45	No
Bldg. C	B2	72.1	27.1	31.3	No	40.8	45	No
Red Hill Ave.	B5	72.1	27.1	30.5	No	41.6	45	No
////	S1	72.1	27.1	30.4	No	41.7	45	No
	S2	72.1	27.1	29.7	No	42.4	45	No
	A1	72.9	27.9	30.7	No	42.2	45	No
	A3	72.9	27.9	30.6	No	42.3	45	No
Bldg. D	B2	72.9	27.9	31.3	No	41.6	45	No
Warner Ave.	B5	72.9	27.9	30.5	No	42.4	45	No
Ave.	S1	72.9	27.9	30.4	No	42.5	45	No
	S2	72.9	27.9	29.7	No	43.2	45	No

TABLE 8-6: THIRD-FLOOR INTERIOR NOISE IMPACTS (CNEL)

<sup>2</sup> Noise reduction required to satisfy the City of Santa Ana General Plan, Table 1, 45 dBA CNEL interior noise standard for residential uses.

<sup>3</sup> Minimum calculated interior noise reduction from all rooms for each unit plan as shown on Table 8-2.

<sup>4</sup> Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?

<sup>5</sup> Estimated interior noise level with minimum STC rating for all windows.



Receiver Location	Unit Plan	Noise Level at Façade <sup>1</sup>	Required Interior NR <sup>2</sup>	Minimum Calculated Interior NR <sup>3</sup>	Upgraded Windows <sup>4</sup>	Interior Noise Level⁵	Threshold	Threshold Exceeded?
	A1	72.6	27.6	30.7	No	41.9	45	No
	A3	72.6	27.6	30.6	No	42.0	45	No
Bldg. A	B2	72.6	27.6	31.3	No	41.3	45	No
Warner Ave.	B5	72.6	27.6	30.5	No	42.1	45	No
	S1	72.6	27.6	30.4	No	42.2	45	No
	S2	72.6	27.6	29.7	No	42.9	45	No
	A1	70.6	25.6	30.7	No	39.9	45	No
	A3	70.6	25.6	30.6	No	40.0	45	No
Bldg. A	B2	70.6	25.6	31.3	No	39.3	45	No
Red Hill Ave.	B5	70.6	25.6	30.5	No	40.1	45	No
Ανς.	S1	70.6	25.6	30.4	No	40.2	45	No
	S2	70.6	25.6	29.7	No	40.9	45	No
	A1	68.5	23.5	30.7	No	37.8	45	No
	A3	68.5	23.5	30.6	No	37.9	45	No
Bldg. B	B2	68.5	23.5	31.3	No	37.2	45	No
Red Hill Ave.	B5	68.5	23.5	30.5	No	38.0	45	No
Ανς.	S1	68.5	23.5	30.4	No	38.1	45	No
	S2	68.5	23.5	29.7	No	38.8	45	No
	A1	72.0	27.0	30.7	No	41.3	45	No
	A3	72.0	27.0	30.6	No	41.4	45	No
Bldg. C	B2	72.0	27.0	31.3	No	40.7	45	No
Red Hill Ave.	B5	72.0	27.0	30.5	No	41.5	45	No
Ανς.	S1	72.0	27.0	30.4	No	41.6	45	No
	S2	72.0	27.0	29.7	No	42.3	45	No
	A1	72.6	27.6	30.7	No	41.9	45	No
	A3	72.6	27.6	30.6	No	42.0	45	No
Bldg. D	B2	72.6	27.6	31.3	No	41.3	45	No
Warner	B5	72.6	27.6	30.5	No	42.1	45	No
Ave.	S1	72.6	27.6	30.4	No	42.2	45	No
	S2	72.6	27.6	29.7	No	42.9	45	No

TABLE 8-7: FOURTH TO SIXTH-FLOOR INTERIOR NOISE IMPACTS (CNEL)

<sup>2</sup> Noise reduction required to satisfy the City of Santa Ana General Plan, Table 1, 45 dBA CNEL interior noise standard for residential uses.

<sup>3</sup> Minimum calculated interior noise reduction from all rooms for each unit plan as shown on Table 8-2.

<sup>4</sup> Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?

<sup>5</sup> Estimated interior noise level with minimum STC rating for all windows.

# 9 **RECEIVER LOCATIONS**

To assess the potential for construction noise impacts, the following receiver locations, as shown on Exhibit 9-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 multifamily dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

Receiver locations are generally located in outdoor living areas (e.g., backyards) or areas of frequent use at a distance of 10 feet from any existing or proposed barriers or at the building façade, whichever is closer to the Project site, based on FHWA guidance, and consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2.

Due to the professional and administrative office land use designation and non-residential nature of the existing Project site, all the nearby receivers are considered as non-noise sensitive. Other sensitive land uses in the Project study area that are located at greater distances than the receivers listed below will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures.

- R1: Located about 220 feet northeast of the Project site, R1 represents Harvest Time Ministries north of Warner Avenue. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the U.S. Armed Forces Reserve Center on the north side of Warner Avenue at approximately 667 feet east of the Project site. A 24-hour noise measurement near this location, L2, is used to describe the existing ambient noise environment.
- R3: Location R3 represents existing offices for OnTrac and Brasstech northeast of Carnegie Avenue at approximately 85 feet from the Project site. A 24-hour noise measurement near this location, L5, is used to describe the existing ambient noise environment.
- R4: Location R4 represents existing offices for in Carnegie Square Business Park north of Carnegie Avenue at approximately 118 feet from the Project site. A 24-hour noise measurement near this location, L5, is used to describe the existing ambient noise environment.
- R5: Location R5 represents offices in Sirco Irvine Business Park at approximately 64 feet from the Project site. A 24-hour noise measurement near this location, L6, is used to describe the existing ambient noise environment.





### **EXHIBIT 9-A: RECEIVER LOCATIONS**



**LEGEND:** 

Receiver Locations

Distance from receiver to Project site boundary (in feet)



# **10 CONSTRUCTION IMPACTS**

This section analyzes potential impacts resulting from the construction activities associated with the development of the Project. Exhibit 10-A shows the construction activity boundaries in relation to the nearby sensitive receiver locations.

## **10.1** CONSTRUCTION NOISE LEVELS

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

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

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. The construction reference noise level measurements represent a list of typical construction activity noise levels. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to in excess of 80 dBA when measured at 50 feet. Hard site conditions are used in the construction noise analysis which result in noise levels that attenuate (or decrease) at a rate of 6 dBA for each doubling of distance from a point source (i.e. construction equipment). For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver and would be further reduced to 68 dBA at 200 feet from the source to the receiver. The construction stages used in this analysis are consistent with the data used to support the construction emissions in *The Bowery Air Quality Impact Analysis* prepared by Urban Crossroads, Inc. (31)

# **10.2** CONSTRUCTION REFERENCE NOISE LEVELS

To describe the Project construction noise levels, measurements were collected for similar activities at several construction sites. Table 10-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances, all construction noise level measurements presented on Table 10-1 have been adjusted to describe a common reference distance of 50 feet.



ID	Noise Source	Reference Distance From Source (Feet)	Reference Noise Levels @ Reference Distance (dBA L <sub>eq</sub> )	Reference Noise Levels @ 50 Feet (dBA L <sub>eq</sub> ) <sup>5</sup>
1	Truck Pass-Bys & Dozer Activity <sup>1</sup>	30'	63.6	59.2
2	Dozer Activity <sup>1</sup>	30'	68.6	64.2
3	Construction Vehicle Maintenance Activities <sup>2</sup>	30'	71.9	67.5
4	Foundation Trenching <sup>2</sup>	30'	72.6	68.2
5	Rough Grading Activities <sup>2</sup>	30'	77.9	73.5
6	Framing <sup>3</sup>	30'	66.7	62.3
7	Concrete Mixer Truck Movements <sup>4</sup>	50'	71.2	71.2
8	Concrete Paver Activities <sup>4</sup>	30'	70.0	65.6
9	Concrete Mixer Pour & Paving Activities <sup>4</sup>	30'	70.3	65.9
10	Concrete Mixer Backup Alarms & Air Brakes <sup>4</sup>	50'	71.6	71.6
11	Concrete Mixer Pour Activities <sup>4</sup>	50'	67.7	67.7

#### TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

<sup>1</sup>As measured by Urban Crossroads, Inc. on 10/14/15 at a business park construction site located at the northwest corner of Barranca Parkway and Alton Parkway in the City of Irvine.

<sup>2</sup> As measured by Urban Crossroads, Inc. on 10/20/15 at a construction site located in Rancho Mission Viejo.

<sup>3</sup> As measured by Urban Crossroads, Inc. on 10/20/15 at a residential construction site located in Rancho Mission Viejo.

<sup>4</sup> Reference noise level measurements were collected from a nighttime concrete pour at an industrial construction site, located at 27334 San Bernardino Avenue in the City of Redlands, between 1:00 a.m. to 2:00 a.m. on 7/1/15.

<sup>5</sup> Reference noise levels are calculated at 50 feet using a drop off rate of 6 dBA per doubling of distance (point source).





**EXHIBIT 10-A: CONSTRUCTION ACTIVITY AND RECEIVER LOCATIONS** 

Receiver Locations

- Distance from receiver to Project site boundary (in feet)

N



## **10.3** CONSTRUCTION NOISE ANALYSIS

Tables 10-2 to 10-6 show the Project construction stages and the reference construction noise levels used for each stage. Table 10-7 provides a summary of the noise levels from each stage of construction at each of the sensitive receiver locations. Based on the reference construction noise levels, the Project-related construction noise levels when the highest reference noise level is operating at the edge of primary construction activity nearest each sensitive receiver location will range from 51.0 to 71.4 dBA  $L_{eq}$  at the sensitive receiver locations, as shown on Table 10-7.

Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> )	
Truck Pass-Bys & Dozer Activity	59.2	
Dozer Activity	64.2	
Highest Reference Noise Level at 50 Feet (dBA $L_{eq}$ ):	64.2	

## TABLE 10-2: DEMOLITION ACTIVITY NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Calculated Noise Barrier Attenuation (dBA L <sub>eq</sub> )	Construction Noise Level (dBA L <sub>eq</sub> )
R1	220'	-12.9	0.0	51.3
R2	667'	-22.5	0.0	41.7
R3	85'	-4.6	0.0	59.6
R4	118'	-7.5	0.0	56.7
R5	64'	-2.1	0.0	62.1

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

<sup>2</sup> Distance from the nearest point of construction activity to the nearest receiver.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> )
Truck Pass-Bys & Dozer Activity	59.2
Dozer Activity	64.2
Rough Grading Activities	73.5
Highest Reference Noise Level at 50 Feet (dBA Leq):	73.5

## TABLE 10-3: GRADING ACTIVITY NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Calculated Noise Barrier Attenuation (dBA L <sub>eq</sub> )	Construction Noise Level (dBA L <sub>eq</sub> )
R1	220'	-12.9	0.0	60.6
R2	667'	-22.5	0.0	51.0
R3	85'	-4.6	0.0	68.9
R4	118'	-7.5	0.0	66.0
R5	64'	-2.1	0.0	71.4

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$  Distance from the nearest point of construction activity to the nearest receiver.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> )
Construction Vehicle Maintenance Activities	67.5
Foundation Trenching	68.2
Framing	62.3
Highest Reference Noise Level at 50 Feet (dBA $L_{eq}$ ):	68.2

#### TABLE 10-4: BUILDING CONSTRUCTION ACTIVITY NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Calculated Noise Barrier Attenuation (dBA L <sub>eq</sub> )	Construction Noise Level (dBA L <sub>eq</sub> )
R1	220'	-12.9	0.0	55.3
R2	667'	-22.5	0.0	45.7
R3	85'	-4.6	0.0	63.6
R4	118'	-7.5	0.0	60.7
R5	64'	-2.1	0.0	66.1

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$  Distance from the nearest point of construction activity to the nearest receiver.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> )
Construction Vehicle Maintenance Activities	67.5
Foundation Trenching	68.2
Framing	62.3
Highest Reference Noise Level at 50 Feet (dBA $L_{eq}$ ):	68.2

#### TABLE 10-5: ARCHITECTURAL COATING ACTIVITY NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Calculated Noise Barrier Attenuation (dBA L <sub>eq</sub> )	Construction Noise Level (dBA L <sub>eq</sub> )
R1	220'	-12.9	0.0	55.3
R2	667'	-22.5	0.0	45.7
R3	85'	-4.6	0.0	63.6
R4	118'	-7.5	0.0	60.7
R5	64'	-2.1	0.0	66.1

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$  Distance from the nearest point of construction activity to the nearest receiver.

Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> )
Concrete Mixer Truck Movements	71.2
Concrete Paver Activities	65.6
Concrete Mixer Pour & Paving Activities	65.9
Concrete Mixer Backup Alarms & Air Brakes	71.6
Concrete Mixer Pour Activities	67.7
Highest Reference Noise Level at 50 Feet (dBA L <sub>eq</sub> ):	71.6

### TABLE 10-6: PAVING ACTIVITY NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Calculated Noise Barrier Attenuation (dBA L <sub>eq</sub> )	Construction Noise Level (dBA L <sub>eq</sub> )
R1	220'	-12.9	0.0	58.7
R2	667'	-22.5	0.0	49.1
R3	85'	-4.6	0.0	67.0
R4	118'	-7.5	0.0	64.1
R5	64'	-2.1	0.0	69.5

<sup>1</sup> Reference construction noise level measurements taken by Urban Crossroads, Inc.

 $^{\rm 2}$  Distance from the nearest point of construction activity to the nearest receiver.

<sup>3</sup> Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.

## **10.4** CONSTRUCTION NOISE LEVEL COMPLIANCE

The construction noise analysis shows that the highest construction noise levels will occur when construction activities take place at the closest point from the edge of primary construction activity to each of the nearby receiver locations. As shown on Table 10-7, the unmitigated construction noise levels are expected to range from 51.0 to 71.4 dBA  $L_{eq}$  at the nearby receiver locations.



Receiver Location <sup>1</sup> R1 R2 R3	Construction Noise Levels by Stage (dBA L <sub>eq</sub> )											
	Demolition Grading		Building Construction	Architectural Coating	Paving	Highest Construction Noise Level <sup>2</sup>						
R1	51.3	60.6	55.3	55.3	58.7	60.6						
R2	41.7	51.0	45.7	45.7	49.1	51.0						
R3	59.6	68.9	63.6	63.6	67.0	68.9						
R4	56.7	66.0	60.7	60.7	64.1	66.0						
R5	62.1	71.4	66.1	66.1	69.5	71.4						

TABLE 10-7: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

<sup>1</sup> Construction activity and receiver locations are shown on Exhibit 10-A. <sup>2</sup> Estimated construction noise levels during peak operating conditions.

Table 10-8 summarizes daytime Project construction-source noise levels at potentially affected receivers. The Project-related short-term construction noise levels are expected to approach 74.8 dba L<sub>eq</sub> and would not exceed the 85 dba L<sub>eq</sub> daytime construction noise level threshold at nearby receiver locations. Therefore, based on the results of this analysis, all receiver locations (R1 to R5) will experience *less than significant* impacts due to daytime Project site construction noise levels, as shown on Table 10-8.

#### TABLE 10-8: CONSTRUCTION-SOURCE NOISE LEVEL COMPLIANCE

Receiver Location <sup>1</sup>	Land Use	Highest Unmitigated Construction Noise Levels (dBA Leq) <sup>2</sup>	Threshold (dBA L <sub>eq</sub> ) <sup>3</sup>	Threshold Exceeded? <sup>4</sup>
R1	Non-Residential	60.6	85	No
R2	Non-Residential	51.0	85	No
R3	Non-Residential	68.9	85	No
R4	Non-Residential	66.0	85	No
R5	Non-Residential	71.4	85	No

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

<sup>2</sup> Estimated highest construction noise levels, as shown on Table 10-7.

<sup>3</sup> Construction noise standard as shown on Table 4-2.

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

"n/a" = No construction noise level threshold is identified for the given use, however, construction noise levels are presented for informational purposes.



### 10.5 CONSTRUCTION-SOURCE NOISE LEVEL CONTRIBUTIONS

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 receiver locations when Project construction-source noise is added to the ambient daytime conditions are presented on Table 10-9.

Caltrans' May 2011 *Traffic Noise Analysis Protocol* identifies a 12 dBA Leq noise level increase as *substantial,* and therefore, a 12 dBA Leq temporary noise level increase threshold is used in this noise study to address CEQA Noise Guideline A. (4) While the Caltrans 12 dBA Leq threshold was not created specifically for construction noise, it is applied in the Noise Study as a reasonable threshold to assess temporary, substantial noise level increases during Project construction at all the nearby non-noise sensitive receiver locations. (4) No nighttime construction activity is permitted in the City of Santa Ana Municipal Code, and therefore, is not analyzed in this noise study.

The Project will contribute unmitigated, worst-case construction noise level increases ranging from 0.4 to 11.2 dBA Leq during the daytime hours at the closest sensitive receiver locations. Since the worst-case temporary noise level increase during Project construction satisfies the 12 dBA Leq significance threshold, the unmitigated construction noise level increases are considered *less than significant* temporary noise impacts.

Receiver Location <sup>1</sup>	Project Construction Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels⁴	Combined Project and Ambient <sup>5</sup>	Temporary Worst-Case Project Contribution <sup>6</sup>	Threshold Exceeded? <sup>7</sup>
R1	60.6	L1	62.9	64.9	2.0	No
R2	51.0	L2	61.0	61.4	0.4	No
R3	68.9	L5	58.0	69.2	11.2	No
R4	66.0	L5	58.0	66.6	8.6	No
R5	71.4	L6	63.7	72.0	8.3	No

 TABLE 10-9:
 UNMITIGATED CONSTRUCTION-RELATED TEMPORARY NOISE LEVEL INCREASES

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

<sup>2</sup> Peak unmitigated Project construction noise levels as shown on Table 10-8.

<sup>3</sup> Ambient 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 temporary noise level increase expected with the addition of the proposed Project activities.

<sup>7</sup> Based on the 12 dBA temporary increase significance criteria as defined in Section 4.



### **10.6 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. The proposed Project's construction activities most likely to cause vibration impacts are:

- Heavy Construction Equipment: Although all heavy mobile construction equipment has the potential of causing at least some perceptible vibration while operating close to buildings, the vibration is usually short-term and is not of sufficient magnitude to cause building damage.
- Trucks: Trucks hauling building materials to construction sites can be sources of vibration intrusion if the haul routes pass through residential neighborhoods on streets with bumps or potholes. Repairing the bumps and potholes generally eliminates the problem.

Ground-borne vibration levels resulting from construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA). Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include mobile equipment activities and pile driving, among others. Using the vibration source level of construction equipment provided on Table 6-6 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 10-10 presents the expected Project related vibration levels at distances ranging from 85 to 667 feet from construction activity.

Based on the reference vibration levels provided by the FTA, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec PPV at 25 feet. At distances ranging from 85 to 667 feet from the Project site, construction vibration velocity levels are expected to range from 0.001 to 0.014 in/sec PPV. Table 10-10 shows that the Project construction vibration levels will remain below the Caltrans building damage threshold of 0.3 in/sec PPV and vibration standard of 0.04 in/sec PPV for human annoyance at all receiver locations. The analysis shows that the Project-related construction vibration impacts will be *less than significant* at all receiver locations.



	Distance to		Receiver	Levels (in/	sec) PPV <sup>2</sup>		Thres (in/sec		Thres Exceed	
Receiver <sup>1</sup>	Const. Activity (Feet)	Small Bulldozer (< 80k lbs)	Jack- hammer	Loaded Trucks	Large Bulldozer (> 80k lbs)	Highest Vibration Level	Human Annoyance	Building Damage	Human Annoyance	Building Damage
R1	220'	0.000	0.001	0.003	0.003	0.003	0.04	0.3	No	No
R2	667'	0.000	0.000	0.001	0.001	0.001	0.04	0.3	No	No
R3	85'	0.000	0.006	0.012	0.014	0.014	0.04	0.3	No	No
R4	118'	0.000	0.003	0.007	0.009	0.009	0.04	0.3	No	No
R5	64'	0.001	0.009	0.019	0.022	0.022	0.04	0.3	No	No

TABLE 10-10: UNMITIGATED CONSTRUCTION EQUIPMENT 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 6-6.

<sup>3</sup> Does the peak vibration exceed the acceptable vibration thresholds?

"PPV" = Peak Particle Velocity



# **11 REFERENCES**

- 1. **State of California.** *California Environmental Quality Act, Appendix G & Amendments and Additions to the State CEQA Guidelines.* 2019.
- 2. **EPD Solutions, Inc.** *The Bowery Traffic Impact Analysis.* November 2019.
- 3. National Institute for Occupational Safety and Health. *Criteria for Recommended Standard: Occupational Noise Exposure*. June 1998.
- 4. **California Department of Transportation.** *Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects.* May 2011.
- 5. State of California. California Environmental Quality Act, Appendix G. 2016.
- 6. **California Department of Transportation Environmental Program.** *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
- 7. 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.
- 8. 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.
- 9. U.S. Department of Transportation, Federal Highway Administration. *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
- 10. 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.
- 11. California Department of Transportation. Technical Noise Supplement. November 2009.
- 12. Occupational Safety and Health Administration. Standard 29 CRF, Part 1910.
- 13. U.S. Department of Transportation, Federal Transit Administration. *Transit Noise and Vibration Impact Assessment*. September 2018.
- 14. Office of Planning and Research. State of California General Plan Guidelines. 2017.
- 15. State of California. 2019 California Green Building Standards Code. January 2020.
- 16. City of Santa Ana. General Plan Noise Element. January 2010.
- 17. —. Municipal Code, Section 18-314.
- 18. California Department of Transportation. *Transportation and Construction Vibration Guidance Manual.* September 2013.
- 19. Orange County Airport Land Use Commission. Land Use Plan for John Wayne Airport. April 2008.
- 20. County of Orange. General Aviation Operations Sec. 2-1-30.5. 2015.
- 21. California Court of Appeal. *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.
- 22. Federal Interagency Committee on Noise. Federal Agency Review of Selected Airport Noise Analysis Issues. August 1992.

- 23. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
- 24. U.S. Department of Transportation, Federal Transit Administration. *Transit Noise and Vibration Impact Assessment*. May 2006. FTA-VA-90-1003-06.
- 25. U.S. Department of Transportation, Federal Highway Administration. FHWA Highway Traffic Noise Prediction Model. December 1978. FHWA-RD-77-108.
- 26. 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.
- 27. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
- 28. 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*. June, 1995.
- 29. California Department of Transportation. Traffic Noise Analysis Protocol. May 2011.
- 30. Architects Orange. The Bowery Conceptual Unit Plans. September 30, 2019.
- 31. Urban Crossroads, Inc. *The Bowery Air Quality Impact Analysis.* November 2019.



# 12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed The Bowery 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) 336-5979.

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 260 E. Baker Street, Suite 200 Costa Mesa, CA 92626 (949) 336-5979 blawson@urbanxroads.com



# EDUCATION

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

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

## **PROFESSIONAL REGISTRATIONS**

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

## **PROFESSIONAL AFFILIATIONS**

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

#### **PROFESSIONAL CERTIFICATIONS**

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



This page intentionally left blank



APPENDIX 5.1:

**STUDY AREA PHOTOS** 



This page intentionally left blank





L1 Northwest 33, 42' 43.760000", 117, 50' 18.380000"



L1 Southeast 33, 42' 43.80000", 117, 50' 18.380000"



L1 Southwest 33, 42' 43.780000", 117, 50' 18.380000"



L2 Northeast 33, 42' 38.520000", 117, 50' 11.790000"



L2 Northwest 33, 42' 38.700000", 117, 50' 12.070000"



L2 Southeast 33, 42' 38.520000", 117, 50' 11.850000"



L2 Southwest 33, 42' 38.550000", 117, 50' 11.930000"



L3 Northeast 33, 42' 36.920000", 117, 50' 20.420000"



L3 Northwest 33, 42' 36.890000", 117, 50' 20.440000"



L3 Southeast 33, 42' 36.940000", 117, 50' 20.420000"



L3 Southwest 33, 42' 36.880000", 117, 50' 20.440000"



L4 Northeast 33, 42' 33.150000", 117, 50' 21.710000"



L4 Northwest 33, 42' 33.150000", 117, 50' 21.730000"



L4 Southeast 33, 42' 33.150000", 117, 50' 21.710000"



L4 Southwest 33, 42' 33.140000", 117, 50' 21.710000"



L5 Northeast 33, 42' 39.470000", 117, 50' 28.930000"



L5 Northwest 33, 42' 39.840000", 117, 50' 29.010000"



L5 Southeast 33, 42' 39.590000", 117, 50' 28.880000"



L5 Southwest 33, 42' 39.610000", 117, 50' 28.880000"



L6 Northeast 33, 42' 42.040000", 117, 50' 28.440000"



L6 Northwest 33, 42' 42.010000", 117, 50' 28.440000"



L6 Southeast 33, 42' 42.030000", 117, 50' 28.460000"



L6 Southwest 33, 42' 42.010000", 117, 50' 28.440000"

APPENDIX 5.2:

**NOISE LEVEL MEASUREMENT WORKSHEETS** 



This page intentionally left blank



Date:	Tuesday, M	ay 14, 2019			Location:	L1 - Located	l on Warner /	Avenue near	existing busi	iness	Meter:	Piccolo I			JN:	12282
Project:	The Bowery	v - Warner &	Redhill Mixe	ed Use Develo	pment	complex, ac		intrieast bour	idary of the l	Project site.					Analyst:	R. Saber
							Hourly L <sub>eq</sub> d	IBA Readings	(unadjusted)							
85.0	2						1									
85.0 ( <b>Vgp</b> ) 70.0 <b>b</b> 65.0 <b>u</b> 55.0 <b>b</b> 65.0 <b>u</b> 55.0	5															
<b>5</b> 70.0																
<b>–</b> 60.0	5					<u>∞</u> <del>4</del>		N N	m c	<mark>،</mark> .	- <mark>8.</mark> - 8.0		<u>∞i</u>		m	
<b>5</b> 55.0	) 	~ -		F.3 58.8		62.	<mark>. 62</mark>	<mark>- 62</mark>	63.3 63.3	<u>63.</u>	65.	<u> </u>	63.4	59.2	<b>58.1</b> 60.8	
<b>A</b> 55.0 <b>A</b> 50.0 <b>OH</b> 45.0 <b>H</b> 40.0	21.4	48.0 49.1	53.4	54.3				=							<u> </u>	50.5
35.0	5															
	0	1 2	3	4 5	6	7 8	9 1	.0 11	. 12 13	3 14	15 16	17	18 19	20	21 22	23
									eginning							
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	51.4 48.0	72.2 70.4	40.7 39.4	62.0 60.0	60.0 57.0	59.0 52.0	55.0 49.0	46.0 43.0	43.0 41.0	42.0 40.0	42.0 39.0	41.0 39.0	51.4 48.0	10.0 10.0	61.4 58.0
	2	48.0	70.4	40.2	58.0	56.0	52.0	49.0 50.0	43.0	41.0	40.0	41.0	41.0	48.0	10.0	59.1
Night	3	53.4	71.1	40.5	62.0	60.0	60.0	59.0	51.0	45.0	42.0	42.0	41.0	53.4	10.0	63.4
	4	54.3	76.1	40.8	65.0	61.0	57.0	56.0	53.0	49.0	44.0	43.0	41.0	54.3	10.0	64.3
	5	58.8	81.3	45.6	69.0	66.0	62.0	60.0	57.0	54.0	49.0	48.0	46.0	58.8	10.0	68.8
	6	61.4	82.5	45.6	71.0	69.0	66.0	65.0	60.0	57.0	51.0	49.0	48.0	61.4	10.0	71.4
	7 8	61.8 62.4	80.4 85.1	46.1 46.5	70.0 72.0	68.0 70.0	66.0 67.0	65.0 65.0	61.0 61.0	58.0 58.0	52.0	51.0 51.0	48.0 48.0	61.8 62.4	0.0 0.0	61.8 62.4
	° 9	62.4	83.5	40.5	72.0	70.0	67.0	66.0	62.0	58.0	53.0 52.0	51.0	48.0	62.4	0.0	62.4
	10	62.2	83.5	46.7	71.0	69.0	67.0	66.0	61.0	58.0	52.0	51.0	48.0	62.2	0.0	62.2
	11	63.2	83.0	48.4	73.0	70.0	68.0	66.0	62.0	58.0	53.0	52.0	50.0	63.2	0.0	63.2
Day	12	63.3	81.7	48.2	74.0	71.0	68.0	66.0	61.0	58.0	53.0	52.0	50.0	63.3	0.0	63.3
,	13	62.2	84.4	47.3	71.0	69.0	67.0	65.0	61.0	58.0	53.0	52.0	50.0	62.2	0.0	62.2
	14 15	63.5 63.8	82.5 81.2	49.8 51.1	72.0 74.0	70.0 71.0	68.0 68.0	67.0 67.0	63.0 63.0	59.0 60.0	54.0 55.0	52.0 54.0	51.0 52.0	63.5 63.8	0.0 0.0	63.5 63.8
	15	65.8	92.3	51.1	74.0	72.0	69.0	67.0	63.0	60.0	55.0	54.0 54.0	52.0	65.8	0.0	65.8
	17	65.4	91.2	50.6	74.0	72.0	68.0	67.0	63.0	60.0	55.0	54.0	52.0	65.4	0.0	65.4
	18	63.8	89.3	49.5	74.0	71.0	67.0	65.0	61.0	57.0	52.0	51.0	50.0	63.8	0.0	63.8
	19	60.4	77.1	48.3	70.0	68.0	66.0	64.0	59.0	56.0	51.0	50.0	49.0	60.4	5.0	65.4
Evening	20	59.2	79.5	46.3	69.0	67.0	64.0	63.0	58.0	54.0	49.0	48.0	47.0	59.2	5.0	64.2
	21 22	58.1 60.8	74.6 76.8	45.0 42.2	67.0 72.0	66.0 71.0	64.0 68.0	62.0 65.0	57.0 58.0	53.0 52.0	48.0 44.0	47.0 43.0	45.0 42.0	58.1 60.8	5.0	63.1 70.8
Night	22	50.5	73.2	42.2	60.0	58.0	55.0	53.0	48.0	44.0	44.0	43.0	42.0	50.5	10.0	60.5
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	61.8	80.4	46.1	70.0	68.0	66.0	65.0	61.0	57.0	52.0	51.0	48.0	24-Hour	Daytime	Nighttime
	Max	65.8	92.3	51.4	74.0	72.0	69.0	67.0	63.0	60.0	55.0	54.0	52.0			
Energy	Average Min	63.5 58.1	Ave 74.6	erage: 45.0	72.6 67.0	70.3	67.5 64.0	66.0 62.0	61.8 57.0	58.5 53.0	53.3 48.0	52.1 47.0	50.0 45.0	61.5	62.9	56.7
Evening	Max	60.4	74.6	45.0	70.0	68.0	66.0	64.0	59.0	55.0	48.0 51.0	47.0 50.0	49.0		Hour CNEL (a	
Energy	Average	59.3	1	erage:	68.7	67.0	64.7	63.0	58.0	54.3	49.3	48.3	47.0			
Night	Min	48.0	70.4	39.4	58.0	56.0	52.0	49.0	43.0	41.0	40.0	39.0	39.0	1	65.1	
	Max	61.4	82.5	45.6	72.0	71.0	68.0	65.0	60.0	57.0	51.0	49.0	48.0		02.1	
Energy	Average	56.7	Ave	erage:	64.3	62.0	59.0	56.9	51.4	47.7	44.0	43.1	42.2			



									urement S	-						
		lay 14, 2019	Rodhill Miv	ed Use Deve	Location:	•			ne Project site		Meter:	Piccolo I				12282 R. Saber
FT0JECL.	The Bower	y - wanner oo		eu ose Deve	lopment		11		(						Anuiyst.	N. Sabel
							Hourly L <sub>eq</sub> (	dBA Readings	(undajusted)							
85.0 80.0 75.0 70.0 65.0 <b>P</b> 65.0	2															
<b>a</b> 75.0																
ප_ 70.0 65.0																
00.0 <b>ت</b> 60.0					<b>→</b> ∞ →	<u>o</u> . <u>o</u> .	<u>0</u>	N N		tt		<u>∞</u>				
1 00.0 55.0 1 50.0 1 50.0 45.0 40.0	5 <b>8</b>	4 1	<b>∞</b>	1.9		61. 61.			- <mark>1</mark> 9		<mark>63.</mark>	<b>62</b> .	59.0	58.2	56.8 54.0	L.
<b>±</b> 40.0	5 — <b>1</b>	46.7	46.	5			+ $+$								2 2 Z	50.
35.0	0	1 2	3	4 5	6	7 8	9 :	10 11	12 1	3 14	15 16	17	18 19	20	21 22	23
	0		5		0	, 0	5		eginning	5 11	15 10	17	10 15			23
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	45.8	67.8	37.8	58.0	55.0	50.0	46.0	41.0	39.0	38.0	38.0	38.0	45.8	10.0	55.8
	1	46.4	68.7	35.0	59.0	57.0	51.0	47.0	39.0	38.0	37.0	37.0	35.0	46.4	10.0	56.4
Night	2	46.7 46.8	73.1 69.3	35.0 37.8	59.0 59.0	55.0 56.0	47.0 52.0	42.0 49.0	38.0 42.0	38.0 39.0	37.0 38.0	37.0 38.0	35.0 37.0	46.7 46.8	10.0 10.0	56.7 56.8
MBII	4	51.9	72.9	37.9	63.0	61.0	58.0	55.0	48.0	45.0	39.0	39.0	38.0	51.9	10.0	61.9
	5	56.7	79.4	42.3	67.0	66.0	63.0	61.0	54.0	49.0	45.0	44.0	43.0	56.7	10.0	66.7
	6	60.8	81.6	44.6	71.0	69.0	66.0	65.0	59.0	54.0	47.0	47.0	45.0	60.8	10.0	70.8
	7	61.9	76.6	45.6	71.0	70.0	67.0	66.0	62.0	58.0	50.0	48.0	47.0	61.9	0.0	61.9
	8	61.9 60.6	80.9 77.9	44.9 45.4	71.0 70.0	70.0 68.0	67.0 66.0	65.0 64.0	61.0 60.0	57.0 56.0	50.0 49.0	48.0 48.0	46.0 47.0	61.9 60.6	0.0 0.0	61.9 60.6
	10	59.7	81.3	44.0	69.0	67.0	65.0	63.0	59.0	54.0	48.0	47.0	46.0	59.7	0.0	59.7
	11	60.2	76.4	44.9	70.0	68.0	65.0	64.0	60.0	56.0	50.0	48.0	47.0	60.2	0.0	60.2
Day	12	61.3	84.8	45.9	71.0	68.0	65.0	64.0	59.0	55.0	49.0	48.0	47.0	61.3	0.0	61.3
.,	13	60.4	76.5	46.4	70.0	68.0	66.0	64.0	60.0	56.0	49.0	48.0	47.0	60.4	0.0	60.4
	14 15	61.7 62.1	82.6 82.9	47.4 49.2	72.0 72.0	70.0 70.0	67.0 67.0	65.0 65.0	60.0 61.0	57.0 58.0	50.0 52.0	49.0 51.0	48.0 50.0	61.7 62.1	0.0 0.0	61.7 62.1
	16	63.2	80.8	48.1	73.0	70.0	68.0	66.0	63.0	59.0	53.0	51.0	50.0	63.2	0.0	63.2
	17	62.8	86.0	49.3	72.0	70.0	67.0	66.0	62.0	59.0	54.0	52.0	50.0	62.8	0.0	62.8
	18	60.9	80.2	46.7	70.0	69.0	66.0	65.0	60.0	56.0	50.0	49.0	48.0	60.9	0.0	60.9
Evening	19	59.3	75.6	46.2	68.0	66.0	65.0	63.0	59.0	54.0	49.0	48.0	47.0	59.3	5.0	64.3
Evening	20 21	58.2 56.8	80.6 73.9	45.4 44.0	67.0 66.0	65.0 64.0	63.0 62.0	62.0 61.0	57.0 56.0	52.0 51.0	48.0 46.0	47.0 46.0	46.0 44.0	58.2 56.8	5.0 5.0	63.2 61.8
Nicht	21	54.0	76.1	44.0	65.0	62.0	60.0	58.0	50.0	46.0	40.0	40.0	44.0	54.0	10.0	64.0
Night	23	50.5	72.1	39.6	62.0	60.0	56.0	53.0	45.0	42.0	41.0	40.0	40.0	50.5	10.0	60.5
Timeframe	Hour			L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min Max	59.7 63.2	76.4 86.0	44.0 49.3	69.0 73.0	67.0 71.0	65.0 68.0	63.0 66.0	59.0 63.0	54.0 59.0	48.0 54.0	47.0 52.0	46.0 50.0	24-Hour	Daytime	Nighttime
Energy	Average	61.5		erage:	70.9	69.1	66.3	64.8	60.6	56.8	50.3	48.9	47.8		64.0	E 4 2
Evening	Min	56.8	73.9	44.0	66.0	64.0	62.0	61.0	56.0	51.0	46.0	46.0	44.0	59.5	61.0	54.2
Ŭ	Max	59.3	80.6	46.2	68.0	66.0	65.0	63.0	59.0	54.0	49.0	48.0	47.0	24-	Hour CNEL (d	IBA)
Energy	Average	58.2		erage:	67.0	65.0	63.3	62.0	57.3 38.0	52.3	47.7	47.0	45.7			
Night	Min Max	45.8 60.8	67.8 81.6	35.0 44.6	58.0 71.0	55.0 69.0	47.0 66.0	42.0 65.0	38.0 59.0	38.0 54.0	37.0 47.0	37.0 47.0	35.0 45.0		62.9	
Energy	Average	54.2		erage:	62.6	60.1	55.9	52.9	46.2	43.3	40.4	40.2	39.1			



	Tuesday, M		Redhill Mixe	ed Use Develo	Location:		l on Red Hill		the southea	,	Meter:	Piccolo I			JN: Analyst:	12282 R. Saber
i roject.					phiene		Hourly L <sub>eq</sub> (	dBA Readings	(unadjusted)						, maryst.	
9E (	n															
85.0 80.0 75.0 70.0 65.0 <b>P</b>	) ++					4		9 - 9		t 0						
<b>∧</b> 55.0 <b>1</b> 50.0 <b>0</b> 45.0 40.0	<b>417.6</b>	47.0	24.0	56.8	62.3	62.4 63.5		62.3		63.0	611.9	60.5	<mark>59.6</mark> 58.3	26.8	<mark>57.9</mark> 54.1	49.6
- 40.0		4 4														4
	0	1 2	3	4 5	6	7 8	9 1	10 11	12 1	3 14	15 16	17	18 19	20	21 22	23
Timefumue	11	,	,	,	L1%	L2%	L5%		eginning L25%	L50%	L90%	L95%	L99%		A -11	Adi I
Timeframe	Hour 0	L <sub>eq</sub> 47.6	69.2	L <sub>min</sub> 41.5	58.0	56.0	51.0	49.0	44.0	43.0	42.0	42.0	41.0	L <sub>eq</sub> 47.6	<b>Adj.</b> 10.0	<b>Adj. L</b> <sub>eq</sub> 57.6
	1	47.0	71.0	40.5	58.0	55.0	50.0	47.0	42.0	42.0	41.0	41.0	40.0	47.0	10.0	57.0
	2	48.4	73.6	40.6	58.0	55.0	50.0	47.0	43.0	42.0	41.0	41.0	40.0	48.4	10.0	58.4
Night	3	54.0	82.6	40.6	63.0	60.0	56.0	54.0	46.0	42.0	41.0	41.0	41.0	54.0	10.0	64.0
	4	56.8	78.7	41.2	68.0	65.0	61.0	59.0	54.0	48.0	42.0	42.0	41.0	56.8	10.0	66.8
	5 6	59.8 62.3	81.2 85.6	42.8 41.8	70.0 73.0	67.0 70.0	63.0 66.0	62.0 64.0	58.0 59.0	54.0 54.0	45.0 46.0	44.0 45.0	43.0 43.0	59.8 62.3	10.0 10.0	69.8 72.3
	7	62.4	83.7	44.2	72.0	69.0	67.0	65.0	62.0	58.0	49.0	47.0	45.0	62.4	0.0	62.4
	8	63.5	92.1	43.5	71.0	69.0	66.0	65.0	61.0	57.0	49.0	47.0	45.0	63.5	0.0	63.5
	9	63.6	88.2	42.9	74.0	71.0	68.0	66.0	61.0	56.0	47.0	45.0	44.0	63.6	0.0	63.6
	10	62.3	85.1	43.6	73.0	70.0	67.0	66.0	61.0	56.0	48.0	47.0	45.0	62.3	0.0	62.3
	11 12	63.6 61.2	88.4 84.7	45.0 44.7	73.0 70.0	70.0 68.0	67.0 66.0	66.0 65.0	61.0 60.0	56.0 56.0	50.0 49.0	48.0 47.0	46.0 46.0	63.6 61.2	0.0 0.0	63.6 61.2
Day	12	62.4	86.1	44.7	70.0	70.0	67.0	65.0	61.0	57.0	49.0 50.0	47.0	46.0	62.4	0.0	62.4
	14	63.0	89.6	46.4	72.0	70.0	66.0	65.0	60.0	56.0	50.0	49.0	48.0	63.0	0.0	63.0
	15	60.5	76.0	46.7	69.0	68.0	66.0	64.0	60.0	57.0	51.0	49.0	48.0	60.5	0.0	60.5
	16	61.9	85.9	46.9	70.0	68.0	65.0	64.0	60.0	57.0	51.0	50.0	49.0	61.9	0.0	61.9
	17	60.5	76.4	47.9	69.0	67.0	66.0	64.0	60.0	57.0	51.0	50.0	49.0	60.5	0.0	60.5
	18 19	59.6 58.3	85.4 78.4	46.0 45.7	68.0 67.0	67.0 66.0	64.0 64.0	62.0 62.0	58.0 57.0	54.0 52.0	49.0 48.0	48.0 47.0	47.0 46.0	59.6 58.3	0.0	59.6 63.3
Evening	20	56.8	72.2	45.0	67.0	66.0	62.0	61.0	55.0	51.0	48.0	46.0	45.0	56.8	5.0	61.8
<u> </u>	21	57.9	81.1	44.5	67.0	66.0	64.0	62.0	55.0	50.0	46.0	46.0	45.0	57.9	5.0	62.9
Night	22	54.1	78.0	42.3	64.0	62.0	58.0	56.0	50.2	46.0	43.0	43.0	42.0	54.1	10.0	64.1
, , , , , , , , , , , , , , , , , , ,	23	49.6	72.4	42.2	60.0 <b>L1%</b>	58.0	54.0 <b>L5%</b>	51.0 <b>L8%</b>	47.0 <b>L25%</b>	44.0 <b>L50%</b>	43.0 <b>L90%</b>	43.0 <b>L95%</b>	42.0 <b>L99%</b>	49.6	10.0 L <sub>eg</sub> (dBA)	59.6
Timeframe	Hour Min	L <sub>eq</sub> 59.6	L <sub>max</sub> 76.0	L <sub>min</sub> 42.9	<b>68.0</b>	67.0	64.0	<b>L8%</b> 62.0	58.0	54.0	47.0	45.0	44.0			
Day	Max	63.6	92.1	47.9	74.0	71.0	68.0	66.0	62.0	58.0	51.0	50.0	49.0	24-Hour	Daytime	Nighttime
Energy	Average	62.2		erage:	71.1	68.9	66.3	64.8	60.4	56.4	49.5	47.9	46.5	60.3	61.6	56.4
Evening	Min	56.8	72.2	44.5	67.0	66.0	62.0	61.0	55.0	50.0	46.0	46.0	45.0			
Energy	Max Average	58.3 57.7	81.1	45.7 erage:	67.0 67.0	66.0 66.0	64.0 63.3	62.0 61.7	57.0 55.7	52.0 51.0	48.0 47.0	47.0 46.3	46.0 45.3	24-	Hour CNEL (d	IBA)
	Min	47.0	69.2	40.5	58.0	55.0	50.0	47.0	42.0	42.0	47.0	46.3	45.3		<b>CA A</b>	
Night	Max	62.3	85.6	42.8	73.0	70.0	66.0	64.0	59.0	54.0	46.0	45.0	43.0		64.3	
Energy	Average	56.4	Ave	erage:	63.6	60.9	56.6	54.3	49.2	46.1	42.7	42.4	41.4			



Date:	Tuesday. M	1ay 14, 2019			Location	_ L4 - Located	l on Red Hill	evel Measu Avenue, acro	oss from sou	theastern	Meter:	Piccolo I			IN:	12282
	• •	• •	Redhill Mixe	ed Use Develo		<ul> <li>boundary o devleopment</li> </ul>		site, near in	progress Tus	stin Legacy	Wieter.					R. Saber
						devicopinei		dBA Readings	(unadjusted)							
85.0	)															
(Var p) 65.0 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 65.0 1 1 1 1 1 1 1 1 1 1 1 1 1																
60.0 <b>ٽر</b>	3					- <mark>0</mark> -		<mark></mark>		ŧ	9.0	<b>.</b>	9			
<b>A</b> 55.0 <b>A</b> 55.0 <b>O</b> 45.0 <b>O</b> 45.0 <b>O</b> 40.0	48.3	47.5 46.1	46.4	55.1	57.8	- <mark>.59</mark>	59.7	0 <mark> 6.</mark>	60.1	62. 62.	63.		60.0 58.7	<b>57.1</b>	56.8 54.0	50.9
▲ 40.0 35.0	) + 4 +	4 4	4												<u>0</u>	- ŭ -
	0	1 2	3	4 5	6	7 8	9 1	LO 11	12 1	3 14	15 16	17	18 19	20	21 22	23
								Hour Be								
Timeframe	Hour 0	L <sub>eq</sub>		L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub> 48.3	Adj.	Adj. L <sub>eq</sub>
	1	48.3 47.5	69.7 67.1	36.6 36.0	60.0 59.0	58.0 57.0	54.0 52.0	51.0 48.0	44.0 43.0	41.0 41.0	39.0 38.0	39.0 37.0	38.0 36.0	48.3	10.0 10.0	58.3 57.5
	2	46.1	67.5	36.0	58.0	55.0	49.0	47.0	42.0	40.0	37.0	36.0	36.0	46.1	10.0	56.1
Night	3	46.4	61.8	36.0	57.0	55.0	52.0	50.0	45.0	42.0	39.0	38.0	38.0	46.4	10.0	56.4
	4	55.1	83.0	38.9	64.0	61.0	58.0	57.0	51.0	47.0	43.0	42.0	39.0	55.1	10.0	65.1
	5	55.5	71.7 75.4	41.8	66.0	64.0 66.0	61.0 63.0	59.0 62.0	54.0 56.0	50.0 52.0	44.0	43.0 44.0	42.0 42.0	55.5	10.0	65.5
	7	57.8 59.9	75.4	40.7 43.5	68.0 69.0	67.0	65.0	64.0	60.0	55.0	45.0 48.0	44.0	42.0	57.8 59.9	10.0 0.0	67.8 59.9
	8	60.1	77.0	44.0	70.0	68.0	66.0	64.0	60.0	55.0	48.0	47.0	44.0	60.1	0.0	60.1
	9	59.7	75.4	40.8	68.0	67.0	65.0	64.0	60.0	55.0	47.0	45.0	43.0	59.7	0.0	59.7
	10	60.1	76.6	42.8	70.0	68.0	66.0	64.0	60.0	55.0	47.0	45.0	44.0	60.1	0.0	60.1
	11	61.4	80.3	44.5	70.0	69.0	67.0	65.0	61.0	56.0	49.0	47.0	45.0	61.4	0.0	61.4
Day	12 13	60.1 61.4	78.2 81.1	43.6 44.5	69.0 70.0	67.0 68.0	65.0 66.0	64.0 65.0	60.0 61.0	55.0 56.0	47.0 49.0	46.0 47.0	44.0 45.0	60.1 61.4	0.0 0.0	60.1 61.4
	15	62.7	83.5	44.5	70.0	69.0	67.0	66.0	62.0	58.0	49.0 50.0	47.0	45.0	62.7	0.0	62.7
	15	62.6	78.0	46.3	71.0	69.0	67.0	66.0	63.0	59.0	50.0	49.0	47.0	62.6	0.0	62.6
	16	63.0	77.7	45.7	71.0	69.0	68.0	67.0	64.0	60.0	50.0	49.0	47.0	63.0	0.0	63.0
	17	63.1	81.8	45.5	70.0	69.0	67.0	67.0	64.0	60.0	51.0	49.0	48.0	63.1	0.0	63.1
	18	60.6	77.0	44.9	69.0	68.0	66.0	65.0	61.0	56.0	47.0	46.0	45.0	60.6	0.0	60.6
Evening	19 20	58.7 57.1	76.7 76.0	43.6 43.4	67.0 67.0	66.0 65.0	64.0 63.0	63.0 61.0	58.0 57.0	53.0 52.0	46.9 47.0	46.0 46.0	45.0 44.0	58.7 57.1	5.0 5.0	63.7 62.1
2701118	20	56.8	78.3	41.9	66.0	65.0	63.0	61.0	56.0	50.0	46.0	45.0	44.0	56.8	5.0	61.8
Night	22	54.0	73.6	38.9	64.0	63.0	60.0	58.0	51.0	47.0	40.0	40.0	39.0	54.0	10.0	64.0
Ū	23	50.9	75.0	38.7	62.0	59.0	56.0	54.0	46.0	42.0	39.0	39.0	39.0	50.9	10.0	60.9
Timeframe	Hour Min	L <sub>eq</sub> 59.7	L <sub>max</sub> 74.6	L <sub>min</sub> 40.8	L1% 68.0	<b>L2%</b> 67.0	<b>L5%</b> 65.0	<i>L8%</i> 64.0	L25% 60.0	<i>L50%</i> 55.0	<i>L90%</i> 47.0	<b>L95%</b> 45.0	43.0		L <sub>eq</sub> (dBA)	
Day	Max	63.1	83.5	40.8	72.0	69.0	68.0	67.0	64.0	60.0	47.0 51.0	43.0 49.0	43.0	24-Hour	Daytime	Nighttime
Energy	Average	61.4		erage:	69.9	68.2	66.3	65.1	61.3	56.7	48.6	47.2	45.3	E0 2	60.0	E2 2
Evening	Min	56.8	76.0	41.9	66.0	65.0	63.0	61.0	56.0	50.0	46.0	45.0	44.0	59.3		
	Max	58.7	78.3	43.6	67.0	66.0	64.0	63.0	58.0	53.0	47.0	46.0	45.0	24-	Hour CNEL (d	dBA)
Energy	Average Min	57.6 46.1	61.8	erage: 36.0	66.7 57.0	65.3 55.0	63.3 49.0	61.7 47.0	57.0 42.0	51.7 40.0	46.6 37.0	45.7 36.0	44.3 36.0		~~ ~	
Night	Max	57.8	83.0	41.8	68.0	66.0	63.0	62.0	56.0	52.0	45.0	44.0	42.0		62.3	
Energy	Average	53.2		erage:	62.0	59.8	56.1	54.0	48.0	44.7	40.4	39.8	38.8	<u> </u>		



						24-Ho	ur Noise L	evel Meas	urement S	ummary						
Date:	Tuesday, N	lay 14, 2019			Location	:		ect site boun			Meter:	Piccolo I			JN:	12282
	-	•	Redhill Mixe	ed Use Develo		southweste		the Project s	site, near ligh	nt industrial						R. Saber
						area and ra	ilroad tracks	dBA Readings	(unadiusted)							
							riourry <sub>2 eq</sub>	abA neuumgs	(unuujusteu)							
85.0	2															
80.0 80.0 75.0 70.0 65.0 1 0.00	5 —															
<b>5</b> 70.0	2															
<b>–</b> 60.0																
<b>1</b> 50.0		5 2		5 1	-	8 6	<mark>58.7</mark>	59.6			59.1 57.4	<b>59.4</b>	56.8 58.3		58.4	0
<b>A</b> 55.0 <b>5</b> 5.0 <b>6</b> 45.0 <b>6</b> 45.0 40.0	<b>46.6</b>	45.	4	48.5 50.1	50.1	55.0		" <u>"</u>	2 <mark>6.</mark>	2 <u>- </u> 2	57	<b>_</b> _	- <mark></mark>	27	<b>58</b> 49.1	45.
35.0	) + +						+									
	0	1 2	3	4 5	6	7 8	9 :	10 11		.3 14	15 16	17	18 19	20	21 22	23
									eginning							
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	46.6	64.3	42.7	57.0	54.0	49.0	47.0	45.0	44.0	43.0	43.0	43.0 42.0	46.6	10.0	56.6
	1 2	45.2 44.5	62.7 60.5	42.1 42.1	53.0 49.0	49.0 48.0	45.0 46.0	44.0 45.0	44.0 44.0	43.0 43.0	43.0 42.0	42.0 42.0	42.0	45.2 44.5	10.0 10.0	55.2 54.5
Night	3	44.1	56.0	42.1	48.0	46.0	45.0	44.0	44.0	43.0	43.0	42.0	42.0	44.1	10.0	54.1
_	4	48.5	66.4	42.3	56.0	53.0	52.0	52.0	47.0	45.0	43.0	43.0	43.0	48.5	10.0	58.5
	5	50.1	65.3	43.7	59.0	58.0	55.0	54.0	48.0	46.0	45.0	44.0	44.0	50.1	10.0	60.1
	6	50.1	68.5	43.2	60.0	57.0	54.0	52.0	47.0	46.0	44.0	44.0	44.0	50.1	10.0	60.1
	7 8	56.8	73.3 72.9	45.3	71.0	69.0	60.0 61.0	56.0	49.0 52.0	47.0	46.0	46.0 45.0	45.0	56.8	0.0	56.8 55.9
	° 9	55.9 58.7	72.9	44.3 44.0	68.0 72.0	66.0 70.0	66.0	59.0 61.0	52.0	47.0 47.0	45.0 45.0	45.0 45.0	44.0 44.0	55.9 58.7	0.0 0.0	58.7
	10	59.6	85.3	45.2	72.0	70.0	65.0	60.0	51.0	48.0	46.0	46.0	45.0	59.6	0.0	59.6
	11	58.2	75.4	45.0	72.0	70.0	63.0	59.0	50.0	48.0	46.0	46.0	45.0	58.2	0.0	58.2
Day	12	56.7	75.7	44.6	71.0	69.0	58.0	55.0	48.0	47.0	45.0	45.0	45.0	56.7	0.0	56.7
, i	13	58.7	76.5	44.6	72.0	70.0	65.0	60.0	51.0	48.0	46.0	46.0	45.0	58.7	0.0	58.7
	14 15	57.0 59.1	77.4 77.5	45.8 46.5	71.0 72.0	68.0 70.0	61.0 65.0	57.0 62.0	50.0 52.0	48.0 49.0	47.0 47.0	47.0 47.0	46.0 47.0	57.0 59.1	0.0 0.0	57.0 59.1
	16	57.4	75.4	46.4	72.0	69.0	61.0	57.0	50.0	49.0	47.0	47.0	47.0	57.4	0.0	57.4
	17	59.4	75.5	46.4	72.0	71.0	66.0	62.0	53.0	49.0	48.0	47.0	47.0	59.4	0.0	59.4
	18	56.8	75.4	45.7	71.0	67.0	59.0	56.0	50.0	48.0	47.0	46.0	46.0	56.8	0.0	56.8
Evening	19	58.3	74.5	45.8	71.0	70.0	65.0	60.0	52.0	49.0	47.0	46.0	46.0	58.3	5.0	63.3
Evening	20 21	57.1 58.4	76.9 74.0	45.7 44.5	71.0 71.0	68.0 70.0	59.0 66.0	55.0 59.0	49.0 50.0	48.0 48.0	46.0 46.0	46.0 46.0	46.0 45.0	57.1 58.4	5.0 5.0	62.1 63.4
	22	49.1	74.0	43.1	59.0	53.0	47.0	46.0	45.0	44.0	40.0	43.0	43.0	49.1	10.0	59.1
Night	23	45.0	56.1	43.0	49.0	47.0	46.0	45.0	44.0	44.0	44.0	44.0	43.0	45.0	10.0	55.0
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min	55.9	72.9	44.0	68.0	66.0	58.0	55.0	48.0	47.0	45.0	45.0	44.0	24-Hour	Daytime	Nighttime
Energy	Max Average	59.6 58.0	85.3 Ave	46.5 erage:	72.0 71.3	71.0 69.1	66.0 62.5	62.0 58.7	53.0 50.6	49.0 47.9	48.0 46.3	47.0 46.1	47.0 45.5			
	Min	57.1	74.0	44.5	71.3	68.0	59.0	55.0	49.0	47.9	46.0	46.0	45.0	56.2	58.0	47.6
Evening	Max	58.4	76.9	45.8	71.0	70.0	66.0	60.0	52.0	49.0	47.0	46.0	46.0	24-	Hour CNEL (	dBA)
Energy	Average	58.0		erage:	71.0	69.3	63.3	58.0	50.3	48.3	46.3	46.0	45.7			
Night	Min	44.1	56.0	42.1	48.0	46.0	45.0	44.0	44.0	43.0	42.0	42.0	42.0		58.9	
	Max Average	50.1 47.6	71.0	43.7 erage:	60.0 54.4	58.0 51.7	55.0 48.8	54.0 47.7	48.0 45.3	46.0 44.2	45.0 43.4	44.0 43.0	44.0 42.9		55.5	
Lifergy	A Cluge	47.0	Ave	cruge.	54.4	51.7	40.0	47.7	45.5	44.2	43.4	43.0	42.9			



									urement Si	'						
	Tuesday, M				Location:	•	l northwest o iness comme	-	t site, adjace	nt to	Meter:	Piccolo I				12282
Project:	The Bowery	/ - warner &	Reaniii Iviix	ed Use Develo	pment	-									Analyst:	R. Saber
							Hourly L <sub>eq</sub> d	dBA Readings	(unadjusted)							
85.0	2															
80.0 80.0 75.0 70.0 65.0 60.0																
<b>5</b> 70.0																
<u>م</u> 60.0						ni —		wi 4i –	2:0	67.5	66.6	<u> </u>			u.	
<b>5</b> 50.0	) – m	1	- U	n oi	26.3	6 <mark>3.</mark>	<mark></mark>	<mark></mark>	62.0	° <b>┬─</b> °□	66		59.6 60.1	<b>58.8</b>	2	m
<b>A</b> 55.0 <b>A</b> 50.0 <b>OF</b> 45.0 40.0	20.3	49.7	49.	51.5	S	2						<b></b> _			52.5	50.3
35.0	) ++				-											+
	0	1 2	3	4 5	6	7 8	9 1	LO 11 Hour Be	12 13 eginning	3 14	15 16	17	18 19	20	21 22	23
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
Timejrume	0	50.3	56.2	47.7	52.0	52.0	51.0	51.0	50.0	50.0	49.0	49.0	48.0	50.3	10.0	60.3
	1	49.7	64.0	47.6	56.0	51.0	50.0	49.0	49.0	49.0	48.0	48.0	48.0	49.7	10.0	59.7
	2	49.1	54.7	47.2	50.0	50.0	49.0	49.0	49.0	49.0	48.0	48.0	47.0	49.1	10.0	59.1
Night	3	49.5	56.8	47.8	51.0	51.0	50.0	50.0	49.0	49.0	48.0	48.0	48.0	49.5	10.0	59.5
	4	51.5 51.9	62.1 57.9	48.7 49.2	53.0 54.0	53.0 53.0	53.0 53.0	52.0 53.0	52.0 52.0	51.0 51.0	49.0 50.0	49.0 50.0	49.0 49.0	51.5 51.9	10.0 10.0	61.5
	6	56.3	86.0	49.2	54.0 64.0	61.0	53.0	53.0	52.0	51.0	49.0	49.0	49.0	51.9	10.0	61.9 66.3
	7	63.5	84.5	49.2	73.0	71.0	70.0	70.0	56.0	52.0	50.0	50.0	49.0	63.5	0.0	63.5
	8	57.3	75.5	48.3	69.0	67.0	62.0	60.0	53.0	51.0	49.0	49.0	49.0	57.3	0.0	57.3
	9	63.4	78.8	50.5	75.0	74.0	70.0	67.0	58.0	54.0	52.0	51.0	50.0	63.4	0.0	63.4
	10 11	63.3 63.4	78.8 79.6	52.7 51.7	76.0 76.0	74.0 74.0	69.0 68.0	66.0 66.0	58.0 59.0	55.0 56.0	54.0 54.0	53.0 53.0	53.0 52.0	63.3 63.4	0.0 0.0	63.3 63.4
	11	62.0	80.7	51.5	76.0	74.0	65.0	62.0	57.0	54.0	53.0	52.0	52.0	62.0	0.0	62.0
Day	13	66.1	89.0	53.0	78.0	76.0	71.0	69.0	60.0	56.0	54.0	54.0	53.0	66.1	0.0	66.1
	14	67.5	93.0	54.1	77.0	74.0	69.0	67.0	60.0	57.0	55.0	55.0	54.0	67.5	0.0	67.5
	15	66.6	91.3	54.3	76.0	75.0	71.0	69.0	63.0	57.0	55.0	55.0	54.0	66.6	0.0	66.6
	16 17	65.0 63.2	87.8 77.6	53.6 53.5	76.0 75.0	73.0 74.0	68.0 69.0	67.0 67.0	61.0 59.0	56.0 57.0	55.0 55.0	54.0 54.0	54.0 54.0	65.0 63.2	0.0 0.0	65.0 63.2
	17	59.6	79.0	55.5	73.0	68.0	62.0	59.0	55.0	57.0	52.0	54.0	52.0	59.6	0.0	59.6
	19	60.1	75.4	50.8	72.0	71.0	66.0	63.0	55.0	53.0	52.0	51.0	51.0	60.1	5.0	65.1
Evening	20	58.8	76.1	49.9	72.0	69.0	64.0	60.0	53.0	52.0	51.0	50.0	50.0	58.8	5.0	63.8
	21	63.3	82.9	49.3	73.0	72.0	70.0	69.0	56.0	53.0	51.0	50.0	49.0	63.3	5.0	68.3
Night	22 23	52.5 50.3	72.3 61.4	48.7 48.3	63.0 52.0	58.0 51.0	52.0 51.0	51.0 51.0	50.0 50.0	50.0 50.0	49.0 49.0	49.0 49.0	49.0 48.0	52.5 50.3	10.0 10.0	62.5 60.3
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	20.0	L <sub>eq</sub> (dBA)	
Day	Min	57.3	75.5	48.3	69.0	67.0	62.0	59.0	53.0	51.0	49.0	49.0	49.0	24-Hour	Daytime	Nighttime
	Max	67.5	93.0	54.3	78.0	76.0	71.0	70.0	63.0	57.0	55.0	55.0	54.0			-
	Average Min	64.2 58.8	Av 75.4	erage: 49.3	75.0 72.0	72.8 69.0	67.8 64.0	65.8 60.0	58.3 53.0	54.9 52.0	53.2 51.0	52.7 50.0	52.2 49.0	61.8	63.7	51.9
Evening	Max	63.3	82.9	50.8	73.0	72.0	70.0	69.0	56.0	53.0	52.0	51.0	51.0	24-	Hour CNEL (d	BA)
Energy		61.2	Av	erage:	72.3	70.7	66.7	64.0	54.7	52.7	51.3	50.3	50.0			
Night	Min Max	49.1 56.3	54.7 86.0	47.2 49.2	50.0 64.0	50.0 61.0	49.0 58.0	49.0 57.0	49.0 53.0	49.0 51.0	48.0 50.0	48.0 50.0	47.0 49.0		63.8	
Energy		56.3		erage:	55.0	53.3	58.0	57.0	53.0	51.0	48.8	48.8	49.0	1		



APPENDIX 7.1:

**OFF-SITE TRAFFIC NOISE LEVEL CONTOURS** 



This page intentionally left blank



Site Data Autos: 77.5% 12.9%	ght Daily 9.6% 97.42% 0.3% 1.84% 0.8% 0.74%
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt): 20,530 vehicles         Autos: 15           Peak Hour Percentage: 10%         Medium Trucks (2 Autes): 15           Peak Hour Volume: 2,053 vehicles         Heavy Trucks (3+ Autes): 15           Vehicle Speed: 45 mph         Vehicle Mix           Vehicle Type         Day           Evening Nit         Autos: 77.5% 12.9% 5	9.6% 97.42% 0.3% 1.84%
Average Daily Traffic (Adt): 20,530 vehicles     Autos: 15       Peak Hour Percentage:     10%       Peak Hour Volume:     2,053 vehicles       Vehicle Speed:     45 mph       Near/Far Lane Distance:     88 feet       Site Data     Autos: 77.5%	9.6% 97.42% 0.3% 1.84%
Peak Hour Percentage:     10%     Medium Trucks (2 Akles):     15       Peak Hour Volume:     2,053 vehicles     Heavy Trucks (3+ Akles):     15       Vehicle Speed:     45 mph     Vehicle Mix       Near/Far Lane Distance:     88 feet     Vehicle Type     Day       Site Data     Autos:     77.5%     12.9%	9.6% 97.42% 0.3% 1.84%
Venicle Mix         Venicle Mix           Site Data         88 feet	9.6% 97.42% 0.3% 1.84%
Near/Far Lane Distance:         88 feet         VehicleType         Day         Evening         Nit           Site Data         Autos:         77.5%         12.9%         5	9.6% 97.42% 0.3% 1.84%
Site Data Autos: 77.5% 12.9%	9.6% 97.42% 0.3% 1.84%
Barrier Height: 0.0 feet	
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 86.5% 2.7% 10	0.8% 0.74%
Centerline Dist. to Barrier: 60.0 feet Noise Source Elevations (in feet)	
Centerline Dist. to Observer: 60.0 feet Autos: 2.000	
Barrier Distance to Observer: 0.0 feet Medium Trucks: 4.000	
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.006 Grade Adjustr	ment: 0.0
Pad Elevation: 0.0 feet	
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)	
Road Grade: 0.0% Autos: 40.902	
Left View: -90.0 degrees Medium Trucks: 40.804	
Right View: 90.0 degrees Heavy Trucks: 40.903	
FHWA Noise Model Calculations	-
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten	Berm Atten
Autos: 68.46 1.17 1.20 -1.20 -4.85 0.000	0.000
Medium Trucks: 79.45 -16.07 1.22 -1.20 -5.01 0.000	0.000
Heavy Trucks: 84.25 -20.02 1.20 -1.20 -5.34 0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)	
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn	CNEL
Autos: 69.6 67.7 66.0 59.9 68.5	69.1
Medium Trucks: 63.4 61.9 55.5 54.0 62.5	62.7
Heavy Trucks: 64.2 62.8 53.8 55.0 63.4	63.5
Vehicle Noise: 71.5 69.7 66.6 61.9 70.4	70.9
Centerline Distance to Noise Contour (in feet)	55 JDA
70 dBA 65 dBA 60 dBA	55 dBA
	643
CNEL: 69 149 320	689

0		A-RD-77-108									_
Scenario: Exis Road Name: Nev							Name: Th umber: 12		very		
Road Name: Nev Road Segment: n/o					J	ואו מט	uniber: 12	282			
· ·											
SITE SPECI Highway Data	FIC IN	PUT DATA			ite Conditi		OISE MO			5	
				31	le conditi	ons		· · ·	,		
Average Daily Traffic	· · ·		3			_		itos:	15		
Peak Hour Percen		10%					icks (2 Ax		15		
Peak Hour Vol		1,055 vehicles	3		Heavy	Truc	ks (3+ Ax	es):	15		
Vehicle Sp		40 mph		Ve	ehicle Mix						
Near/Far Lane Dist	ance:	88 feet			Vehicle	Туре	D	ay E	evning	Night	Daily
Site Data						A	utos: 7	7.5%	12.9%	9.6%	97.429
Barrier He	eiaht.	0.0 feet			Mediu	m Tr	ucks: 84	1.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-B		0.0			Hea	vy Tr	ucks: 80	6.5%	2.7%	10.8%	0.749
Centerline Dist. to Ba		60.0 feet			- / 0			() K	4		
Centerline Dist. to Obse		60.0 feet		N	oise Sour				t)		
Barrier Distance to Obse		0.0 feet				Autos					
Observer Height (Above		5.0 feet			Medium T			-			
Pad Elev	,	0.0 feet			Heavy T	rucks	8: 8.00	6 G	Grade Adj	ustment	: 0.0
Road Elev		0.0 feet		Lá	ane Equiv	alent	Distance	(in fe	et)		
Road G	irade:	0.0%				Autos	s: 40.90	2	,		
Left	View:	-90.0 degree	24		Medium T	rucks	: 40.80	4			
Right		90.0 degree			Heavy T	rucks					
, i i i i i i i i i i i i i i i i i i i		•									
FHWA Noise Model Calc											
VehicleType REI		Traffic Flow	Dis	stance	Finite Ro	_	Fresnel		arrier Atte		rm Atten
Autos:	66.51	-1.21		1.20		.20		.85	0.0		0.00
Medium Trucks:	77.72	-18.45		1.22		.20		.01	0.0		0.00
Heavy Trucks:	82.99	-22.40		1.20	-1	.20	-5	.34	0.0	00	0.00
Unmitigated Noise Level	ls (witho	ut Topo and	barri	er attenu	ation)						
1	eak Hour			Leq Eve	0	Leq I	Night	L	.dn	-	NEL
Autos:	65.3	-	63.4		61.6		55.6		64.2		64
Medium Trucks:	59.3	-	57.8		51.4		49.9		58.3		58.
Heavy Trucks:	60.6	6	59.2		50.1		51.4		59.7	·	59.
Vehicle Noise:	67.3	3	65.6		62.3		57.8		66.3	3	66.
Centerline Distance to N	oise Co	ntour (in feet,	)								
				70 dE	BA	65 0	:/BA	60	dBA	55	i dBA
			Ldn:	34		7	3	1	58		340
			Lun.	04			0				

FHWA-RD-77-108 F	HIGHWAY	NOISE PI	REDICTION	IODEL			
Scenario: Existing Road Name: Redhill Ave. Road Segment: n/o Walnut Ave.			Project Nam Job Numbe		owery		
SITE SPECIFIC INPUT DATA					L INPUTS	S	
Highway Data		Site Cor	nditions (Har	d = 10, So	oft = 15)		
Average Daily Traffic (Adt): 23,920 vehicles				Autos:	15		
Peak Hour Percentage: 10%		Me	dium Trucks (	2 Axles):	15		
Peak Hour Volume: 2,392 vehicles		He	avy Trucks (3	+ Axles):	15		
Vehicle Speed: 40 mph		Vehicle	Mix				
Near/Far Lane Distance: 88 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data			Autos	77.5%	12.9%	9.6%	97.42
Barrier Height: 0.0 feet		М	edium Trucks	84.8%	4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Trucks	86.5%	2.7%	10.8%	0.74
Centerline Dist. to Barrier: 60.0 feet		Noise S	ource Elevati	ons (in fe	eet)		
Centerline Dist. to Observer: 60.0 feet			Autos:	2.000	,		
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet		Hear	vy Trucks:	8.006	Grade Adj	ustment	0.0
Pad Elevation: 0.0 feet		-					
Road Elevation: 0.0 feet		Lane Eq	uivalent Dist		teet)		
Road Grade: 0.0%				40.902			
Left View: -90.0 degree: Right View: 90.0 degree:				10.804 10.903			
FHWA Noise Model Calculations							
VehicleType REMEL Traffic Flow	Distance	e Finite	Road Fr	esnel	Barrier Atte	en Ber	m Atter
Autos: 66.51 2.35	1	.20	-1.20	-4.85	0.0	000	0.00
Medium Trucks: 77.72 -14.89	1	.22	-1.20	-5.01	0.0	000	0.00
Heavy Trucks: 82.99 -18.85	1	1.20	-1.20	-5.34	0.0	000	0.00
Unmitigated Noise Levels (without Topo and L			I				
VehicleType Leq Peak Hour Leq Day		Evening	Leq Night		Ldn		VEL
	7.0	65.2	-	9.1	67.8		68
	1.3	55.0		3.4	61.9		62
	2.7	53.7		4.9	63.3		63
	9.1	65.9	6	1.3	69.9	)	70
		'0 dBA	65 dBA	6	0 dBA	55	dBA
Centerline Distance to Noise Contour (in feet)							
					272	6	96
-	.dn: EL:	59 63	126 135		272 291	-	86 28

	FHW	A-RD-77-108	HIGHW	AY N	OISE PF	REDICT	ION MO	DEL			
Road Nam	io: Existing e: Redhill Ave. nt: s/o Walnut /						Name: lumber:				
	SPECIFIC IN	PUT DATA				N	IOISE N	/IODE	L INPUT	s	
Highway Data				5	Site Con	ditions	(Hard =	10, Se	oft = 15)		
Average Daily	Traffic (Adt): 2	4,920 vehicles	6					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	ucks (2 A	(xles):	15		
Peak H	lour Volume:	2,492 vehicles	\$		He	avy Truc	cks (3+ A	(xles):	15		
Ve	hicle Speed:	40 mph			Vehicle I	Mix					
Near/Far La	ne Distance:	88 feet		H		icleType		Day	Evening	Night	Daily
Site Data					VCIII			77.5%	0	9.6%	
		0.0.6			Me	edium T		84.8%		10.3%	
	rrier Height:	0.0 feet				leavy T		86.5%		10.8%	
Barrier Type (0-W Centerline Dis						,					
Centerline Dist.		60.0 feet 60.0 feet		1	Voise So	ource E	levation	s (in f	eet)		
Barrier Distance		0.0 feet				Auto	s: 2.	000			
Observer Height (		5.0 feet			Mediur	n Truck	s: 4.	000			
	ad Flevation:	0.0 feet			Heav	y Truck	s: 8.	006	Grade Ad	justment	: 0.0
	ad Elevation: ad Elevation:	0.0 feet			ane Eq	uivalen	t Distan	e (in	feet)		
	Road Grade:	0.0%		F	Lano Eq.	Auto					
	Left View:	-90.0 degree			Modiu	n Truck					
	Right View:	90.0 degree				v Truck					
	rugin view.	Solo degree	.5		mour	y maon	0. 10.				
FHWA Noise Mod	el Calculations	:									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresr	el	Barrier Att	en Be	rm Atten
Autos:	66.51	2.53		1.20	)	-1.20		-4.85	0.0	000	0.000
Medium Trucks:	77.72	-14.71		1.22	2	-1.20		-5.01	0.0	000	0.000
Heavy Trucks:	82.99	-18.67		1.20	)	-1.20		-5.34	0.0	000	0.000
Unmitigated Nois	e Levels (witho	out Topo and	barrier	atten	uation)						
VehicleType	Leg Peak Hour				ening	Leq	Night		Ldn	C	NEL
Autos:	69.	0	57.1		65.4		59.3	1	67.9	9	68.6
Medium Trucks:	63.	0	61.5		55.2		53.6	;	62.1	1	62.3
Heavy Trucks:	64.	3 1	52.9		53.9		55.1		63.5	5	63.6
Vehicle Noise:	71.	1	69.3		66.0		61.5	;	70.0	0	70.5
Centerline Distan	ce to Noise Co	ntour (in feet,	)								
				70 c	IBA	65	dBA	6	60 dBA	55	i dBA
			Ldn:	60	0	1	30		280	6	503
		CI	IEL:	65	5	1	39		300	6	645

Friday, November 15, 2019

Friday, November 15, 2019

Friday, November 15, 2019

91

	FHW	/A-RD-77-108	HIGH	WAY N	OISE PF	REDICTIO	ON MODE	L	
	<ul> <li>b: Existing</li> <li>c: Redhill Ave.</li> <li>c: n/o Valcenci</li> </ul>						Vame: Th Imber: 12		
SITE S	SPECIFIC IN	PUT DATA				N	OISE MO	DEL INPUT	s
Highway Data				5	Site Con	ditions (	'Hard = 10	, Soft = 15)	
Average Daily T Peak Hour F Peak Ho	Percentage:	3,880 vehicle 10% 2.388 vehicle					Au cks (2 Axle ks (3+ Axle	,	
	icle Speed:	45 mph	3	_		-	10 101 7 844		
Near/Far Lan	· · · · / · · · ·	88 feet		١	/ehicle l				
Neal/Fai Lan	e Distance.	00 1661			Veh	icleType	Da		Night Daily
Site Data						A	utos: 77	.5% 12.9%	9.6% 97.42
Bar	rier Heiaht:	0.0 feet			Me	edium Tri	ucks: 84	.8% 4.9%	10.3% 1.849
Barrier Type (0-Wa	. ,	0.0			ŀ	leavy Tri	ucks: 86	.5% 2.7%	10.8% 0.74
Centerline Dis		60.0 feet		٨	loise So	ource Ele	vations (	in feet)	
Centerline Dist. to		60.0 feet				Autos	: 2.000	)	
Barrier Distance to	o Observer:	0.0 feet			Mediu	m Trucks	4.000	)	
Observer Height (A	,	5.0 feet			Heav	y Trucks	: 8.006	Grade Ad	justment: 0.0
	d Elevation:	0.0 feet					Distance	(In for a f)	
	d Elevation:	0.0 feet		1	ane Eq		Distance	. ,	
h h	Road Grade:	0.0%				Autos		-	
	Left View: Right View:	-90.0 degre 90.0 degre				m Trucks ry Trucks			
FHWA Noise Mode	Calculations	1							
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier Att	ten Berm Atter
Autos:	68.46	1.83		1.20	)	-1.20	-4.	85 0.0	000 0.00
Medium Trucks:	79.45	-15.41		1.22	2	-1.20	-5.	01 0.0	000 0.00
Heavy Trucks:	84.25	-19.36		1.20	)	-1.20	-5.	34 0.0	0.00
Unmitigated Noise	Levels (witho	out Topo and							
VehicleType	Leq Peak Hou	r Leq Day	/	Leq Ev	ening	Leq I	light	Ldn	CNEL
Autos:	70.	-	68.4		66.6		60.6	69.3	
Medium Trucks:	64.	-	62.6		56.2		54.6	63.	
Heavy Trucks:	64.		63.5		54.4		55.7	64.0	
Vehicle Noise:	72.	-	70.4		67.2		62.6	71.	1 71
Centerline Distanc	e to Noise Co	ntour (in feet	)	70 -	04	05.	04	co -/D4	FF -104
			1 day	70 d		65 0		60 dBA	55 dBA
			Ldn: NFL:	71		15	-	330	711
		Ci	NEL:	76	Ċ,	16	4	354	762

	FHW	/A-RD-77-108	HIGH	IWAY NC	DISE PR	EDICTI	ON MOE	EL			
Scenari	o: Existing					Project	Name: 1	he Bo	owery		
Road Nam	e: Redhill Ave					Job N	umber: 1	2282	-		
Road Segmer	nt: s/o Valcenc	ia Ave.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	7,350 vehicles	s				A	Autos:	15		
Peak Hour	Percentage:	10%			Med	dium Tru	icks (2 A	xles):	15		
Peak H	our Volume:	2,735 vehicles	s		Hea	avy Truc	ks (3+ A	xles):	15		
Vel	hicle Speed:	50 mph		V	ehicle N	/iv					
Near/Far Lar	ne Distance:	88 feet				cleType		Day	Evening	Night	Daily
Site Data					venn			77.5%	0	9.6%	
					140	dium Ti		34.8%		9.0%	1.849
	rier Height:	0.0 feet				leavy Ti		34.8% 36.5%		10.3%	
Barrier Type (0-W		0.0			h	leavy II	UCKS: 0	50.5%	2.1%	10.8%	0.745
Centerline Dis		60.0 feet		N	oise So	urce El	evations	; (in fe	eet)		
Centerline Dist.		60.0 feet				Auto	s: 2.0	00			
Barrier Distance		0.0 feet			Mediun	n Truck	s: 4.0	00			
Observer Height (J	,	5.0 feet			Heav	y Truck	s: 8.0	06	Grade Ad	ustment.	0.0
	d Elevation:	0.0 feet				·					
	d Elevation:	0.0 feet		L	ane Equ		Distanc		'eet)		
ŀ	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree	es			n Truck					
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.9	03			
FHWA Noise Mode	el Calculation:			1							
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite I	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	70.20	1.96		1.20		-1.20		4.85	0.0	000	0.00
Medium Trucks:	81.00	-15.28		1.22		-1.20		5.01	0.0	000	0.00
Heavy Trucks:	85.38	-19.23		1.20		-1.20		5.34	0.0	000	0.00
Unmitigated Noise		<u> </u>									
,1	Leq Peak Hou			Leq Eve	·	Leq	Night		Ldn		NEL
Autos:	72.		70.3		68.5		62.5		71.1		71.
Medium Trucks:	65.		64.2		57.9		56.3		64.8		65.
Heavy Trucks:	66.		64.7		55.7		56.9		65.3		65.
Vehicle Noise:	73.	-	72.1		69.1		64.3		72.8	3	73
Centerline Distand	ce to Noise Co	ntour (in feet)	)								
			L	70 dł			dBA	6	0 dBA		dBA
			Ldn:	93		2	00		430	9	27
			VFI :	100			15		462		96

Sconari	p: Existing				Project	Vame: The	Bowery	
	e: Redhill Ave.					mber: 1228		
	t: s/o Warner /	Ave.			000140	111001. 1220	2	
Ŷ	SPECIFIC INF			1			EL INPUTS	
Highway Data	SPECIFIC IN	OTDATA		Site Cor		Hard = 10, 3		•
Average Daily	Traffic (Adt): 3	040 vehicles			,	Auto	,	
Peak Hour I	. ,	10%		Me	dium Tru	cks (2 Axles		
		3.304 vehicles				ks (3+ Axles	,	
	icle Speed:	50 mph					,,	
Near/Far Lar		88 feet		Vehicle			1= . 1	
	o Biotanoo.	00 1000		Veh	icleType	Day	5	Night Daily
Site Data				4		utos: 77.5		9.6% 97.429
Bar	rier Height:	0.0 feet			edium Tri			10.3% 1.849
Barrier Type (0-Wa		0.0			Heavy Tri	ucks: 86.5	% 2.7%	10.8% 0.749
Centerline Dis		60.0 feet		Noise S	ource Ele	evations (in	feet)	
Centerline Dist. t		60.0 feet			Autos	: 2.000	-	
Barrier Distance t		0.0 feet		Mediu	m Trucks	: 4.000		
Observer Height (/	,	5.0 feet		Hear	y Trucks	: 8.006	Grade Adjı	istment: 0.0
	d Elevation:	0.0 feet						
	d Elevation:	0.0 feet		Lane Eq		Distance (in	n reet)	
F	Road Grade:	0.0%			Autos m Trucks			
	Left View:	-90.0 degrees						
	Right View:	90.0 degrees		nea	/y Trucks	. 40.903		
FHWA Noise Mode	Calculations			1				
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	n Berm Atten
Autos:	70.20	2.78	1	.20	-1.20	-4.8	5 0.0	0.00 0.00
Medium Trucks:	81.00	-14.46	1	.22	-1.20	-5.0	1 0.0	0.00
Heavy Trucks:	85.38	-18.41	1	.20	-1.20	-5.3	4 0.0	00.00
Unmitigated Noise	Levels (witho	ut Topo and ba	arrier att	enuation)				
VehicleType	Leq Peak Hour	Leq Day	Leq	Evening	Leq I	light	Ldn	CNEL
Autos:	73.0	) 71	1.1	69.3		63.3	71.9	72.
Medium Trucks:	66.6	65	5.1	58.7		57.2	65.6	65.
Heavy Trucks:	67.0		5.5	56.5		57.8	66.1	66.
	74.7	72	2.9	69.9		65.1	73.7	74.
Vehicle Noise:		atour (in foot)						
	e to Noise Col	nour (mileer)					60 dBA	55 dBA
Vehicle Noise: Centerline Distanc	e to Noise Col	nour (in reet)	7	0 dBA	65 c	IBA	60 aBA	55 dBA
	e to Noise Col		dn:	0 dBA 105	65 c		488	1,051

	FHW	A-RD-77-108 HIC	GHWAY	NOISE PF	REDICTI		EL			
Road Nam	io: Existing e: Redhill Ave. nt: n/o Carnegie	e Ave.				Name: 1 lumber: 1		owery		
	SPECIFIC IN	PUT DATA			N	IOISE N	IODE	L INPUT	s	
Highway Data				Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 3	2,770 vehicles					Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Tru	ucks (2 A	xles):	15		
Peak H	our Volume:	3,277 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		Vehicle	Mix					
Near/Far Lai	ne Distance:	88 feet			icleType		Day	Evening	Night	Daily
Site Data							77.5%	0	9.6%	
Pa	rier Heiaht:	0.0 feet		M	edium Ti	rucks:	34.8%		10.3%	
Barrier Type (0-W		0.0		ŀ	Heavy Ti	rucks:	36.5%	2.7%	10.8%	0.74%
Centerline Dis		60.0 feet								
Centerline Dist.		60.0 feet		Noise So				eet)		
Barrier Distance	to Observer:	0.0 feet			Auto					
Observer Height (	Above Pad):	5.0 feet			m Truck			Crada Ad	iuotmon	
Pa	d Elevation:	0.0 feet		Heav	ry Truck	s: 8.0	06	Grade Ad	usunen	1. 0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalen	t Distand	e (in i	feet)		
1	Road Grade:	0.0%			Auto	s: 40.9	02			
	Left View:	-90.0 degrees		Mediu	m Truck	s: 40.8	04			
	Right View:	90.0 degrees		Heav	y Truck	s: 40.9	03			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	70.20	2.75	1.1	20	-1.20		4.85	0.0	000	0.000
Medium Trucks:	81.00	-14.49	1.1	22	-1.20		5.01	0.0	000	0.000
Heavy Trucks:	85.38	-18.45	1.3	20	-1.20		5.34	0.0	000	0.000
Unmitigated Noise			rier atte	nuation)						
VehicleType	Leq Peak Hour			Evening	Leq	Night		Ldn		NEL
Autos:	73.0			69.3		63.2		71.9		72.5
Medium Trucks:	66.		-	58.7		57.1		65.6		65.8
Heavy Trucks:	66.9			56.5		57.7		66.1		66.2
Vehicle Noise:	74.3	7 72.9	9	69.9		65.1		73.6	6	74.1
Centerline Distant	ce to Noise Co	ntour (in feet)								
				dBA		dBA	6	60 dBA		5 dBA
		Ldr		105	-	25		485		,046
		CNEL	.: 1	12	24	42		521	1	,123

Friday, November 15, 2019

Friday, November 15, 2019

	FH\	WA-RD-77-108	HIGHV	NAY NO	DISE PF	REDICT	ION MODE	EL			
	<ul> <li>D: Existing</li> <li>P: Redhill Ave</li> <li>t: s/o Carneg</li> </ul>						Name: Th lumber: 12		very		
SITE S	SPECIFIC IN	IPUT DATA				Ν	NOISE MO	DDEL	INPUTS		
Highway Data				S	ite Con	ditions	(Hard = 1	0, Soft	t = 15)		
Average Daily 1	raffic (Adt):	31,940 vehicles	5					itos:	15		
Peak Hour F	Percentage:	10%					ucks (2 Ax	/	15		
Peak Ho	our Volume:	3,194 vehicles	6		He	avy Tru	cks (3+ Ax	les):	15		
	icle Speed:	50 mph		V	ehicle l	Mix					
Near/Far Lan	e Distance:	88 feet			Veh	icleType	e D	ay E	Evening N	ight	Daily
Site Data							Autos: 7	7.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			Me	edium T	rucks: 8	4.8%	4.9% 1	0.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy T	rucks: 8	6.5%	2.7% 1	0.8%	0.74%
Centerline Dis		60.0 feet		٨	loise So	ource E	levations	(in fee	t)		
Centerline Dist. t		60.0 feet				Auto	s: 2.00	0	,		
Barrier Distance t		0.0 feet			Mediu	m Truck	s: 4.00	0			
Observer Height (A	,	5.0 feet			Heav	y Truck	s: 8.00	- 6 G	ade Adjust	ment:	0.0
	d Elevation:	0.0 feet					Distance	() -	- 41		
	d Elevation:	0.0 feet		1	ane Eq		t Distance		et)		
F	Road Grade:	0.0%				Auto		-			
	Left View: Right View:	-90.0 degree 90.0 degree				m Truck ry Truck					
FHWA Noise Mode	Calculation	-									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresne	B	arrier Atten	Bern	n Atten
Autos:	70.20	2.63		1.20		-1.20	-4	.85	0.000		0.000
Medium Trucks:	81.00	-14.60		1.22		-1.20	-8	5.01	0.000		0.00
Heavy Trucks:	85.38	-18.56		1.20		-1.20	-8	5.34	0.000		0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r attenu	uation)						
	Leq Peak Ho			Leq Ev		Leq	Night	L	dn	CN	
Autos:			70.9		69.2		63.1		71.7		72.4
Medium Trucks:			54.9		58.5		57.0		65.5		65.
Heavy Trucks:			65.4		56.4		57.6		66.0		66.1
Vehicle Noise:			72.8		69.7		65.0		73.5		74.(
Centerline Distanc	e to Noise C	ontour (in feet)		-							
			_	70 d			dBA		dBA	55 0	
			Ldn:	10	-	-	21		77	1,0	
		CA	IEL:	11	U	2	38	5	513	1,1	U4

FI	HWA-I	RD-77-108	HIGH	IWAY NO	DISE PF	REDICT	ION MC	DEL			
Scenario: Existing						Project	Name:	The B	owery		
Road Name: Redhill A	ve.					Job N	lumber:	12282			
Road Segment: n/o Barra	inca P	kwy.									
SITE SPECIFIC	INPU	T DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard :	= 10, S	oft = 15)		
Average Daily Traffic (Adt):	32,6	10 vehicles	6					Autos:	15		
Peak Hour Percentage:		10%			Me	dium Tr	ucks (2	Axles):	15		
Peak Hour Volume:	3,2	61 vehicles	3		He	avy Tru	cks (3+	Axles):	15		
Vehicle Speed:		50 mph		V	/ehicle	Mix					
Near/Far Lane Distance:	1	06 feet		-		icleType	<b>.</b>	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	0	9.6%	
Barrier Height:		0.0 feet			Me	edium T	rucks:	84.8%		10.3%	1.849
Barrier Type (0-Wall, 1-Berm):		0.0 reet					rucks:			10.8%	
Centerline Dist. to Barrier:		0.0 feet									
Centerline Dist. to Observer:		0.0 feet		۸	loise So				eet)		
Barrier Distance to Observer:		0.0 feet				Auto		.000			
Observer Height (Above Pad):		5.0 feet				n Truck		.000			
Pad Elevation:		0.0 feet			Heav	y Truck	:s: 8	.006	Grade Ad	ustment.	0.0
Road Elevation:		0.0 feet		L	ane Eq	uivalen	t Distar	nce (in	feet)		
Road Grade.		0.0%				Auto		.826	,		
l eft View		0.0 degree	24		Mediur	n Truck		738			
Right View.		0.0 degree			Heav	y Truck	s: 45	.826			
FHWA Noise Model Calculation	ons				-						
VehicleType REMEL		affic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos: 70.2	20	2.72		0.46		-1.20		-4.86	0.0	000	0.00
Medium Trucks: 81.0		-14.51		0.48		-1.20		-5.00		000	0.00
Heavy Trucks: 85.3	88	-18.47		0.46		-1.20		-5.28	0.0	000	0.00
Unmitigated Noise Levels (wi											
VehicleType Leq Peak H		Leq Day		Leq Ev	·	Leq	Night		Ldn		VEL
	72.2		70.3		68.5		62		71.1		71.
	65.8		64.3		57.9		56		64.8		65.
	66.2		64.8		55.7		57	-	65.3		65.
	73.9		72.1		69.1		64	.3	72.9	9	73.
Centerline Distance to Noise	Conto	our (in feet,	)					-			
			L	70 d			dBA		60 dBA		dBA
			Ldn: VFL :	109			34 51		504 541		085
											166

	FHW	A-RD-77-108 HIG	SHWAY N	IOISE PF	REDICTIO	N MODE	L		
Road Nam	<i>io:</i> Existing <i>ne:</i> Redhill Ave. <i>nt:</i> s/o Barranca	Pkwy.			Project Na Job Nun				
SITE	SPECIFIC INF	PUT DATA			NO	ISE MC	DEL INPU	ſS	
Highway Data				Site Con	ditions (H	ard = 10	), Soft = 15)		
Average Daily	Traffic (Adt): 32	2,750 vehicles				Au	tos: 15		
Peak Hour	Percentage:	10%		Me	dium Truck	s (2 Axl	es): 15		
Peak H	lour Volume:	3,275 vehicles		He	avy Trucks	; (3+ Axl	es): 15		
Ve	hicle Speed:	50 mph	-	Vehicle I	Mix				
Near/Far La	ne Distance:	106 feet	-		icleType	Da	ay Evening	Night	Daily
Site Data					Au	tos: 77	.5% 12.9%	9.6%	97.42
Ra	rrier Height:	0.0 feet		Me	edium Truc	:ks: 84	.8% 4.9%	10.3%	1.849
Barrier Type (0-W		0.0		ŀ	leavy Truc	:ks: 86	.5% 2.7%	10.8%	0.74
Centerline Dis	st. to Barrier:	70.0 feet	-	Noise Sc	ource Elev	ations (	in feet)		
Centerline Dist.	to Observer:	70.0 feet	H		Autos:	2.000	,		
Barrier Distance	to Observer:	0.0 feet		Modiu	m Trucks:	4.000	-		
Observer Height (	Above Pad):	5.0 feet			v Trucks:	8.00	-	djustmen	0.0
Pa	ad Elevation:	0.0 feet		mour	y maono.	0.000	,	.,	
Roa	ad Elevation:	0.0 feet	_	Lane Eq	uivalent D				
	Road Grade:	0.0%			Autos:	45.82	-		
	Left View:	-90.0 degrees			m Trucks:	45.73	-		
	Right View:	90.0 degrees		Heav	y Trucks:	45.82	6		
FHWA Noise Mod	el Calculations								
VehicleType	REMEL		Distance	Finite		Fresnel	Barrier A	tten Be	rm Atter
Autos:	70.20	2.74	0.4	-	-1.20			.000	0.00
Medium Trucks:	81.00	-14.49	0.4	8	-1.20			.000	0.00
Heavy Trucks:	85.38	-18.45	0.4	6	-1.20	-5	.28 0	.000	0.00
Unmitigated Nois				· · · ·					
VehicleType	Leq Peak Hour			vening	Leq Ni	/	Ldn		NEL
Autos:	72.2		-	68.5		62.5	71		71.
Medium Trucks:	65.8		-	57.9		56.4	64		65
Heavy Trucks:	66.2		-	55.7		57.0	65		65.
Vehicle Noise:	73.9		2	69.1		64.3	72	.9	73.
Centerline Distan	ce to Noise Col	ntour (in feet)		(0.1					
				dBA	65 dB		60 dBA		dBA
		Ldn	n: 10	09	234		505	1	,088
		CNFI		17	252		543		169

FHWA-RD-77-10	8 HIGHWA	Y NOISE P	REDICTI	ON MODE	EL		
Scenario: Existing Road Name: Redhill Ave. Road Segment: n/o MacArthur Blvd.				Name: Th umber: 12	ne Bowery 2282		
SITE SPECIFIC INPUT DATA			N	OISE MO	DEL INPUT	rs	
Highway Data		Site Co			0, Soft = 15)		
Average Daily Traffic (Adt): 47,300 vehicl Peak Hour Percentage: 10%	es	M	ədium Tri	AL ICKS (2 AX	utos: 15 les): 15		
Peak Hour Volume: 4.730 vehicl	<b>AC</b>			ks (3+ Ax	,		
Vehicle Speed: 50 mph	03		,	101714	100): 10		
Near/Far Lane Distance: 88 feet		Vehicle			-		
		Vel	hicleType		ay Evening		Daily
Site Data					7.5% 12.9%		-
Barrier Height: 0.0 feet		N	ledium Tr		4.8% 4.9%		
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Tr	rucks: 86	6.5% 2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 60.0 feet		Noise S	ource El	evations	(in feet)		
Centerline Dist. to Observer: 60.0 feet			Autos	s: 2.00	0		
Barrier Distance to Observer: 0.0 feet		Medii	Im Trucks				
Observer Height (Above Pad): 5.0 feet			vy Trucks		6 Grade A	djustment	: 0.0
Pad Elevation: 0.0 feet			·		-	,	
Road Elevation: 0.0 feet		Lane Ed		Distance	, ,		
Road Grade: 0.0%			Autos				
Left View: -90.0 degr	ees		im Trucks				
Right View: 90.0 degr	ees	Hea	vy Trucks	s: 40.90	03		
FHWA Noise Model Calculations							
VehicleType REMEL Traffic Flow	Distan	e Finite	e Road	Fresnel	Barrier A	tten Ber	rm Atten
Autos: 70.20 4.3	4	1.20	-1.20	-4	4.85 0	.000	0.000
Medium Trucks: 81.00 -12.9	0	1.22	-1.20	-5	5.01 0	.000	0.000
Heavy Trucks: 85.38 -16.8	5	1.20	-1.20	-5	5.34 0	.000	0.000
Unmitigated Noise Levels (without Topo an							
VehicleType Leq Peak Hour Leq Da		q Evening	,	Night	Ldn		NEL
Autos: 74.5	72.7	70.9		64.8	73		74.1
Medium Trucks: 68.1	66.6	60.3		58.7	67		67.4
Heavy Trucks: 68.5	67.1	58.1		59.3	67		67.8
Vehicle Noise: 76.2	74.5	71.4	1	66.7	75	.2	75.7
Centerline Distance to Noise Contour (in fee				-			
		70 dBA		dBA	60 dBA		dBA
	Ldn:	134		88	620		335
0	CNEL:	143	30	09	666	1,	435

Friday, November 15, 2019

Friday, November 15, 2019

Barrier Type (orwain, robertin).     0.00       Centerline Dist. to Barrier.     40.0 feet       Rarrier Distance to Observer:     40.0 feet       Barrier Distance to Observer:     0.0 feet       Barrier Distance to Observer:     0.0 feet       Road Elevation:     0.0 feet       Road Elevation:     0.0 feet       Road Elevation:     0.0 feet       Left View:     -90.0 degrees       PHWA Noise Model Calculations     Vehicle Traffic Flow       VehicleType     REMEL       Tartic Flow     Distance       Finite Road     Fresnel       Barrier Atten     Bern Atten		FHW	/A-RD-77-108	HIGHV	VAY NC	DISE PR	EDICTI		EL			
Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         21,510 vehicles         Autos:         15           Peak Hour Porcentage:         10%         Medium Trucks (2 Avles):         15           Peak Hour Volume:         2,151 vehicles         Medium Trucks (2 Avles):         15           Vehicle Speed:         50 mph         Medium Trucks (2 Avles):         15           Vehicle Speed:         50 mph         Near/Far Lane Distance:         36 feet         Vehicle Type         Day         Evening         Night         Daily           Ste Data         Vehicle Type         Day         Evening         Night         Daily           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Barrier Distance to Observer:         40.0 feet         Autos:         77.5%         12.9%         9.6%         9.74.2%           Observer Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Pad Elevation:         0.0 feet         Autos:         73.5%         12.9%         9.6%         97.42%           Medium Trucks:         81.00         16 teet         Autos:         73.5%         10.8%	Road Nam	e: Redhill Ave								wery		
Average Daily Traffic (Adt):         21,510         vehicles         Autos:         15           Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         2,151 vehicles         Heavy Trucks (34 Axles):         15           Vehicle Speed:         50 mph         Near/Far Lane Distance:         36 feet         Vehicle/Type         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Height:         0.0 feet         Medium Trucks:         84.5%         2.7%         10.8%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Darrier:         40.0 feet         Medium Trucks:         84.5%         2.7%         10.8%         0.74%           Observer Height:         0.0 feet         Medium Trucks:         80.06         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         35.847         Medium Trucks:         35.847           VehicleType         RELMEL         Traffic Flow         Distance         Finite Road         Fresent         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -4.83 <th>SITE</th> <th>SPECIFIC IN</th> <th>PUT DATA</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>5</th> <th></th>	SITE	SPECIFIC IN	PUT DATA								5	
Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         15           Peak Hour Volume:         2,151 vehicles         Heavy Trucks (3+ Axles):         15           Vehicle Speed:         50 mph         Vehicle Speed:         50 mph           Site Data         Autos:         77.5%         12.9%         9.6%         9.4%           Barrier Type (Owalt, 1-Berm):         0.0 feet         Autos:         77.5%         12.9%         9.6%         9.4%           Barrier Type (Owalt, 1-Berm):         0.0 feet         Autos:         2.000         10.8%         0.74%           Barrier Type (Owalt, 1-Berm):         0.0 feet         Autos:         2.000         10.8%         0.74%           Barrier Type (Owalt, 1-Berm):         0.0 feet         Autos:         2.000         Heavy Trucks:         8.6%         2.7%         10.8%         0.74%           Observer:         0.0 feet         Autos:         2.000         Heavy Trucks:         8.58         2.7%         10.9%         Heavy Trucks:         35.847           Road Elevation:         0.0 feet         Autos:         35.847         Medium Trucks:         35.847           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel	Highway Data				S	ite Con	ditions	(Hard =	10, So	ft = 15)		
Vehicle Speed:         50 mph 36 feet         Vehicle Mix           Site Data         Autos:         77.5%         12.9%         9.6%         97.4%           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         0.74%           Centerline Dist. to Dserver:         0.0 feet         Moles         Autos:         2.000         Noise Source Elevations (in feet)         0.0         4.400         Noise Source Elevations (in feet)         0.0         1.8%         1.4%         Noise Source Elevations (in feet)         0.0         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%         1.40%		, ,		s		Med	lium Tru					
Near/Far Lane Distance:         36 fet         VehicleType         Day         Evening         Night         Daily           Site Data         VehicleType         Day         Evening         Night         Daily           Site Data         VehicleType         Day         Evening         Night         Daily           Barrier Type (OWalt, 1-Berm):         0.0 feet         Autos:         77.5%         12.9%         9.6%         74.2%           Barrier Type (OWalt, 1-Berm):         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Barrier Type (OWalt, 1-Berm):         0.0 feet         Autos:         2.000         Noise Source Elevations (in feet)         0.74%           Observer:         0.0 feet         Autos:         35.847         Noise Source Elevation:         0.0           Road Elevation:         0.0 feet         Autos:         35.847         Noise         Source Sourc	Peak H	lour Volume:	2,151 vehicle	s		Hea	vy Truc	ks (3+ A	xles):	15		
Near/Far Lane Distance:         36 feet         VehicleType         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         9.74%         9.6%         9.74%           Barrier Height:         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84%           Barrier Type (0-Wall, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         0.74%           Barrier Dist. to Doserver:         40.0 feet         Autos:         2.000         Noise Source Elevations (in feet)         0.74%           Observer Height (Above Pad):         5.0 feet         Autos:         3.00         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Left View:         90.0 degrees         Rodad Grade:         0.0%         Autos:         35.847           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berr Atten           Autos:         70.2         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         85.38         -20.28	Ve	hicle Speed:	50 mph		14	ahiala I	11.u					
Site Data         Autos:         77.5%         12.9%         9.6%         97.42%           Barrier Type (O Walt, 1-Berm):         0.0         0         Medium Trucks:         84.5%         4.9%         10.3%         1.8%           Barrier Type (O Walt, 1-Berm):         0.0         0         Medium Trucks:         84.5%         4.9%         10.3%         1.8%           Centerline Dist. to Darrier:         40.0 feet         Meavy Trucks:         86.5%         2.7%         10.8%         0.74%           Deserver Height (Above Pad):         5.0 feet         Autos:         2.000         Medium Trucks:         4.000           Pad Elevation:         0.0 feet         Autos:         35.847         Medium Trucks:         35.847           Road Grade:         0.0%         Left View:         90.0 degrees         Finite Road         Fresnet         Barrier Atten         Bern Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Bern Atten           Medium Trucks:         85.38         -20.28         2.06         -1.20         -6.68         0.000         0.000           Heavy Trucks:         85.38         -20.28         2.06         -1.20 <td< td=""><td>Near/Far La</td><td>ne Distance:</td><td>36 feet</td><td></td><td>V</td><td></td><td></td><td></td><td>Dav</td><td>Evoning</td><td>Night</td><td>Daily</td></td<>	Near/Far La	ne Distance:	36 feet		V				Dav	Evoning	Night	Daily
Barrier Height:         0.0 feet         Medium Trucks:         8.4.8%         4.9%         10.3%         1.84%           Barrier Type (0-Wail, 1-Berm):         0.0         10.0         Heavy Trucks:         85.5%         2.7%         10.8%         0.74%           Centerline Dist. to Dserver:         40.0         feet         Noise Source Elevations (in feet)         Lat Vicks:         4.000         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Autos:         2.000         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         -90.0         degrees         Heavy Trucks:         35.75           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         81.00         -16.32         2.06         -1.20         -5.66         0.000         0.000	Sito Data					veni				v		
Barrier Type (0-Wall, 1-Berm):         0.0         Heavy Trucks:         86.5%         2.7%         10.8%         0.74%           Centerline Dist. to Desriver:         40.0 feet         Noise Source Elevations (in feet)         Autos:         2.00           Barrier Distance to Observer:         0.0 feet         Melany Trucks:         8.006         Grade Adjustment:         0.0           Barrier Distance to Observer:         0.0 feet         Autos:         2.00         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Melium Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Melium Trucks:         35.847         Melium Trucks:         35.847           WhicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         85.38         -20.28         2.06         -1.20         -5.66         0.000         0.000           Medium Trucks:         85.38         -20.28         2.06         -1.20         -5.66         0			0.0.6+			Me						
Centerline Dist. to Observer:         40.0 feet         Noise Source Elevations (in feet)           Barrier Distance to Observer:         0.0 feet         Autos:         2.00           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         4.00           Pad Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Grade         0.0%         Laft View:         -90.0 degrees         Redium Trucks:         35.735           Right View:         90.0 degrees         Heavy Trucks:         35.735         Heavy Trucks:         35.000         0.0000           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.66         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Paving         Leq Viewing         Leq Noise         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9	Barrier Type (0-W	all, 1-Berm):	0.0			H	leavy Tr	ucks:	36.5%	2.7%	10.8%	0.74%
Barrier Distance to Observer:         0.0 feet         Autos:         2.000           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Leaview         90.0 degrees         Autos:         35.847           Road Grade:         0.0%         Autos:         35.847         Medium Trucks:         35.847           Period Stance (in feet)           Left livew:         90.0 degrees         Medium Trucks:         35.847           FHWA Noise Model Calculations         Point Calculations         Present         Barrier Atten         Berr Atten           Autos:         70.2         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         85.38         -20.28         2.06         -1.20         -5.68         0.000         0.000           Medium Trucks:         85.38         -20.28         2.06         -1.20         -5.66         0.000         0.000           Unmitigated Noise Levels (without Topo and Darrier attenuation)         Vehicle/Type         Leg Davi         Leg Neinig         Leg Noinig         7.7         56.2         64.6         64.8           Heavy Trucks					N	oise So	urce El	evations	; (in fe	et)		
Observer Height (Above Pad):         5.0 feet         Medium Tracks:         4.000           Pad Elevation:         0.0 feet         Heavy Tracks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Left View:         -90.0 degrees         Autos:         35.847           Left View:         -90.0 degrees         Medium Tracks:         35.847           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -6.08         0.000         0.000           Medium Tracks:         81.00         -16.32         2.08         -1.20         -5.56         0.000         0.000           Medium Tracks:         85.38         -20.28         2.06         -1.20         -5.56         0.000         0.000           Medium Tracks:         85.38         -20.28         2.06         -1.20         -5.56         0.000         0.000           Medium Tracks:         85.38         -20.28         2.06         -1.20         -5.56         0.000         0.000           Unnitigated Noise:         VehicleType         Leg Pay							Autos	s: 2.0	00			
Pad Elevation:         0.0 feet         Treavy Trucks:         8.006         Brance Adjustment.         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Adjustment.         0.0           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Autos:         35.847           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.56         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise: <td< td=""><td></td><td></td><td></td><td></td><td></td><td>Medium</td><td>n Trucks</td><td>: 4.0</td><td>00</td><td></td><td></td><td></td></td<>						Medium	n Trucks	: 4.0	00			
Road Grade:         0.0%         Autos:         35.847           Left View:         -90.0 degrees         Medium Trucks:         35.735           Heavy Trucks:         35.735         Heavy Trucks:         35.847           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.68         0.000         0.000           Medium Trucks:         85.3         -20.28         2.06         -1.20         -5.66         0.000         0.000           Unnitigated Noise Levels (without Top and barrier attenuation)         VehicleType         Leg Peak Hour         Leg Qay         Leg Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         65.6         64.1         72.7         73.1           Centerline Distance to Nois		,				Heav	/ Trucks	a: 8.0	06	Grade Adj	ustment.	0.0
Left View:         -90.0 degrees         Medium Trucks:         35.75           Right View:         90.0 degrees         Heavy Trucks:         35.75           FHWA Noise Model Calculations         Entite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         T0.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.56         0.000         0.000           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Reak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.2           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)	Roa	ad Elevation:	0.0 feet		Li	ane Equ	iivalent	Distanc	e (in f	eet)		
Right View:         90.0 degrees         Heavy Trucks:         35.847           FHWA Noise Model Calculations         Heavy Trucks:         35.847           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         70.20         0.92         2.06         -1.20         -5.68         0.000         0.000           Medium Trucks:         81.00         -16.32         2.06         -1.20         -5.56         0.000         0.000           Umitigated Noise Levels (without Topo and barrier attenuation)         Leq Day         Leq Day         Leq Nerming         Leq Night         Ldn         CNEL           VehicleType         [60.0         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         Interviewerer         55 dBA         60 dBA		Road Grade:	0.0%				Autos	35.8	47			
FHWA Noise Model Calculations         Finite Road         Fresnel         Barrier Atten         Berrn Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrn Atten           Autos:         70.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.56         0.000         0.000           Imitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         65.6         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         Tod BA         65 dBA         60 dBA         55 dBA           Ldn		Left View:	-90.0 degre	es		Mediur	n Trucks	: 35.7	35			
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Bern Atten           Autos:         70.20         0.92         2.06         -1.20         -4.8.3         0.000         0.000           Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.68         0.000         0.000           Medium Trucks:         85.38         -20.28         2.06         -1.20         -5.56         0.000         0.000           Unmitigated Noise Levels (without Topo and barrier attenuation)         Leq Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)		Right View:	90.0 degre	es		Heav	/ Trucks	: 35.8	47			
Autos:         70.20         0.92         2.06         -1.20         -4.83         0.000         0.000           Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.08         0.000         0.000           Heavy Trucks:         85.38         -20.28         2.06         -1.20         -5.56         0.000         0.000           Umitigate Moise Levels (without Top can ab barrier attenuation)         Leq Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         To dBA         65 dBA         60 dBA         55 dBA           Lch:         60         129         279         601	FHWA Noise Mod	el Calculations	5									
Medium Trucks:         81.00         -16.32         2.08         -1.20         -5.08         0.000         0.000           Heavy Trucks:         85.38         -20.28         2.06         -1.20         -5.56         0.000         0.000           Unmitigated Noise Levels (without Topo and barrier attenuation)         Leg Day         Leg Naming         Leg Night         Ldn         CNEL           VehicleType         Leg Peak Hour         Leg Day         Leg Reining         Leg Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         66.0         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         Image: Contour (in feet)         Image: Contour (in feet)         Image: Contour (in feet)         Image: Contour (in feet)           Lubr:         60         129         279         601	VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	e/ I	Barrier Atte	en Ber	m Atten
Heavy Trucks:         65.38         -20.28         2.06         -1.20         -5.56         0.000           Unitigated Noise Levels (without Topo and barrier attenuation)         Leq Night         Ldn         CNEL           VehicleType         Leq Peak Hour         Leq Day         Leq Vehicle Type         Leq Night         Ldn         CNEL           Medium Trucks:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         66.6         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         To dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601		70.20	0.92		2.06		-1.20		4.83	0.0	00	0.000
VehicleType         Leq Peak Hour         Topo and barrier         attenuation           VehicleType         Leq Peak Hour         Leq Day         Leq Vehicle X         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Tracks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Tracks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)	Medium Trucks:											0.000
VehicleType         Leq Peak Hour         Leq Day         Leq Vening         Leq Night         Ldn         CNEL           Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601							-1.20		-5.56	0.0	00	0.000
Autos:         72.0         70.1         68.3         62.3         70.9         71.5           Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601											-	
Medium Trucks:         65.6         64.1         57.7         56.2         64.6         64.8           Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601	,,				Leq Eve	~	Leq I					
Heavy Trucks:         66.0         64.5         55.5         56.8         65.1         65.2           Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601			-									
Vehicle Noise:         73.7         71.9         68.9         64.1         72.7         73.1           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601			-									
Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601	· · · ·		-									
T0 dBA         65 dBA         60 dBA         55 dBA           Ldn:         60         129         279         601						68.9		64.1		/2./		/3.1
Ldn: 60 129 279 601	Centerline Distan	ce to Noise Co	ntour (in feel	)	70 di	за	65 (	1BA	6	0 dBA	55	dBA
				Ldn:								
			С									

FHWA-RD-77-108 HIGH	VAY NOISE	PREDIC	ION MODE	L	
Scenario: Existing Road Name: Valencia Ave. Road Segment: w/o Redhill Ave.			t Name: Th Number: 12		
SITE SPECIFIC INPUT DATA			NOISE MO	DEL INPUT	s
Highway Data	Site	Condition	s (Hard = 10	), Soft = 15)	
Average Daily Traffic (Adt): 7,720 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 772 vehicles			Au rucks (2 Axle icks (3+ Axle	,	
Vehicle Speed: 45 mph	Mahi			-	
Near/Far Lane Distance: 36 feet		le Mix	. 0.		Nisht Dalls
01: D /		/ehicleTyp		y Evening	Night Daily 9.6% 97.42%
Site Data		Medium		.5% 12.9%	9.6% 97.42%
Barrier Height: 0.0 feet					
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy	Frucks: 86	.5% 2.7%	10.8% 0.749
Centerline Dist. to Barrier: 40.0 feet	Nois	e Source E	levations (	in feet)	
Centerline Dist. to Observer: 40.0 feet		Aut	os: 2.000	)	
Barrier Distance to Observer: 0.0 feet	Me	dium Truc	ks: 4.000	)	
Observer Height (Above Pad): 5.0 feet	F	leavy Truc	ks: 8.006	Grade Ad	justment: 0.0
Pad Elevation: 0.0 feet					
Road Elevation: 0.0 feet	Lane		nt Distance	,	
Road Grade: 0.0%		Aut		7	
Left View: -90.0 degrees		dium Truc		-	
Right View: 90.0 degrees	F	leavy Truc	ks: 35.84	7	
FHWA Noise Model Calculations					
	ance Fi	nite Road	Fresnel	Barrier Att	en Berm Atten
Autos: 68.46 -3.07	2.06	-1.20	-4.	.83 0.0	0.00 0.00
Medium Trucks: 79.45 -20.31	2.08	-1.20			0.00
Heavy Trucks: 84.25 -24.27	2.06	-1.20	-5.	56 0.0	0.00
Unmitigated Noise Levels (without Topo and barrie	r attenuatio	,			
VehicleType Leq Peak Hour Leq Day	Leq Evenin		Night	Ldn	CNEL
Autos: 66.3 64.4	-	2.6	56.5	65.3	
Medium Trucks: 60.0 58.5	-	2.2	50.6	59.	
Heavy Trucks: 60.8 59.4	5	0.4	51.6	60.	
Vehicle Noise: 68.1 66.3	6	3.2	58.5	67.	1 67.
Centerline Distance to Noise Contour (in feet)					
	70 dBA	65	i dBA	60 dBA	55 dBA
Ldn:	25 27		55 59	118	255
CNFL:				127	273

	o: Existing				Project	Name: T	ho Ro	worv		
	e: Valencia Av	0				imber: 1		wery		
	t: e/o Redhill /				000740	111001. 1	2202			
	SPECIFIC IN	PUT DATA		04-0					5	
Highway Data				Site Con	aitions			,		
Average Daily	, ,	9,570 vehicles					utos:	15		
	Percentage:	10%				cks (2 A		15		
	our Volume:	957 vehicles		He	avy Truc	ks (3+ A	kles):	15		
	hicle Speed:	45 mph		Vehicle I	Mix					
Near/Far Lar	e Distance:	36 feet		Veh	icleType	1	Day	Evening	Night	Daily
Site Data					A	utos: 7	7.5%	12.9%	9.6%	97.42
Bar	rier Heiaht:	0.0 feet		Me	edium Tr	ucks: 8	34.8%	4.9%	10.3%	1.84
Barrier Type (0-W		0.0		ŀ	leavy Tr	ucks: 8	86.5%	2.7%	10.8%	0.74
Centerline Dis		40.0 feet	_							
Centerline Dist. 1		40.0 feet	_	Noise So				et)		
Barrier Distance		0.0 feet			Autos					
Observer Height ()		5.0 feet			n Trucks					
0 1	d Flevation:	0.0 feet		Heav	y Trucks	: 8.0	06	Grade Adjı	ustment:	0.0
	d Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	eet)		
	Road Grade:	0.0%			Autos			,		
	Left View:	-90.0 degrees		Mediu	n Trucks	35.7	35			
	Right View:	90.0 degrees		Heav	y Trucks	: 35.8	47			
FHWA Noise Mode	el Calculations	;								
VehicleType	REMEL	Traffic Flow Dis	stance	Finite	Road	Fresne	el I	Barrier Atte	en Ber	m Atter
	68.46	-2.14	2.0	6	-1.20	-	4.83	0.0	00	0.00
Autos:	00.40	-2.14							~~	0.00
Autos: Medium Trucks:	79.45	-19.38	2.0	8	-1.20	-	5.08	0.0	00	0.00
Medium Trucks: Heavy Trucks:	79.45 84.25	-19.38 -23.34	2.0	6	-1.20 -1.20		5.08 5.56	0.0		
Medium Trucks: Heavy Trucks: Unmitigated Noise	79.45 84.25 e Levels (witho	-19.38 -23.34 out Topo and barri	2.0 er atter	6 nuation)	-1.20	-		0.0	00	0.00
Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	79.45 84.25 E Levels (without Leg Peak Hour	-19.38 -23.34 Dut Topo and barri r Leq Day	2.0 er atter	i6 nuation) ivening		- Vight		0.0	00 CI	0.00
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	79.45 84.25 E Levels (without Leg Peak Hout 67.	-19.38 -23.34 <b>but Topo and barri</b> r Leq Day 2 65.3	2.0 er atter	i6 nuation) ivening 63.5	-1.20	- Vight 57.5		0.0 Ldn 66.1	00 <i>CI</i>	0.00 VEL 66
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	79.45 84.25 2 Levels (without Leq Peak Hout 67. 61.	-19.38 -23.34 <b>but Topo and barri</b> r Leq Day 2 65.3 0 59.4	2.0 er atter	16 nuation) ivening 63.5 53.1	-1.20	Vight 57.5 51.5		0.00 Ldn 66.1 60.0	00 CI	0.00 VEL 66 60
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	79.45 84.25 2 Levels (without Leg Peak Hout 67. 61. 61.	-19.38 -23.34 <b>but Topo and barri</b> r Leq Day 2 2 65.3 0 59.4 8 60.4	2.0 er atter	nuation) ivening 63.5 53.1 51.3	-1.20	Vight 57.5 51.5 52.6		0.00 Ldn 66.1 60.0 60.9	00 CI	0.00 VEL 66 60 61
Medium Trucks: Heavy Trucks: VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 2 Levels (without Leg Peak Hout 67. 61. 61. 61. 69.	-19.38 -23.34 <b>but Topo and barri</b> 2 65.3 0 59.4 8 60.4 0 67.3	2.0 er atter	16 nuation) ivening 63.5 53.1	-1.20	Vight 57.5 51.5		0.00 Ldn 66.1 60.0	00 CI	0.00 VEL 66 60 61
Medium Trucks: Heavy Trucks: VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	79.45 84.25 2 Levels (without Leg Peak Hout 67. 61. 61. 61. 69.	-19.38 -23.34 <b>but Topo and barri</b> 2 65.3 0 59.4 8 60.4 0 67.3	2.0 Ter atter Leq E	6 nuation) ivening 63.5 53.1 51.3 64.1	-1.20	Vight 57.5 51.5 52.6 59.4	5.56	0.00 Ldn 66.1 60.0 60.9 68.0	00 CI	0.00 VEL 66 60 61 68
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	79.45 84.25 2 Levels (without Leg Peak Hout 67. 61. 61. 61. 69.	-19.38 -23.34 <b>but Topo and barri</b> 2 65.3 0 59.4 8 60.4 0 67.3	2.0 er atter Leq E 70	nuation) ivening 63.5 53.1 51.3	-1.20	Vight 57.5 51.5 52.6 59.4	5.56	0.00 Ldn 66.1 60.0 60.9	00 CI 55	0.00

	FHWA	A-RD-77-108 HI	GHWAY	NOISE PI	REDICTIO	ON MODE	L		
	io: Existing					Vame: The			
	e: Warner Ave.				Job Nu	mber: 122	82		
Road Segme	nt: w/o Grand Av	/e.							
	SPECIFIC INP	UT DATA					DEL INPUTS	5	
Highway Data				Site Cor	nditions (	Hard = 10	Soft = 15)		
Average Daily	Traffic (Adt): 24					Aut			
Peak Hour	Percentage:	10%		Me	dium Tru	cks (2 Axle	s): 15		
Peak H	lour Volume: 2	,429 vehicles		He	avy Truck	ks (3+ Axle	es): 15		
Ve	hicle Speed:	45 mph		Vehicle	Mix				
Near/Far La	ne Distance:	36 feet		Veh	icleType	Da	y Evening	Night	Daily
Site Data						-	5% 12.9%	v	97.42%
Ba	rrier Heiaht:	0.0 feet		М	edium Tru	ucks: 84	8% 4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			Heavy Tru	ucks: 86	5% 2.7%	10.8%	0.74%
Centerline Dis		40.0 feet		Noiso S	ourco Ek	evations (i	n foot)		
Centerline Dist.	to Observer:	40.0 feet		NOISE 3	Autos		,		
Barrier Distance	to Observer:	0.0 feet		Mark	Autos m Trucks				
Observer Height (	Above Pad):	5.0 feet			vy Trucks			ustmont	0.0
Pa	ad Elevation:	0.0 feet		i ica	ly mucks	. 0.000	Grade Adj	usunon.	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet)		
	Road Grade:	0.0%			Autos	: 35.847	,		
	Left View:	-90.0 degrees		Mediu	m Trucks	35.735	;		
	Right View:	90.0 degrees		Hear	vy Trucks	35.847	,		
FHWA Noise Mod	el Calculations								
VehicleType	REMEL 1	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	en Bern	n Atten
Autos:	68.46	1.90	2.	06	-1.20	-4.	83 0.0	00	0.000
Medium Trucks:	79.45	-15.34	2.	08	-1.20	-5.	08 0.0	00	0.000
Heavy Trucks:	84.25	-19.29	2.	06	-1.20	-5.	56 0.0	00	0.000
Unmitigated Noise	e Levels (withou	ıt Topo and ba	rrier atte	nuation)					
VehicleType	Leq Peak Hour	Leq Day	,	Evening	Leq N	•	Ldn	CN	
Autos:	71.2			67.6		61.5	70.1		70.7
Medium Trucks:	65.0			57.1		55.6	64.0		64.3
Heavy Trucks:	65.8			55.4		56.6	65.0		65.1
Vehicle Noise:	73.1	71	.3	68.2		63.5	72.0	)	72.5
Centerline Distan	ce to Noise Con	tour (in feet)							
				) dBA	65 a		60 dBA	55 0	
		Ld		55	11		254	54	
		CNE	L:	59	12	6	272	58	7
		UNE	L.	53	12	U	212	56	

Friday, November 15, 2019

Friday, November 15, 2019

	FHV	/A-RD-77-108	HIGH	WAY N	OISE PR	REDICTI		DEL			
Road Nam	io: Existing e: Warner Ave nt: e/o Grand A						Name: 1 umber: 1		owery		
SITE	SPECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	S	
Highway Data				4)	Site Con	ditions	(Hard =	10, So	oft = 15)		
	Traffic (Adt): 2 Percentage: lour Volume:	2,920 vehicle 10% 2,292 vehicle					/ icks (2 A :ks (3+ A	/	15 15 15		
Ve	hicle Speed:	45 mph			/ehicle I	Mix					
Near/Far La	ne Distance:	36 feet		Ľ		icleType		Dav	Evening	Night	Daily
Site Data					VOIII			77.5%	•	9.6%	
		0.0 feet			Me	dium Tr		B4.8%		10.3%	
Barrier Type (0-W		0.0			F	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		40.0 feet		1	loise So	ource El	evations	s (in fe	eet)		
Centerline Dist.		40.0 feet				Autos	s: 2.0	100			
Barrier Distance		0.0 feet			Mediur	n Trucks	s: 4.0	00			
Observer Height (	Above Pad): ad Flevation:	5.0 feet 0.0 feet			Heav	y Trucks	s: 8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation: ad Elevation:	0.0 feet			ano Fai	uivalont	Distanc	o (in f	foot)		
	Road Grade:	0.0%		- F	ane Ly	Autos					-
	Left View:	-90.0 degre	~~		Modiur	n Trucks					
	Right View:	90.0 degre				y Trucks					
FHWA Noise Mod	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el .	Barrier Att	en Be	rm Atten
Autos:	68.46	1.65		2.06	6	-1.20		-4.83	0.0	000	0.000
Medium Trucks:	79.45	-15.59		2.08	3	-1.20		-5.08	0.0	000	0.000
Heavy Trucks:	84.25	-19.54		2.06	6	-1.20		-5.56	0.0	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leq Ev		Leq I			Ldn	-	NEL
Autos:	71	-	69.1		67.3		61.3		69.9		70.5
Medium Trucks:	64		63.2		56.9		55.3		63.8	-	64.0
Heavy Trucks:	65		64.2		55.1		56.4		64.7		64.8
Vehicle Noise:	72	-	71.1		67.9		63.2		71.8	3	72.2
Centerline Distan	ce to Noise Co	ontour (in feet	)	70 a	IBA	65 (	1RA	6	0 dBA	55	dBA
			Ldn:	53		11			244		526
			NEL:	56	-	12			262		564
		0.		00		12			202		

	FHV	/A-RD-77-108	HIGH	IWAY NO	DISË PR	EDICT	ION MOD	EL			
Scenario	p: Existing					Project	Name: T	he Bo	wery		
	e: Warner Ave					Job N	umber: 1	2282			
Road Segmen	t: w/o Redhill	Ave.									
	SPECIFIC IN	PUT DATA							INPUTS	5	
Highway Data				s	ite Con	ditions	(Hard =	10, Soi	ft = 15)		
Average Daily 7	Traffic (Adt): 2	3,020 vehicle	s				A	utos:	15		
Peak Hour F	Percentage:	10%			Med	dium Tr	ucks (2 A	xles):	15		
Peak Ho	our Volume:	2,302 vehicles	s		Hea	avy Tru	cks (3+ A.	xles):	15		
Veh	icle Speed:	45 mph		V	ehicle I	liv					
Near/Far Lan	e Distance:	88 feet		v		cleType		Day	Evening	Night	Daily
Site Data					veni			77.5%	12.9%	9.6%	
					Me	dium T		34.8%	4.9%	10.3%	1.849
	rier Height:	0.0 feet						36.5%	2.7%	10.3%	
Barrier Type (0-Wa		0.0				icavy i	uchs. c	0.070	2.170	10.070	0.74
Centerline Dis		60.0 feet		N	loise So	urce E	levations	(in fe	et)		
Centerline Dist. to		60.0 feet				Auto	s: 2.0	00			
Barrier Distance to		0.0 feet			Mediur	n Truck	s: 4.0	00			
Observer Height (A	,	5.0 feet			Heav	y Truck	s: 8.0	06 (	Grade Adji	ustment:	0.0
	d Elevation:	0.0 feet					Distant	- (1 6)	41		
	d Elevation:	0.0 feet		L	ane Equ		t Distanc	· ·	et)		
F	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree			Mediur						
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.9	03			
FHWA Noise Mode	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	el E	Barrier Atte	en Ber	m Atter
Autos:	68.46	1.67		1.20		-1.20	-	4.85	0.0	00	0.00
Medium Trucks:	79.45	-15.57		1.22		-1.20	-	5.01	0.0	00	0.00
Heavy Trucks:	84.25	-19.52		1.20		-1.20	-	5.34	0.0	00	0.00
Unmitigated Noise											
21	Leq Peak Hou	1 1		Leq Eve	•	Leq	Night		Ldn		VEL
Autos:	70		68.2		66.5		60.4		69.0		69.
Medium Trucks:	63		62.4		56.0		54.5		62.9		63
Heavy Trucks:	64	.7	63.3		54.3		55.5		63.9		64
Vehicle Noise:	72	.0	70.2		67.1		62.4		70.9		71
Centerline Distanc	e to Noise Co	ontour (in feet	)								
			L	70 di	BA	65	dBA	60	) dBA	55	dBA
			Ldn:	69		1	49		322	6	94
			NFI :	74					345	-	

	FHV	/A-RD-77-108	HIGHV	VAY N	OISE PF	REDICT		EC			
Scenari	o: Existing						Name: TI		wery		
Road Nam	e: Warner Ave	<b>)</b> .				Job N	umber: 12	2282			
Road Segmer	nt: e/o Redhill	Ave.									
	SPECIFIC IN	PUT DATA								5	
Highway Data				5	Site Con	ditions	(Hard = 1	· ·	,		
Average Daily	Traffic (Adt): 1	5,130 vehicles	6					utos:	15		
	Percentage:	10%					ıcks (2 Ax		15		
	our Volume:	1,513 vehicles	3		He	avy Truc	:ks (3+ Ax	les):	15		
	hicle Speed:	50 mph		1	/ehicle	Mix					
Near/Far Lar	ne Distance:	88 feet			Veh	icleType	E	ay	Evening	Night	Daily
Site Data							Autos: 7	7.5%	12.9%	9.6%	97.429
Bar	rier Height:	0.0 feet			Me	edium Ti	rucks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			F	leavy T	rucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		60.0 feet			Voico Se	urco E	evations	(in fo	(of)		
Centerline Dist.	o Observer:	60.0 feet		-	voise st	Auto			el)		
Barrier Distance t	o Observer:	0.0 feet			A da alla u	Auto m Truck					
Observer Height (/	Above Pad):	5.0 feet				y Truck		-	Grade Adji	istmont	. 0.0
Pa	d Elevation:	0.0 feet			neav	y much	s. 0.00	0	Orade Adje	isunen.	. 0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	Distance	e (in f	eet)		
F	Road Grade:	0.0%				Auto	s: 40.90	)2			
	Left View:	-90.0 degree	s		Mediu	m Truck					
	Right View:	90.0 degree	es		Heav	ry Truck	s: 40.90	)3			
FHWA Noise Mode	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresne		Barrier Atte	en Ber	m Atten
Autos:	70.20	-0.61		1.20		-1.20		4.85	0.0		0.00
Medium Trucks:	81.00	-17.85		1.22		-1.20		5.01	0.0	00	0.00
Heavy Trucks:	85.38	-21.80		1.20	)	-1.20	-{	5.34	0.0	00	0.00
Unmitigated Noise					· · ·						
	Leq Peak Hou			Leq Ev		Leq	Night		Ldn 68.5		NEL
Autos: Medium Trucks:	69 63	-	67.7 61.7		65.9 55.3		59.9 53.8		68.5		69. 62
		-	51.7 62.2		55.3 53.1		53.8 54.4		62.2		
Heavy Trucks:	63	•									62.
Vehicle Noise:	71		69.5		66.5		61.7		70.3		70.
Centerline Distance	e to Noise Co	ontour (in feet	)	70 d	ID A	65	dBA	6	0 dBA	55	dBA
				70 U	DA	65	ubn	0	UUDA		
			I dn	67	2	1	26		200	6	25
			Ldn: VFL :	62 67	-		35 45		290 311	-	625 671

	FHW	A-RD-77-108 HIG	HWAY I	NOISE PF	REDICTI	ON MOD	EL			
Road Nam	io: Existing e: Dyer Rd. nt: w/o Redhill A	we.				Name: Ti umber: 12		very		
SITE	SPECIFIC INF	PUT DATA			N	OISE M	ODEL	INPUTS	s	
Highway Data				Site Con	ditions	(Hard = 1	0, Sof	t = 15)		
Average Daily	Traffic (Adt): 25	5,530 vehicles				A	utos:	15		
	Percentage:	10%		Me	dium Tru	icks (2 Ax	(les):	15		
Peak H	our Volume: 2	2,553 vehicles		He	avy Truc	ks (3+ Ax	des):	15		
Ve	hicle Speed:	40 mph		Vehicle	Mise					
Near/Far Lai	ne Distance:	88 feet				6		Tuoning	Night	Dailu
Site Data				ven	icleType		Day 1	Evening	Night	Daily
					ء edium Tr		7.5% 4.8%	12.9% 4.9%	9.6% 10.3%	97.42% 1.84%
	rrier Height:	0.0 feet			eaium Tr Heavy Tr		4.8% 6.5%	4.9% 2.7%	10.3%	0.74%
Barrier Type (0-W		0.0		,	Heavy II	UCKS: 8	0.5%	2.1%	10.8%	0.74%
Centerline Dis		60.0 feet		Noise So	ource El	evations	(in fee	t)		
Centerline Dist.		60.0 feet			Autos	s: 2.00	00			
Barrier Distance		0.0 feet		Mediu	m Trucks	s: 4.00	00			
Observer Height (	,	5.0 feet		Heav	v Trucks	s: 8.00	06 G	ade Adj	ustment.	0.0
	ad Elevation:	0.0 feet								
	ad Elevation:	0.0 feet		Lane Eq		Distance		et)		
1	Road Grade:	0.0%			Autos					
	Left View:	-90.0 degrees			m Trucks					
	Right View:	90.0 degrees		Heav	y Trucks	s: 40.90	03			
FHWA Noise Mod	el Calculations		1							
VehicleType	REMEL	Traffic Flow D	Distance	Finite	Road	Fresne	l B	arrier Atte	en Ber	m Atten
Autos:	66.51	2.63	1.2	20	-1.20	-4	4.85	0.0	000	0.000
Medium Trucks:	77.72	-14.61	1.2	22	-1.20	-{	5.01	0.0	000	0.000
Heavy Trucks:	82.99	-18.56	1.2	20	-1.20		5.34	0.0	000	0.000
Unmitigated Noise										
VehicleType	Leq Peak Hour			vening	Leq	Night	L	.dn		NEL
Autos:	69.1		-	65.5		59.4		68.1		68.7
Medium Trucks:	63.1			55.3		53.7		62.2	-	62.4
Heavy Trucks:	64.4	63.0	)	54.0		55.2		63.6	6	63.7
Vehicle Noise:	71.2	69.4	ļ	66.1		61.6		70.1		70.6
Centerline Distant	ce to Noise Cor	ntour (in feet)								
				dBA		dBA		dBA		dBA
		Ldn		61		32	-	284	-	13
		CNEL	: (	66	14	41	3	804	6	56

Friday, November 15, 2019

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGH	IWAY N	IOISE PR	EDICTIC	N MODE	ΞL			
Road Nam	io: Existing e: Barranca P nt: e/o Redhill .					Project N Job Nu	lame: Tł mber: 12		wery		
SITE	SPECIFIC IN	IPUT DATA				NO	DISE MO	DDEL	INPUTS	S	
Highway Data					Site Con	ditions (l	Hard = 1	0, Sof	<sup>t</sup> t = 15)		
Average Daily	Traffic (Adt): 3	30,090 vehicle	s				A	itos:	15		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 Ax	les):	15		
Peak H	our Volume:	3,009 vehicle	s		Hea	avy Truck	is (3+ Ax	les):	15		
Vei	hicle Speed:	50 mph		-	Vehicle I	No.					
Near/Far Lar	ne Distance:	106 feet		-		cleType		av	Evening	Night	Daily
Site Data					veni			ay 1 7.5%	12.9%	9.6%	
					1.4	edium Tru		4.8%	4.9%	10.3%	1.84%
	rier Height:	0.0 feet				leavv Tru		6.5%	2.7%	10.8%	0.74%
Barrier Type (0-W		0.0			,	icavy inc	icks. 0	0.070	2.170	10.070	0.7470
Centerline Dis		70.0 feet		1	Noise So	urce Ele	vations	(in fee	et)		
Centerline Dist. Barrier Distance		70.0 feet 0.0 feet				Autos:	2.00	0			
		5.0 feet			Mediur	n Trucks:	4.00	0			
Observer Height (	Above Pad): ad Elevation:	0.0 feet			Heav	y Trucks:	8.00	6 0	Grade Adj	ustment.	0.0
	ad Elevation: ad Elevation:	0.0 feet			Lane Equ	uivalent	Distance	ín fe	pet)		
	Road Grade:	0.0%		F	Luno Ly	Autos			,01)		
,	Left View:	-90.0 degre	00		Mediur	n Trucks:	10.01				
	Right View:	90.0 degre				y Trucks:					
FHWA Noise Mode	el Calculation:	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	I E	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.38		0.4	6	-1.20	-4	1.86	0.0	000	0.000
Medium Trucks:	81.00	-14.86		0.4	-	-1.20		5.00	0.0		0.000
Heavy Trucks:	85.38	-18.82		0.4		-1.20	-8	5.28	0.0	000	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou			Leq E	~	Leq N			Ldn	-	VEL
Autos:	71		69.9		68.2		62.1		70.7		71.4
Medium Trucks:	65		63.9		57.5		56.0		64.5		64.7
Heavy Trucks:	65		64.4		55.4		56.6		65.0	·	65.1
Vehicle Noise:	73		71.8		68.7		64.0		72.5	5	73.0
Centerline Distant	ce to Noise Co	ontour (in feet	<del>ا</del>	70	104	05.1			104		-/0.4
			I dn:		dBA	65 d			) dBA		dBA
		~	Lan: NFL:	10	03	22:	-		477 513		029
		U	NEL:	11	11	23	5	;	513	1,	105

	FHV	VA-RD-77-108	HIGH	VAY NO		ION MC	DEL			
Scenari	o: Existing				Projec	t Name:	The Bo	owery		
Road Nam	e: Barranca P	kwy.			Job I	lumber:	12282			
Road Segmer	nt: w/o Tustin I	Ranch Rd.								
SITE	SPECIFIC IN	PUT DATA						L INPUT	s	
Highway Data				Si	te Conditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 3	3,720 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10%			Medium Tr	ucks (2	Axles):	15		
Peak H	our Volume:	3,372 vehicle	s		Heavy Tru	cks (3+	Axles):	15		
Vel	nicle Speed:	50 mph		Ve	hicle Mix					
Near/Far Lar	ne Distance:	106 feet			VehicleTyp	-	Day	Evening	Night	Daily
Site Data						Autos:	77.5%	0	9.6%	
		0.0 feet			Medium 1		84.8%		10.3%	
Barrier Type (0-Wa	rier Height:	0.0 feet			Heavy 1		86.5%		10.8%	
Centerline Dis		70.0 feet								
Centerline Dist. t		70.0 feet		No	oise Source E			eet)		
Barrier Distance t		0.0 feet			Auto		.000			
Observer Height (/		5.0 feet			Medium Truck		.000			
	d Flevation:	0.0 feet			Heavy Truck	(s: 8	.006	Grade Ad	iustment.	0.0
	d Elevation:	0.0 feet		Lá	ne Equivaler	t Distar	ce (in	feet)		
	Road Grade:	0.0%			Auto		.826	,		
	Left View:	-90.0 degre	es		Medium Truck		.738			
	Right View:	90.0 degre			Heavy Truck	(s: 45	.826			
FHWA Noise Mode	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	70.20	2.87		0.46	-1.20		-4.86	0.0	000	0.00
Medium Trucks:	81.00	-14.37		0.48	-1.20		-5.00	0.0	000	0.00
Heavy Trucks:	85.38	-18.32		0.46	-1.20		-5.28	0.0	000	0.00
Unmitigated Noise			barrie	r attenua	,					
<i>,</i> ,	Leq Peak Hou			Leq Eve	•	Night		Ldn		NEL
Autos:	72		70.4		68.7	62.		71.2		71.
Medium Trucks:	65		64.4		58.0	56.		65.0		65.
Heavy Trucks:	66	-	64.9		55.9	57.		65.5		65.
Vehicle Noise:	74	-	72.3		69.2	64.	5	73.0	)	73.
Centerline Distance	e to Noise Co	ontour (in feet	)							
			1.10	70 dE		dBA	6	60 dBA		dBA
			Ldn: NFL:	111 119		239 257		515 553		110 192

	FHW	A-RD-77-108 HIC	GHWAY	NOISE PR	REDICTION	MODEL			
Road Nam	io: Existing e: MacArthur B nt: w/o Redhill /				Project Na Job Num	me: The E ber: 1228			
SITE	SPECIFIC IN	PUT DATA			NO	SE MOD	EL INPUT	s	
Highway Data				Site Con	ditions (H	ard = 10, S	Soft = 15)		
Average Daily	Traffic (Adt): 3	1,460 vehicles				Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truck	s (2 Axles)	: 15		
Peak H	our Volume:	3,146 vehicles		He	avy Trucks	(3+ Axles)	: 15		
Vei	hicle Speed:	50 mph		Vehicle	Mix				
Near/Far Lar	ne Distance:	106 feet			icleType	Day	Evening	Night	Daily
Site Data					Aut	os: 77.5	% 12.9%	9.6%	97.42
Bai	rier Heiaht:	0.0 feet		M	edium Truc	ks: 84.8	% 4.9%	10.3%	1.84
Barrier Type (0-W	all, 1-Berm):	0.0		I	Heavy Truc	ks: 86.5	% 2.7%	10.8%	0.74
Centerline Dis		70.0 feet		Noise Se	ource Elev	ations (in	feet)		
Centerline Dist.		70.0 feet			Autos:	2.000	,		
Barrier Distance		0.0 feet		Mediu	m Trucks:	4.000			
Observer Height (J	,	5.0 feet		Heav	vy Trucks:	8.006	Grade Ad	justment.	0.0
	ad Elevation:	0.0 feet							
	ad Elevation:	0.0 feet		Lane Eq	uivalent D	45.826	reet)		
	Road Grade:	0.0%		1 de - 16 -	Autos: m Trucks:	45.826			
	Left View: Right View:	-90.0 degrees 90.0 degrees			n Trucks: /y Trucks:	45.738			
FHWA Noise Mod	el Calculations								
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atter
Autos:	70.20	2.57	0.	46	-1.20	-4.86	0.0	000	0.00
Medium Trucks:	81.00	-14.67	0.4	48	-1.20	-5.00	0.0	000	0.00
Heavy Trucks:	85.38	-18.63	0.4	46	-1.20	-5.28	0.0	000	0.00
Unmitigated Noise			1	,					
	Leq Peak Hour	. ,		Evening	Leq Nig		Ldn	-	NEL
Autos:	72.			68.4		62.3	70.9	-	71
Medium Trucks:	65.			57.7		56.2	64.		64
Heavy Trucks:	66.		-	55.6		56.8	65.	-	65
Vehicle Noise:	73.		0	68.9		64.2	72.	7	73
Centerline Distant	ce to Noise Co	ntour (in feet)	70	dBA	65 dB	4	60 dBA	55	dBA
				106		~	492		060
		Ldr CNFI		106	228 245		492 528		138

	FH\	WA-RD-77-108	HIGHW	/AY NC	DISE PR	EDICTI	ON MO	DEL			
	o: Existing e: MacArthur nt: e/o Redhill					Project Job N	Name: umber:		owery		
	SPECIFIC IN	NPUT DATA							L INPUT	s	
Highway Data				S	ite Con	ditions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	25,470 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%				lium Tru		/	15		
	our Volume:	2,547 vehicle	s		Hea	avy Truc	ks (3+ )	Axles):	15		
	hicle Speed:	50 mph		V	ehicle N	lix					-
Near/Far Lar	ne Distance:	106 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	97.429
Bar	rier Height:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			н	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	70.0 feet		N	oise So	urce El	evation	s (in fe	et)		
Centerline Dist.	to Observer:	70.0 feet		E F		Autos		000			
Barrier Distance	to Observer:	0.0 feet			Modium	n Trucks		000			
Observer Height (J	Above Pad):	5.0 feet				V Trucks		006	Grade Ad	iustment	: 0.0
Pa	d Elevation:	0.0 feet									
Roa	d Elevation:	0.0 feet		L	ane Equ				feet)		
ŀ	Road Grade:	0.0%				Autos		826			
	Left View:	-90.0 degre				n Trucks		738			
	Right View:	90.0 degre	es		Heav	Y Trucks	s: 45.	826			
FHWA Noise Mode	el Calculation										-
VehicleType	REMEL	Traffic Flow	Dista		Finite I		Fresi		Barrier Att		rm Atten
Autos:	70.20			0.46		-1.20		-4.86		000	0.00
Medium Trucks:	81.00			0.48		-1.20		-5.00		000	0.00
Heavy Trucks:	85.38	-19.54		0.46		-1.20		-5.28	0.0	000	0.00
Unmitigated Noise			-								
	Leq Peak Ho	, ,		eq Eve	·	Leq	Night		Ldn	-	NEL
Autos:		1.1	69.2		67.5		61.4		70.0	-	70.
Medium Trucks:	-	1.7	63.2		56.8		55.3		63.7		64.
Heavy Trucks: Vehicle Noise:		5.1 2.8	63.7 71.1		54.6 68.0		55.9 63.3	-	64.2		64. 72
					00.0		03.	-	11.0	,	12.
Centerline Distant	ce to Noise C	ontour (in fee	2	70 dł	RA	65	HRA	F	0 dBA	55	i dBA
			I dn:	92			98		427		920
		C	NFL:	92			13		459	-	989
		0		55		2					

Friday, November 15, 2019

Friday, November 15, 2019

Friday, November 15, 2019

96

	FHV	VA-RD-77-108	HIGHV	VAY NO	DISE PF	REDICT	ION MC	DEL			
Scenario Road Name Road Segmen	e: Grand Ave.						t Name: lumber:				
SITE S	PECIFIC IN	IPUT DATA				ſ	NOISE	MODE	L INPUT	s	
Highway Data				S	ite Con	ditions	: (Hard =	: 10, S	oft = 15)		
Average Daily T Peak Hour F	Percentage:	10%					ucks (2	/	15		
	our Volume:	2,060 vehicle	s		не	avy iru	cks (3+ .	axies):	15		
	icle Speed:	45 mph		V	ehicle l	Mix					
Near/Far Lan	e Distance:	88 feet			Veh	icleType	e	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	6 97.42%
Barı	rier Heiaht:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	5 1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	6 0.74%
Centerline Dist		60.0 feet		N	oise So	ource E	levatior	s (in f	eet)		
Centerline Dist. to		60.0 feet				Auto	os: 2	000			
Barrier Distance to		0.0 feet			Mediu	m Truck	(s: 4	000			
Observer Height (A	,	5.0 feet			Heav	y Truck	(s: 8	006	Grade Adj	iustmen	t: 0.0
	d Elevation: d Elevation:	0.0 feet				uiveler	t Distan	aa (in	fa a 4)		
	a Elevation: Road Grade:	0.0 feet		2	апе су	Auto		902	ieel)		
ĸ	l eft View:	0.0%			Madiu	m Truck		.902 .804			
	Right View:	-90.0 degre 90.0 degre				ry Truck		.804 .903			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	68.46	1.19		1.20		-1.20		-4.85	0.0	000	0.000
Medium Trucks:	79.45	-16.05		1.22		-1.20		-5.01	0.0	000	0.000
Heavy Trucks:	84.25	-20.01		1.20		-1.20		-5.34	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	r attenu	ation)						
	Leq Peak Hou			Leq Eve		Leq	Night		Ldn		NEL
Autos:	69		67.8		66.0		59.	-	68.6		69.2
Medium Trucks:	63		61.9		55.5		54.		62.5		62.7
Heavy Trucks:	64	-	62.8		53.8		55.	-	63.4		63.5
Vehicle Noise:	71	.5	69.7		66.6		61.	9	70.5	5	70.9
Centerline Distance	e to Noise Co	ontour (in feet	)								
				70 dl			dBA		60 dBA		5 dBA
			Ldn:	64			39		299		644
		C	NEL:	69		1	49		321		691

Occurricy F + F		A-RD-77-108									
Scenario: E + P Road Name: News							Name: lumber:		owery		
Road Name: Newp Road Segment: n/o V						JOD N	umber:	12282			
SITE SPECIF Highway Data	IC IN	PUT DATA			ito Con		IOISE N (Hard =		L INPUTS	5	
				3	ne com	JIUOIIS	•	- ·	,		
Average Daily Traffic (A			5					Autos:	15		
Peak Hour Percenta	<b>.</b>	10%					ucks (2 A		15		
Peak Hour Volu		1,079 vehicles	5		Hea	ivy Tru	cks (3+ A	xies):	15		
Vehicle Spe		40 mph		V	ehicle N	lix					
Near/Far Lane Distar	ice:	88 feet			Vehio	cleType	9	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	97.429
Barrier Hei	aht.	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Be	, · · ·	0.0			н	leavy T	rucks:	86.5%	2.7%	10.8%	0.749
Centerline Dist. to Bar		60.0 feet		-			levation	- (l 6)	4)		
Centerline Dist, to Obser	ver:	60.0 feet		N	oise so				eet)		
Barrier Distance to Obser	ver:	0.0 feet				Auto		000			
Observer Height (Above P	ad):	5.0 feet			Mediun			000	Our de Ad		
Pad Elevat		0.0 feet			Heavy	/ Truck	s: 8.0	006	Grade Adj	ustment	. 0.0
Road Elevat	ion:	0.0 feet		L	ane Equ	ıivalen	t Distand	e (in i	feet)		
Road Gra	ade:	0.0%				Auto	s: 40.9	902			
Left V	iew:	-90.0 degree	s		Mediun	n Truck	s: 40.0	304			
Right V	iew:	90.0 degree			Heavy	γ Truck	s: 40.9	903			
FHWA Noise Model Calcu	ations	;									
VehicleType REM	EL	Traffic Flow	Di	stance	Finite I	Road	Fresn	el	Barrier Atte	en Bei	rm Atter
Autos:	6.51	-1.11		1.20		-1.20		-4.85	0.0	00	0.00
Medium Trucks:	77.72	-18.35		1.22		-1.20		-5.01	0.0	00	0.00
Heavy Trucks:	32.99	-22.30		1.20		-1.20		-5.34	0.0	00	0.00
Unmitigated Noise Levels			barri								
VehicleType Leq Pea				Leq Eve	·	Leq	Night		Ldn	-	NEL
Autos:	65.		63.5		61.7		55.7		64.3		64
Medium Trucks:	59.4		57.9		51.5		50.0		58.4		58.
Heavy Trucks:	60.	7	59.3		50.2		51.5		59.8	}	60.
Vehicle Noise:	67.4	4	65.7		62.4		57.9		66.4		66.
Centerline Distance to No	ise Co	ntour (in feet,	)								
			l	70 dł	BA		dBA	6	60 dBA		dBA
			Ldn:	34		7	74		160	3	845
			VFI :								

FHWA-RD-77-108 HI	GHWAY	T NOISE PR		IODEC			
Scenario: E + P Road Name: Redhill Ave.			Project Nam		owery		
Road Segment: n/o Walnut Ave.							
SITE SPECIFIC INPUT DATA		011 0				5	
Highway Data		Site Con	ditions (Har		,		
Average Daily Traffic (Adt): 24,020 vehicles				Autos:	15		
Peak Hour Percentage: 10%			dium Trucks (		15		
Peak Hour Volume: 2,402 vehicles		Hei	avy Trucks (3	+ Axles):	15		
Vehicle Speed: 40 mph		Vehicle I	Mix				
Near/Far Lane Distance: 88 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data			Autos	77.5%	12.9%	9.6%	97.42
Barrier Height: 0.0 feet		Me	edium Trucks	84.8%	4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Berm): 0.0		ŀ	leavy Trucks	86.5%	2.7%	10.8%	0.74
Centerline Dist. to Barrier: 60.0 feet		Noise So	ource Elevati	ons (in fe	et)		
Centerline Dist. to Observer: 60.0 feet			Autos:	2.000	.,		
Barrier Distance to Observer: 0.0 feet		Mediu	n Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet			v Trucks:	8.006	Grade Adj	ustment	0.0
Pad Elevation: 0.0 feet			,				
Road Elevation: 0.0 feet		Lane Eq	uivalent Dist		feet)		
Road Grade: 0.0%			Autos:	10.902			
Left View: -90.0 degrees		Mediur	n Trucks:	10.804			
Right View: 90.0 degrees		Heav	y Trucks:	10.903			
FHWA Noise Model Calculations		1					
	Distanc				Barrier Atte		m Atter
Autos: 66.51 2.37		1.20	-1.20	-4.85	0.0		0.00
Medium Trucks: 77.72 -14.87		1.22	-1.20	-5.01	0.0		0.00
Heavy Trucks: 82.99 -18.83	1	1.20	-1.20	-5.34	0.0	00	0.00
Unmitigated Noise Levels (without Topo and ba							
VehicleType Leq Peak Hour Leq Day	,	y Evening	Leq Night		Ldn		VEL
Autos: 68.9 67		65.2	-	9.2	67.8		68
		55.0	-	3.4	61.9		62
Medium Trucks: 62.9 61		53.7	5	5.0	63.3		63
Medium Trucks:         62.9         61           Heavy Trucks:         64.2         62					69.9		70
Medium Trucks:         62.9         61           Heavy Trucks:         64.2         62           Vehicle Noise:         70.9         69		65.9	6	1.3	03.5		
Medium Trucks:         62.9         61           Heavy Trucks:         64.2         62           Vehicle Noise:         70.9         69	.2						
Medium Trucks: 62.9 61 Heavy Trucks: 64.2 62 Vehicle Noise: 70.9 69 Centerline Distance to Noise Contour (in feet)	.2	70 dBA	65 dBA		i0 dBA	55	dBA
Medium Trucks:         62.9         61           Heavy Trucks:         64.2         62           Vehicle Noise:         70.9         69	.2 7 /n:					55 5	

ht Daily 6% 97.42' 3% 1.84' 8% 0.74'
.6% 97.42 .3% 1.84
.3% 1.849
8% 0.74
nent: 0.0
-
Berm Atter
0.00
0.00
0.00
01/5/
CNEL
68 62
62
63
63 70
70
-

Friday, November 15, 2019

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PF	REDICT	ION MOD	EL			
Scenario Road Name Road Segmen	e: Redhill Ave						Name: T lumber: 1		owery		
SITE S	SPECIFIC IN	IPUT DATA							L INPUTS		
Highway Data				S	ite Con	ditions	(Hard = 1	0, So	oft = 15)		
Average Daily T Peak Hour F Peak Ho	, ,	24,070 vehicles 10% 2,407 vehicles					A ucks (2 Ax cks (3+ Ax		15 15 15		
Veh	nicle Speed:	45 mph		V	ehicle	Miz					
Near/Far Lan	e Distance:	88 feet				icleType		)av	Evening I	Night	Daily
Site Data					ven			7.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			M	edium T	rucks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			I	Heavy T	rucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	60.0 feet			loise Si	ource F	levations	(in fe	et)		
Centerline Dist. te	o Observer:	60.0 feet			0.00 01	Auto					
Barrier Distance to	o Observer:	0.0 feet			Modiu	m Truck					
Observer Height (A	Above Pad):	5.0 feet				v Truck			Grade Adjus	stment:	0.0
	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		L	ane Eq		t Distance		eet)		
R	Road Grade:	0.0%				Auto		-			
	Left View:	-90.0 degree				m Truck					
	Right View:	90.0 degree	S		Heav	y Truck	s: 40.9	)3			
FHWA Noise Mode	el Calculation	s		- 1							
VehicleType	REMEL	Traffic Flow	Distar	ice	Finite	Road	Fresne	1	Barrier Atter	n Ber	m Atten
Autos:	68.46	1.86		1.20		-1.20	-	4.85	0.00	0	0.000
Medium Trucks:	79.45	-15.37		1.22		-1.20		5.01	0.00	-	0.000
Heavy Trucks:	84.25	-19.33		1.20		-1.20	-	5.34	0.00	0	0.000
Unmitigated Noise										_	
,1	Leq Peak Hou			eq Ev	ening	Leq	Night		Ldn	CI	VEL
Autos:	70		68.4		66.7		60.6		69.2		69.8
Medium Trucks:	64		62.6		56.2		54.7		63.1		63.4
Heavy Trucks:	64		33.5		54.5		55.7		64.1		64.2
Vehicle Noise:	72		70.4		67.3		62.6		71.1		71.6
Centerline Distanc	e to Noise Co	ontour (in feet)	-	70.1		05	10.4				10.4
			dn:	70 di			dBA	6	0 dBA		dBA
		-	_an: IEL:	71			54		332		15
		Ch	IEL.	77		1	65		356	/	66

	FHW	A-RD-77-108 HI	GHWA	/ NOISE PF	REDICTIO				
	o: E + P					Vame: The			
Road Nam	e: Redhill Ave.				Job Nu	mber: 122	82		
Road Segmer	nt: s/o Valcenci	a Ave.							
	SPECIFIC IN	PUT DATA					DEL INPUT	s	
Highway Data				Site Con	ditions (	Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 2	7,930 vehicles				Auto	os: 15		
Peak Hour	Percentage:	10%		Me	dium Tru	cks (2 Axle	s <i>):</i> 15		
Peak H	our Volume:	2,793 vehicles		He	avy Truci	s (3+ Axle	s): 15		
Vel	hicle Speed:	50 mph		Vehicle I	Mar				
Near/Far Lar	ne Distance:	88 feet				Da	/ Evening	Night Da	aily
Site Data				ven	icleType	utos: 77	v	9.6% 97.4	
					A dium Tri				849
	rier Height:	0.0 feet							.04 .74
Barrier Type (0-W		0.0		,	Heavy Tru	ICKS: 80.	0% Z.7%	10.8% 0.	74
Centerline Dis		60.0 feet		Noise So	ource Ele	vations (ii	1 feet)		-
Centerline Dist.		60.0 feet			Autos	2.000			-
Barrier Distance		0.0 feet		Mediur	m Trucks	4.000			
Observer Height (J		5.0 feet		Heav	v Trucks	8.006	Grade Ad	justment: 0.0	J.
	d Elevation:	0.0 feet							
	d Elevation:	0.0 feet		Lane Eq		Distance (	,		
F	Road Grade:	0.0%			Autos				
	Left View:	-90.0 degrees			m Trucks				
	Right View:	90.0 degrees		Heav	ry Trucks	40.903			
FHWA Noise Mode	el Calculations			1					
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Att	ten Berm At	tter
Autos:	70.20	2.05	1	1.20	-1.20	-4.8	35 0.0	000 0	0.00
Medium Trucks:	81.00	-15.19	1	1.22	-1.20	-5.0	)1 0.0	000 0	0.00
Heavy Trucks:	85.38	-19.14	1	1.20	-1.20	-5.3	84 0.0	000 0	0.00
Unmitigated Noise	e Levels (witho	ut Topo and ba	rrier at	tenuation)					
VehicleType	Leq Peak Hou			Evening	Leq N	•	Ldn	CNEL	
Autos:	72.	3 70	.4	68.6		62.5	71.	2	71.
Medium Trucks:	65.	8 64	.3	58.0		56.4	64.9	9	65
Heavy Trucks:	66.	2 64	.8	55.8		57.0	65.4	4	65
Vehicle Noise:	74.	0 72	.2	69.2		64.4	72.	9	73
0 · // D/ ·	e to Noise Co	ntour (in feet)							-
Centerline Distance			7	'0 dBA	65 a	BA	60 dBA	55 dBA	- T
Centerline Distant									
Centerline Distand		Ld CNF		94	20	3	436	940	

	FHV	NA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTI	ON MOD	EL		_	_
Scenar	io: E + P					Project	Name: T	he Bo	wery		
Road Nam	e: Redhill Ave	e.				Job N	umber: 1	2282			
Road Segme	nt: s/o Warner	r Ave.									
	SPECIFIC IN	IPUT DATA			o				INPUTS		
Highway Data					Site Con	ditions	(Hard = 1	- ·	,		
Average Daily	. ,		s					utos:	15		
	Percentage:	10%					icks (2 Ax		15		
	our Volume:	3,475 vehicle	s		Hea	avy Truc	:ks (3+ A)	des):	15		
	hicle Speed:	50 mph			Vehicle I	Nix					
Near/Far La	ne Distance:	88 feet			Vehi	cleType	L	Day	Evening	Night	Daily
Site Data						A	Autos: 7	7.5%	12.9%	9.6%	97.42%
Bai	rrier Height:	0.0 feet			Me	edium Tr	ucks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			F	leavy Tr	ucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis	st. to Barrier:	60.0 feet			Noise Sc	urco El	evations	(in fo	of)		
Centerline Dist.	to Observer:	60.0 feet		Ľ,	10/30 00	Autos			01)		
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks					
Observer Height (	Above Pad):	5.0 feet				y Trucks			Grade Adjı	istment	0.0
Pa	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		1	Lane Equ		Distance		eet)		
1	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degree				n Trucks					
	Right View:	90.0 degree	es		Heav	y Trucks	8: 40.9	03			
FHWA Noise Mod	el Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresne	el E	Barrier Atte	n Ber	m Atten
Autos:	70.20	3.00		1.20	0	-1.20	-	4.85	0.00	00	0.000
Medium Trucks:	81.00	-14.24		1.2	2	-1.20	-	5.01	0.00	00	0.000
Heavy Trucks:	85.38	-18.19		1.20	0	-1.20	-	5.34	0.00	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			Leg Ev	~	Leq	Night		Ldn	CI	VEL
Autos:			71.3		69.5		63.5		72.1		72.7
Medium Trucks:	66		65.3		58.9		57.4		65.8		66.1
Heavy Trucks:			65.8		56.7		58.0		66.3		66.5
Vehicle Noise:	74	1.9	73.2		70.1		65.3		73.9		74.3
Centerline Distant	ce to Noise C	ontour (in feet	)								
			L	70 0		65 (			0 dBA		dBA
			I dn:						505		087
			Lan: NFL :	11	9	23			505 542		168

Scenar	<i>io:</i> E + P					Project	Name:	The B	owery				
Road Nam	ne: Redhill Ave					Job N	umber:	12282					
Road Segme	nt: n/o Carnegi	e Ave.											
	SPECIFIC IN	PUT DATA								s			
Highway Data					Site Con	ditions	(Hard :	= 10, S	oft = 15)				
Average Daily	Traffic (Adt): 3	5,710 vehicle	s					Autos:	15				
Peak Hour	Percentage:	10%			Me	dium Tru	ıcks (2	Axles):	15				
Peak H	lour Volume:	3,571 vehicle	s		He	avy Truc	:ks (3+	Axles):	15				
Ve	hicle Speed:	50 mph			Vehicle I	Mix							
Near/Far La	ne Distance:	88 feet		-		icleType		Day	Evening	Night	Daily		
Site Data							Autos:	77.5%	v	9.6%			
Po	rrier Height:	0.0 feet			Me	edium Ti	rucks:	84.8%		10.3%	1.84%		
Barrier Type (0-W		0.0			ŀ	leavy Ti	rucks:	86.5%	2.7%	10.8%	0.74%		
Centerline Dis		60.0 feet											
Centerline Dist.		60.0 feet		4	Noise So				eet)				
Barrier Distance		0.0 feet				Auto		.000					
Observer Height (		5.0 feet				n Truck		.000					
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8	.006	Grade Adj	ustment:	0.0		
	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distar	ıce (in	feet)				
	Road Grade:	0.0%		F		Auto		902	,				
	Left View:	-90.0 degree	29		Mediu	n Truck	s: 40	.804					
	Right View:	90.0 degree			Heav	y Truck	s: 40	.903					
EHWA Noiso Mod	lol Calculation	•											
FHWA Noise Mod VehicleType	el Calculation REMEL	s Traffic Flow	Dista	ince	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten		
	REMEL		Dista	nce 1.2		Road -1.20	Fres	nel -4.85		en Ber			
VehicleType	REMEL 70.20	Traffic Flow	Dista		0		Fres		0.0		0.00		
VehicleType Autos:	REMEL 70.20 81.00	Traffic Flow 3.12	Dista	1.2	0	-1.20	Fres	-4.85	0.0	000	0.00		
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	Traffic Flow 3.12 -14.12 -18.07		1.2 1.2 1.2	0 2 0	-1.20 -1.20	Fres	-4.85 -5.01	0.0	000	0.00		
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 70.20 81.00 85.38	<i>Traffic Flow</i> 3.12 -14.12 -18.07 <i>Dut Topo and</i>	barrier	1.20 1.22 1.20 <b>atten</b>	0 2 0	-1.20 -1.20 -1.20	Fres	-4.85 -5.01	0.0	000	0.00		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou	Traffic Flow           3.12           -14.12           -18.07           Dut Topo and           r         Leq Day	barrier	1.20 1.22 1.20 <b>atten</b>	0 2 0 <b>uation)</b>	-1.20 -1.20 -1.20		-4.85 -5.01 -5.34	0.0 0.0 0.0	000 000 000 <i>CI</i>	0.00 0.00 0.00		
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 70.20 81.00 85.38 e Levels (without Leq Peak Hout 73	Traffic Flow           3.12           -14.12           -18.07           Dut Topo and           r           Leq Day           3	barrier	1.20 1.22 1.20 <b>atten</b>	0 2 0 wation) vening	-1.20 -1.20 -1.20	Night	-4.85 -5.01 -5.34	0.0 0.0 0.0	2000 000 000 <i>CI</i> 2	0.000 0.000 0.000 VEL 72.8		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 70.20 81.00 85.38 e Levels (with Leq Peak Hou 73 66	Traffic Flow           3.12           -14.12           -18.07           Dut Topo and           r           Leq Day           3           9	barrier / L 71.4	1.20 1.22 1.20 <b>atten</b>	0 2 0 <i>wening</i> 69.7	-1.20 -1.20 -1.20	Night 63	-4.85 -5.01 -5.34 .6 .5	0.0 0.0 0.0 <i>Ldn</i> 72.2	2 2 2 2 3	0.000 0.000 0.000 VEL 72.8 66.2		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks:	REMEL 70.20 81.00 85.38 e Levels (with Leg Peak Hou 73 66	Traffic Flow           3.12           -14.12           -18.07           Dut Topo and           r           Leq Day           3           9           3	barrier / L 71.4 65.4	1.20 1.22 1.20 <b>atten</b>	0 2 0 <i>vening</i> 69.7 59.0	-1.20 -1.20 -1.20	Night 63. 57.	-4.85 -5.01 -5.34 6 5 1	0.0 0.0 0.0 <i>Ldn</i> 72.2 65.9	2 2 2 5	0.00 0.00 0.00 VEL 72.: 66.: 66.:		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL           70.20           81.00           85.38           e Levels (with           Leq Peak Hou           73           66           67           75	Traffic Flow           3.12           -14.12           -18.07           Dut Topo and           r           Leq Day           3           9           3           0	barrier / L 71.4 65.4 65.9 73.3	1.2 1.2 1.2 <i>atten</i>	0 2 0 <i>vening</i> 69.7 59.0 56.9 70.2	-1.20 -1.20 -1.20 <i>Leq</i>	Night 63 57 58 65	-4.85 -5.01 -5.34 6 5 1 4	0.0 0.0 0.0 72.2 65.9 66.5 74.0	000 000 000 22 00 5 0	0.000 0.000 0.000 VEL 72.3 66.3 66.3 74.3		
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL           70.20           81.00           85.38           e Levels (with           Leq Peak Hou           73           66           67           75	Traffic Flow           3.12           -14.12           -18.07           Dut Topo and           r           Leq Day           3           9           3           0	barrier 71.4 65.4 65.9 73.3	1.20 1.22 1.20 <b>atten</b> .eq Ev	0 2 0 <i>wation)</i> <i>vening</i> 69.7 59.0 56.9 70.2	-1.20 -1.20 -1.20 Leq	Night 63. 57. 58. 65. dBA	-4.85 -5.01 -5.34 6 5 1 4	0.0 0.0 0.0 72.2 65.9 66.5 74.0	000 000 2000 22 35 55 55	0.000 0.000 0.000 VEL 72.8 66.2 66.6 74.3		
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL           70.20           81.00           85.38           e Levels (with           Leq Peak Hou           73           66           67           75	Traffic Flow           3.12           -14.12           -18.07           Dut Topo and r           Leq Day           3           9           3           0           mtour (in feet)	barrier / L 71.4 65.4 65.9 73.3	1.2 1.2 1.2 <i>atten</i>	0 2 0 <i>wation)</i> <i>vening</i> 69.7 59.0 56.9 70.2 <i>dBA</i> 11	-1.20 -1.20 -1.20 <i>Leq</i> 65	Night 63 57 58 65	-4.85 -5.01 -5.34 6 5 1 4	0.0 0.0 0.0 72.2 65.9 66.5 74.0	000 000 000 22 00 55 1,	0.000 0.000 0.000 VEL 72.8 66.2 66.6 74.8		

Friday, November 15, 2019

Friday, November 15, 2019

98

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PREDIC		DEL			
Scenario						t Name:		wery		
	e: Redhill Ave				Job	Number:	12282			
Road Segment	r: s/o Carneg	le Ave.								
	PECIFIC IN	IPUT DATA						INPUTS	5	
Highway Data				1	Site Condition:	s (Hard =	10, Sof	't = 15)		
Average Daily T	, ,		s				Autos:	15		
Peak Hour P		10%			Medium T		,	15		
	our Volume:	3,488 vehicle	s		Heavy Tru	ıcks (3+ A	(xles):	15		
	icle Speed:	50 mph		1	Vehicle Mix					
Near/Far Lan	e Distance:	88 feet			VehicleTyp	е	Day	Evening	Night	Daily
Site Data						Autos:	77.5%	12.9%	9.6%	97.42%
Barr	ier Height:	0.0 feet			Medium	Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	II, 1-Berm):	0.0			Heavy	Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist	to Barrier:	60.0 feet			Noise Source I	levation	s (in fe	of)		
Centerline Dist. to	o Observer:	60.0 feet		-	Aut		200			
Barrier Distance to	o Observer:	0.0 feet			Medium Truc		000			
Observer Height (A	,	5.0 feet			Heavy Truc	ks: 8.0	006 (	Grade Adj	ustment:	0.0
	d Elevation:	0.0 feet								
	d Elevation:	0.0 feet		-	Lane Equivale			eet)		
R	oad Grade:	0.0%			Aut Medium Truc					
	Left View:	-90.0 degre			Heavy Truc					
	Right View:	90.0 degre	es		neavy nuc	NS. 40.	503			
FHWA Noise Mode		-				-				
VehicleType Autos:	REMEL 70.20	Traffic Flow 3.02	Dista	1.20	Finite Road	Frest	-4.85	Barrier Atte 0.0		m Atten 0.00
Medium Trucks:	81.00	0.02		1.20			-4.05	0.0		0.00
Heavy Trucks:	85.38			1.20			-5.34	0.0		0.00
Unmitigated Noise			harrier :	atten	uation)					
	Leg Peak Hou					Night		Ldn	CI	VEL
Autos:	,		71.3	.,	69.6	63.5	5	72.1	-	72.
Medium Trucks:	66	6.8	65.3		58.9	57.4	Ļ	65.8		66.
Heavy Trucks:	67	.2	65.8		56.7	58.0	)	66.4		66.
Vehicle Noise:	74	1.9	73.2		70.1	65.3	3	73.9	)	74.
Centerline Distance	e to Noise C	ontour (in feet	)							
				70 c		ō dBA		) dBA		dBA
			Ldn:	10	10	235		506	1	090
			NEL:	11		252		544	1,7	

Fi	WA-RD-77-108	B HIGHW	AY NOISE P	REDICTION	MODEL					
Scenario: E + P Road Name: Redhill A Road Segment: n/o Barra			Project Name: The Bowery Job Number: 12282							
SITE SPECIFIC	INPUT DATA			NOI	SE MODE	L INPUT	s			
Highway Data			Site Cor	nditions (Ha	ard = 10, S	oft = 15)				
Average Daily Traffic (Adt):	35,550 vehicle	es			Autos:	15				
Peak Hour Percentage:	10%		Me	dium Truck	s (2 Axles):	15				
Peak Hour Volume:	3,555 vehicle	es	He	avy Trucks	(3+ Axles):	15				
Vehicle Speed:	50 mph		Vehicle	Mis						
Near/Far Lane Distance:	106 feet			nicleType	Dav	Evening	Night	Daily		
Site Data			ver	Aute		•	9.6%			
			-	ledium Truci			10.3%	1.849		
Barrier Height:				Heavy Truci			10.3%			
Barrier Type (0-Wall, 1-Berm):				neavy muci	NS. 00.07	2.170	10.070	0.747		
Centerline Dist. to Barrier:	70.0 feet		Noise S	ource Eleva	ations (in f	eet)				
Centerline Dist. to Observer:	70.0 feet 0.0 feet			Autos:	2.000					
Barrier Distance to Observer:			Mediu	m Trucks:	4.000					
Observer Height (Above Pad): Pad Elevation:			Hea	vy Trucks:	8.006	Grade Adj	ustment:	0.0		
Road Elevation:			Lane Fo	uivalent Di	stance (in	feet)				
Road Grade:	0.0 1001		Lano Lq	Autos:	45.826	1001)				
Left View	0.070	000	Mediu	m Trucks:	45.738					
Right View:	oolo aogia			vy Trucks:	45.826					
FHWA Noise Model Calculation										
VehicleType REMEL	Traffic Flow	Distar			Fresnel	Barrier Att		m Atten		
Autos: 70.2			0.46	-1.20	-4.86		000	0.00		
Medium Trucks: 81.0			0.48	-1.20	-5.00		000	0.00		
Heavy Trucks: 85.3	8 -18.09	)	0.46	-1.20	-5.28	0.0	000	0.00		
Unmitigated Noise Levels (wi			,							
VehicleType Leq Peak H		,	eq Evening	Leq Nig		Ldn		VEL		
	72.6	70.7	68.9		62.8	71.5		72.		
	6.1	64.6	58.3		56.7	65.2		65.		
	6.5	65.1	56.1		57.3	65.7		65.		
Vehicle Noise:	74.3	72.5	69.5		64.7	73.2	2	73.		
Centerline Distance to Noise	Contour (in fee	t)		T.						
			70 dBA	65 dB/	4 (	60 dBA		dBA		
		Ldn:	115	248		534		149		
		NFL:	123	266		573		235		

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: E + P Project Name: The Bowery Road Name: Redhill Ave Job Number: 12282 Road Segment: s/o Barranca Pkwy SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Highway Data Autos: 15 Average Daily Traffic (Adt): 34,330 vehicles Peak Hour Percentage: 10% Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 3.433 vehicles Peak Hour Volume: 15 Vehicle Speed: 50 mph Vehicle Mix Near/Far Lane Distance: 
 VehicleType
 Day
 Evening
 Night
 Daily

 Autos:
 77.5%
 12.9%
 9.6%
 97.42%

 Medium Trucks:
 84.8%
 4.9%
 10.3%
 1.84%

 Heavy Trucks:
 86.5%
 2.7%
 10.8%
 0.74%
 106 feet Site Data Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): Centerline Dist. to Barrier: 0.0 70.0 feet Noise Source Elevations (in feet) Centerline Dist. to Observer: 70.0 feet Autos: 2.000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 4.000 Observer Height (Above Pad): 5.0 feet Heavy Trucks: Grade Adjustment: 0.0 8.006 Pad Elevation: 0.0 feet 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: Road Grade: Left View: 0.0% -90.0 degrees Autos: 45.826 Medium Trucks: 45.738 Right View: 90.0 degrees Heavy Trucks: 45.826 FHWA Noise Model Calculations 
 VehicleType
 REMEL
 Traffic Flow
 Distance
 Finite Road
 Fresnet
 Barrier Atten
 Berm Atten

 Autos:
 70.20
 2.95
 0.46
 -1.20
 -4.86
 0.000
 0.000
 0.000 Medium Trucks: 81.00 85.38 -14.29 0.48 -1.20 -1.20 -5.00 -5.28 0.000 0.000 -18.25 0.000 0.46 0.000 Heavy Trucks: Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Autos: 72.4 Medium Trucks: 66.0 CNEL Leq Day 70.5 Leq Evening 5 68.8 Leq Night Ldn 62.7 71.3 64.5 58.1 56.6 65.0 Heavy Trucks: 66.4 65.0 55.9 57.2 65.5

-		-RD-77-108									
Scenario: E							Name: 1		owery		
Road Name: F						Job N	lumber: 1	2282			
Road Segment: r	/o MacArthu	r Bivd.									
	CIFIC INP	UT DATA							L INPUTS	5	
Highway Data				S	lite Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Trafi	ic (Adt): 48	,100 vehicles					A	Autos:	15		
Peak Hour Perc	entage:	10%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour	Volume: 4	,810 vehicles			He	avy Tru	cks (3+ A	xles):	15		
Vehicle	Speed:	50 mph		v	ehicle l	Mix					
Near/Far Lane D	istance:	88 feet		-		icleType		Dav	Evening	Night	Daily
Site Data								77.5%	~	9.6%	
	Height:	0.0 feet			Me	edium T		34.8%		10.3%	
Barrier Type (0-Wall, 1		0.0			ŀ	leavv T	rucks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dist, to		60.0 feet									
Centerline Dist. to O		60.0 feet		٨	loise Sc		levations		eet)		
Barrier Distance to O		0.0 feet				Auto					
Observer Height (Abo		5.0 feet				m Truck					
	evation:	0.0 feet			Heav	ry Truck	s: 8.0	06	Grade Adj	ustment.	: 0.0
	evation:	0.0 feet		L	ane Eq	uivalen	t Distanc	e (in t	feet)		
	d Grade:	0.0%				Auto					
1	aft View:	-90.0 dearee	s		Mediur	m Truck	s: 40.8	04			
Rig	ht View:	90.0 degree	s		Heav	ry Truck	s: 40.9	03			
FHWA Noise Model Ca	alculations										
VehicleType F	REMEL 7	raffic Flow	Distar	псе	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	4.41		1.20		-1.20		4.85	0.0		0.00
Medium Trucks:	81.00	-12.83		1.22		-1.20		-5.01	0.0		0.00
Heavy Trucks:	85.38	-16.78		1.20		-1.20		5.34	0.0	00	0.00
Unmitigated Noise Le											
, ,	Peak Hour	Leq Day		eq Ev	·	Leq	Night		Ldn		NEL
Autos:	74.6		72.7		71.0		64.9		73.5		74.
	68.2		6.7		60.3		58.8		67.2		67.
Medium Trucks:	0.5 -		37.2		58.1		59.4		67.7		67.
Heavy Trucks:	68.6				71.5		66.7		75.3		75.
Heavy Trucks: Vehicle Noise:	76.3		74.6		/1.5						
Heavy Trucks: Vehicle Noise:	76.3			70			-/DA		0.404		-10.4
Heavy Trucks: Vehicle Noise:	76.3	tour (in feet)		70 d	BA	65	dBA	6	0 dBA		dBA
Heavy Trucks:	76.3	tour (in feet)		70 d 13	BA 5	65 2	<i>dBA</i> 91 13	6	0 dBA 627 673	1,	<i>dBA</i> 350 451

Friday, November 15, 2019

Vehicle Noise:

74.1

Centerline Distance to Noise Contour (in feet)

72.4

Ldn:

CNEL:

69.3

70 dBA

112

121

64.5

65 dBA

242

260

73.1

60 dBA

521

560

Friday, November 15, 2019

Friday, November 15, 2019

71.9

65.3

65.7

73.5

55 dBA

1.123

1,207

	FHW	A-RD-77-108 F	IIGHWA	Y NOI	SE PR	EDICTIO	N MOD	DEL			
Road Nam	io: E + P ne: Redhill Ave. nt: s/o MacArthu	ur Blvd.				Project N Job Nui			owery		
SITE	SPECIFIC INF	PUT DATA				NC	DISE N	IODE	L INPUT	s	
Highway Data				Sit	e Cond	litions (F	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 21	1,870 vehicles					A	Autos:	15		
Peak Hour	Percentage:	10%			Mea	lium Truc	:ks (2 A	xles):	15		
Peak H	our Volume: 2	2,187 vehicles			Hea	vy Truck	s (3+ A	xles):	15		
Vei	hicle Speed:	50 mph		Ve	hicle N	lix					
Near/Far Lar	ne Distance:	36 feet				cleType		Day	Evening	Night	Daily
Site Data					10/110			77.5%		9.6%	
Pa	rrier Heiaht:	0.0 feet			Me	dium Tru	cks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			н	eavy Tru	cks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		40.0 feet		A/-	0	urce Ele			- 41		
Centerline Dist.	to Observer:	40.0 feet		NO	ise so	Autos:			et)		
Barrier Distance	to Observer:	0.0 feet			Madium	Autos: Trucks:					
Observer Height (J	Above Pad):	5.0 feet				/ Trucks. / Trucks:			Grade Adj	iustmont	
Pa	ad Elevation:	0.0 feet								usincin	0.0
Roa	ad Elevation:	0.0 feet		Lai	ne Equ	ivalent L		e (in f	'eet)		
I	Road Grade:	0.0%				Autos:	00.0				
	Left View:	-90.0 degrees	3			n Trucks:					
	Right View:	90.0 degrees	6		Heavy	/ Trucks:	35.8	347			
FHWA Noise Mode	el Calculations										
VehicleType	REMEL	Traffic Flow	Distand	e	Finite I	Road	Fresn	el .	Barrier Att	en Ber	m Atten
Autos:	70.20	0.99		2.06		-1.20		4.83	0.0	000	0.000
Medium Trucks:	81.00	-16.25		2.08		-1.20		-5.08		000	0.000
Heavy Trucks:	85.38	-20.20		2.06		-1.20		-5.56	0.0	000	0.000
Unmitigated Noise			arrier at	tenua	tion)						
VehicleType	Leq Peak Hour			g Ever	~	Leq N			Ldn		NEL
Autos:	72.1		0.2		68.4		62.3		71.0	-	71.6
Medium Trucks:	65.6		4.1		57.8		56.2		64.7		64.9
Heavy Trucks:	66.0		4.6		55.6		56.8		65.2	-	65.3
Vehicle Noise:	73.8	, .	2.0		69.0		64.2		72.7	(	73.2
Centerline Distant	ce to Noise Cor	ntour (in feet)		70 40		CE -"	DA.		O dBA		dD A
		,	dn:	70 dB/ 61	4	65 dE		6	0 dBA 282		dBA 107
		CN		65		131			303	-	607 153
		CIV		00		14			303	C	55

		/A-RD-77-108	mon							
	<i>io:</i> E + P						Name: Th			
	e: Valencia Av					Job N	umber: 12	282		
Road Segme	nt: w/o Redhill	Ave.								
	SPECIFIC IN	PUT DATA						DEL INPUT	S	
Highway Data				5	Site Con	ditions	(Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt):	8,030 vehicles	\$					tos: 15		
Peak Hour	Percentage:	10%					icks (2 Axle	,		
Peak H	lour Volume:	803 vehicles	5		Hea	avy Truc	ks (3+ Axle	əs): 15		
Ve	hicle Speed:	45 mph		1	/ehicle I	Mix				
Near/Far La	ne Distance:	36 feet		E F		icleType	Da	evening	Night	Daily
Site Data								.5% 12.9%	9.6%	
Ba	rrier Height:	0.0 feet			Me	edium Ti	ucks: 84	.8% 4.9%	10.3%	1.84
Barrier Type (0-W		0.0			F	leavy Ti	ucks: 86	.5% 2.7%	10.8%	0.74
Centerline Di	. ,	40.0 feet					evations (	(m. f 4)		
Centerline Dist.	to Observer:	40.0 feet		<i>r</i>	voise Sc	Auto:				
Barrier Distance	to Observer:	0.0 feet			Ma dian	n Truck				
Observer Height (	Above Pad):	5.0 feet								0.0
P	ad Elevation:	0.0 feet			Heav	y Truck	S: 8.00t	Grade Adj	usunem.	0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	uivalen	Distance	(in feet)		
	Road Grade:	0.0%				Auto	s: 35.84	7		
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 35.73	5		
	Right View:	90.0 degree	s		Heav	y Truck	35.84	7		
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atter
Autos:	68.46	-2.90		2.06	6	-1.20	-4.	83 0.0	000	0.00
Medium Trucks:	79.45	-20.14		2.08	3	-1.20	-5.	08 0.0	000	0.00
Heavy Trucks:	84.25	-24.10		2.06	6	-1.20	-5.	56 0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	er atten	uation)					
VehicleType	Leq Peak Hou			Leq Ev	· ·	Leq	Night	Ldn		VEL
Autos:			64.5		62.8		56.7	65.3		65
Medium Trucks:			58.7		52.3		50.8	59.2	-	59
Heavy Trucks:			59.6		50.6		51.8	60.2	-	60
Vehicle Noise:		-	6.5		63.4		58.7	67.2	2	67
Centerline Distan	ce to Noise Co	ontour (in feet)								
			L	70 a			dBA	60 dBA		dBA
			Ldn:	26	5	5	6	121	2	61
			IFI :	28			0	130		80

c (Adt): entage:					Project N Job Nur			wery		
o Redhill A CIFIC IN c (Adt): entage:	Ave.				Job Nur	nber: 12	2282			
CIFIC IN c (Adt): entage:	PUT DATA									
c (Adt): entage:										
entage:	0.050							INPUTS	5	-
entage:				Site Con	ditions (F	lard = 1	0, Sol	,		
	9,650 venicie	s					utos:	15		
	10%				lium Truc		,	15		
'olume:	965 vehicle	s		Hea	avy Truck	s (3+ Ax	les):	15		
Speed:	45 mph		-	Vehicle I	Aix					
stance:	36 feet		-	Vehi	cleType	D	ay 🛛	Evening	Night	Daily
					Au	tos: 7	7.5%	12.9%	9.6%	97.429
Heiaht:	0.0 feet			Me	dium Tru	cks: 8	4.8%	4.9%	10.3%	1.84%
•	0.0			F	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
	40.0 feet			Noise So	urce Elev	ations	(in fee	et)		-
server:	40.0 feet		-					. ,		
server:	0.0 feet			Mediur						
e Pad):	5.0 feet							Grade Adi	ustment.	0.0
evation:	0.0 feet									
			Ļ	Lane Equ				eet)		
nt View:	90.0 degre	es		Heav	y Trucks:	35.84	17			
lculation	s									
	Traffic Flow									m Atten
										0.00
										0.00
84.25	-23.30		2.0	)6	-1.20	-8	5.56	0.0	00	0.00
			Leq E	•	Leq N	•				VEL 66.
	-									60.
										61.
										68.
				64.Z		59.5		68.0	,	68.
Noise Co	ontour (in fee	t)	70	dBA	65 40	RA	6/	) dBA	55	dBA
		I dn								96
	~		-							90 17
	Height: Berm): Berrer: server: e Pad): evation: Grade: ft View: Iculation: EMEL 68.46 79.45 84.25 els (with Peak Hou 67 61 61 61	Height:         0.0 feet           .Barm):         0.0           Barrier:         40.0 feet           server:         40.0 feet           server:         0.0 feet           vation:         0.0 feet           grade:         0.0%           ft View:         90.0 degre           tculations         EMEL           Traffic Flow         68.46           68.45         -2.11           79.45         -19.34           84.25         -20.30           Peak Hour         Leq Da           67.2         61.0           61.8         69.1           Noise Contour (in feer	Height:         0.0 feet           .Berm):         0.0           Barrier:         40.0 feet           server:         40.0 feet           server:         0.0 feet           server:         0.0 feet           server:         0.0 feet           eradi:         5.0 feet           evation:         0.0 feet           grade:         0.0%           ft View:         -90.0 degrees           totalistic         Dis           68.46         -2.11           79.45         -19.34           84.25         -23.30           efels (without Topo and barrite           Peak Hour         Leq Day           67.2         65.3           61.0         59.5           61.8         60.4	Height:         0.0         feet           .Berm):         0.0         Barrier:         40.0         feet           .Bernier:         40.0         feet         server:         60.0           server:         0.0         feet         server:         server:         60.0           server:         0.0         feet         server:         server:         server:         60.0         feet           vation:         0.0         feet         server:         server:         server:         server:         server:         server:         server:         server:         servere:         server:         serve	Height:         0.0 feet         Me           Barrier:         0.0 feet         Noise So           Barrier:         40.0 feet         Mediur           e Pad):         5.0 feet         Mediur           server:         0.0 feet         Mediur           e Pad):         5.0 feet         Mediur           vation:         0.0 feet         Lane Eq           Grade:         0.0%         Mediur           tf View:         90.0 degrees         Mediur           tview:         90.0 degrees         Mediur           tculations         EMEL         Traffic Flow         Distance           Finite         68.46         -2.11         2.06           rels (without Topo and barrier attenuation)         Peek Hour         Leq Day         Leq Evening           67.2         65.3         63.6         61.0         59.5         53.1           61.8         60.4         51.4         69.1         67.3         64.2           Noise Contour (in feet)         To dBA         2.06         2.06	Image: Constraint of the	Venicelype         L           Autos:         7           Autos:         7           Medium Trucks:         8           Barrier:         40.0 feet           Barrier:         40.0 feet           server:         40.0 feet           server:         40.0 feet           server:         40.0 feet           vation:         0.0 feet           vation:         0.0 feet           Grade:         0.0%           It View:         90.0 degrees           Medium Trucks:         35.8           Iculations         EMEL           EMEL         Traffic Flow           Distance         Finite Road           68.46         -2.11         2.06           -1.20         -4           84.25         -23.30         2.06           -12.0         -4           els (without Topo and barrier attenuation)           Peak Hour         Leq Day         Leq Evening           Peak Hour         Leg Day         Leq Evening           67.2         65.3         63.6         57.5           61.0         59.5         53.1         51.6           69.1         67.3         64.	Venicle i ye         Day           Height:         0.0 feet           Barrier:         0.0 feet           Bernier:         0.0 feet           Pad):         5.0 feet           vation:         0.0 feet           Grade:         0.0%           Heigy Trucks:         35.06 feet           Veriation:         0.0 feet           Grade:         0.0%           Mutox:         35.735           Heavy Trucks:         35.735           Heavy Trucks:         35.847           Medium Trucks:         35.847           Medium Trucks:         35.847           Medium Trucks:         35.847           Iculations         Emet           EMEL         Traffic Flow           Distance         Finite Road           68.46         -2.11         2.06           -2.330         2.06         -1.20           els (without Topo and barrier attenuation)         Feek Ho	Venicle type         Day         Levening           Autos:         77.5%         12.9%           Medium Trucks:         84.8%         4.9%           Barrier:         0.0         Barrier:         86.7%           Barrier:         40.0 feet         Moise Source Elevations (in feet)           Autos:         2.000         Medium Trucks:         8.006           Bernier:         0.0 feet         Autos:         4.000           Pad]:         5.0 feet         Medium Trucks:         8.006           Server:         0.0 feet         Autos:         3.000           Grade:         0.0%         Medium Trucks:         35.847           Itview:         90.0 degrees         Heavy Trucks:         35.847           Itview:         90.0 degrees         1.20         -4.83         0.0           79.45         -19.34         2.08         -1.20         -5.08         0.0<	Venice type         Day         Levening         Wight           Autos:         77.5%         12.9%         9.6%           Berrij:         0.0         6         6         13.3%           Barrier:         40.0 feet         Matos:         84.8%         4.9%         10.3%           Barrier:         40.0 feet         Moise Source Elevations (in feet)         0.3%           Barrier:         40.0 feet         Autos:         2.000           Barrier:         0.0 feet         Autos:         2.000           Barrier:         0.0 feet         Autos:         2.000           Barrier:         0.0 feet         Autos:         3.000           Feavy Trucks:         8.006         Grade Adjustment:           View:         90.0 degrees         Medium Trucks:         35.847           Itview:         90.0 degrees         Heavy Trucks:         35.847           Iculations         EMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Ber           68.46         -2.11         2.06         -1.20         -6.08         0.000         els (without Top and barrier attenuation)           Peak Hour         Leg Day         Leg Evening

	FHWA	-RD-77-108 HIC	GHWAY N	NOISE PF	REDICTIC	N MODEL			
Scenario	D: E + P				Project N	<i>lame:</i> The	Bowery		
Road Name	e: Warner Ave.				Job Nu	mber: 122	82		
Road Segmen	t: w/o Grand Av	e.							
SITE S	PECIFIC INP	UT DATA			N	DISE MO	DEL INPUT	s	
Highway Data				Site Con	ditions (i	Hard = 10,	Soft = 15)		-
Average Daily T	raffic (Adt): 24	,420 vehicles				Aut	os: 15		
Peak Hour F	Percentage:	10%		Me	dium Truc	ks (2 Axle	s): 15		
Peak Ho	our Volume: 2	,442 vehicles		He	avy Truck	s (3+ Axle	s): 15		
Veh	icle Speed:	45 mph	-	Vehicle	Mix				
Near/Far Lan	e Distance:	36 feet	-		icleType	Da	V Evening	Night	Daily
Site Data				1011		Itos: 77.	0	v	97.42%
	vior Hoight	0.0 feet		M	edium Tru			10.3%	1.84%
	rier Height:	0.0 reet		ŀ	leavy Tru	cks: 86.	5% 2.7%	10.8%	0.74%
Barrier Type (0-Wa Centerline Dist		40.0 feet					-		
Centerline Dist. to		40.0 feet		Noise So		vations (i	n feet)		
Barrier Distance to		0.0 feet			Autos:				
Observer Height (A		5.0 feet		Mediu	m Trucks:	4.000			
0 1	d Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Ad	justment:	0.0
	d Elevation:	0.0 feet	ŀ	Lane Eq	uivalent	Distance (	in feet)		
	oad Grade:	0.0%	ŀ	Lano Ly	Autos		,		-
		-90.0 degrees		Mediu	m Trucks:				
	Right View:	90.0 degrees			y Trucks:				
FHWA Noise Mode	l Calculations								
VehicleType	REMEL 1	raffic Flow [	Distance	Finite	Road	Fresnel	Barrier Att	en Berr	n Atten
Autos:	68.46	1.93	2.0	16	-1.20	-4.8	33 0.0	000	0.000
Medium Trucks:	79.45	-15.31	2.0	8	-1.20	-5.0	0.0	000	0.000
Heavy Trucks:	84.25	-19.27	2.0	16	-1.20	-5.5	56 0.0	000	0.000
Unmitigated Noise	Levels (withou	It Topo and bar	rier atter	nuation)					
	Leq Peak Hour	Leq Day		vening	Leq N		Ldn	CN	
Autos:	71.3	69.4		67.6		61.5	70.	-	70.8
Medium Trucks:	65.0	63.5	5	57.2		55.6	64.		64.3
Heavy Trucks:	65.8	64.4		55.4		56.6	65.		65.1
Vehicle Noise:	73.1	71.3	3	68.2		63.5	72.	1	72.5
Centerline Distanc	e to Noise Con	tour (in feet)							
				dBA	65 d		60 dBA	55 0	
		Ldn		55	11		255	54	
		CNEL	.: 5	59	12	ſ	273	58	19

Friday, November 15, 2019

Friday, November 15, 2019

	FHW	/A-RD-77-108	HIGH	WAY NO	DISE PF	REDICT		DEL			
Road Nam	io: E + P ne: Warner Ave nt: e/o Grand A						Name: lumber:		owery		
SITE	SPECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
	Percentage:	10%					ucks (2 A	/	15 15		
		2,363 vehicle	s		He	avy Tru	cks (3+ A	xles):	15		
	hicle Speed:	45 mph		V	ehicle l	Vix					
Near/Far La	ne Distance:	36 feet			Veh	icleType	•	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	97.42%
Bai	rrier Heiaht:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis		40.0 feet		N	loise So	ource E	levations	s (in fe	et)		
Centerline Dist.		40.0 feet				Auto	s: 2.0	000			
Barrier Distance		0.0 feet			Mediu	m Truck	s: 4.0	000			
Observer Height ( Pa	Above Pad): ad Elevation:	5.0 feet 0.0 feet			Heav	ry Truck	s: 8.0	006	Grade Adj	ustment	0.0
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distand	e (in t	feet)		
	Road Grade:	0.0%				Auto	s: 35.8	347			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 35.7	735			
	Right View:	90.0 degre	es		Heav	ry Truck	s: 35.8	347			
FHWA Noise Mod	el Calculations	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el .	Barrier Att	en Bei	m Atten
Autos:	68.46	1.78		2.06		-1.20		-4.83	0.0	000	0.000
Medium Trucks:	79.45	-15.45		2.08		-1.20		-5.08		000	0.000
Heavy Trucks:	84.25	-19.41		2.06		-1.20		-5.56	0.0	000	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou			Leq Ev	·	Leq	Night		Ldn		NEL
Autos:	71.		69.2		67.4		61.4		70.0		70.6
Medium Trucks:	64.	-	63.4		57.0		55.5		63.9		64.2
Heavy Trucks:	65.		64.3		55.2		56.5		64.9		65.0
Vehicle Noise:	72.	-	71.2		68.1		63.4		71.9	)	72.4
Centerline Distant	ce to Noise Co	ontour (in feet	)	70 d	RA	65	dBA	6	0 dBA	55	dBA
			Ldn:	54			16		249		i37
			VEL:	58			24		245		76
		0.		00					20.		

	FHW	A-RD-77-108	HIGH	IWAY NO	OISE PR	EDICT	ON MODE	L		
Scenari	o: E + P					Project	Name: Th	e Bowery		
Road Nam	e: Warner Ave					Job N	umber: 12	282		
Road Segmer	nt: w/o Redhill	Ave.								
	SPECIFIC IN	PUT DATA						DEL INPUT	S	
Highway Data				S	Site Con	ditions	(Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt): 2	6,030 vehicles	s				Au	tos: 15		
Peak Hour	Percentage:	10%			Med	dium Tru	icks (2 Axle	es): 15		
Peak H	our Volume:	2,603 vehicles	s		Hea	avy Truc	cks (3+ Axle	es): 15		
Vel	hicle Speed:	45 mph		V	/ehicle N	Aix				
Near/Far Lar	ne Distance:	88 feet		-		cleType	Da	evening	Night	Dailv
Site Data					10/11			.5% 12.9%	9.6%	97.429
	wier Height	0.0 feet			Me	dium T		.8% 4.9%		1.849
Barrier Type (0-W	rier Height:	0.0 reet			h	leavy T	rucks: 86	.5% 2.7%		0.74
Centerline Dis		60.0 feet		L						
Centerline Dist.		60.0 feet		۸	loise So		evations (	,		
Barrier Distance		0.0 feet				Auto				
Observer Height ()		5.0 feet			Mediun					
0 1	d Elevation:	0.0 feet			Heav	y Truck	s: 8.006	Grade Ad	ljustment:	0.0
	d Elevation:	0.0 feet		L	ane Eau	livalen	Distance	(in feet)		
	Road Grade:	0.0%		-		Auto		, ,		
	Left View:	-90.0 degree	20		Mediun	n Truck	s: 40.804	1		
	Right View:	90.0 degree			Heav	y Truck	s: 40.90	3		
	•	•			-					
FHWA Noise Mode										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite		Fresnel	Barrier At		n Atten
Autos:	68.46	2.20		1.20		-1.20			000	0.00
Medium Trucks:	79.45	-15.03		1.22		-1.20			000	0.00
Heavy Trucks:	84.25	-18.99		1.20		-1.20	-5.	34 0.	000	0.00
Unmitigated Noise										
VehicleType	Leq Peak Hou			Leq Ev	v	Leq	Night	Ldn		IEL
Autos:	70.		68.8		67.0		60.9	69.		70.
Medium Trucks:	64.		62.9		56.6		55.0	63.		63.
Heavy Trucks:	65.		63.8		54.8		56.1	64.		64.
Vehicle Noise:	72.	5	70.8		67.6		62.9	71.	5	71
Centerline Distand	e to Noise Co	ntour (in feet	)							
			L	70 d			dBA	60 dBA		dBA
			Ldn: VFL:	75 81			62 74	349 375		53 08

	FHV	/A-RD-77-108	HIGHW	AY N	IOISE PR	REDICTIO	N MO	DEL			
Scenario	p: E + P					Project I	lame:	The B	owery		
Road Name	e: Warner Ave	e.				Job Nu	mber:	12282			
Road Segmen	t: e/o Redhill	Ave.									
	SPECIFIC IN	PUT DATA			<u></u>					5	
Highway Data					Site Con	ditions (			,		
Average Daily 1	raffic (Adt): 1	6,580 vehicle	s					Autos:			
Peak Hour F	0	10%				dium Tru					
	our Volume:	1,658 vehicle	s		Hea	avy Trucl	:s (3+ A	(xles):	15		
	icle Speed:	50 mph		-	Vehicle I	Mix					
Near/Far Lan	e Distance:	88 feet			Vehi	icleType	1	Day	Evening	Night	Daily
Site Data						A	itos:	77.5%	12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet			Me	edium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			F	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	60.0 feet		H	Noise So	ource Ele	vation	s (in f	eet)		
Centerline Dist. t	o Observer:	60.0 feet		F		Autos		000	/		
Barrier Distance t	o Observer:	0.0 feet			Modiur	n Trucks		000			
Observer Height (#	Above Pad):	5.0 feet				v Trucks		006	Grade Adj	ustment	0.0
Pa	d Elevation:	0.0 feet			mour	,	0.1	000	,		
Roa	d Elevation:	0.0 feet		1	Lane Equ				feet)		
F	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degre	es			n Trucks					
	Right View:	90.0 degre	es		Heav	y Trucks	40.	903			
FHWA Noise Mode	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista		Finite	Road	Fresr	iel	Barrier Atte	en Be	rm Atten
Autos:	70.20	-0.21		1.2	-	-1.20		-4.85	0.0		0.000
Medium Trucks:	81.00	-17.45		1.2	-	-1.20		-5.01	0.0		0.000
Heavy Trucks:	85.38	-21.41		1.2	0	-1.20		-5.34	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	atten	nuation)						
	Leq Peak Hou			eq E	vening	Leq N	·		Ldn	-	NEL
Autos:	70	-	68.1		66.3		60.3		68.9		69.5
Medium Trucks:	63	-	62.1		55.7		54.2		62.6		62.8
		.0	62.6		53.5		54.8		63.1		63.2
Heavy Trucks:	64				66.9		62.1		70.7	,	71.1
	64 71	.7	69.9								
Heavy Trucks:	71										
Heavy Trucks: Vehicle Noise:	71		)		dBA	65 a			60 dBA		dBA
Heavy Trucks: Vehicle Noise:	71					65 a 14		(	60 dBA 308		64 64

	FHW	A-RD-77-108 H	IIGHWA	Y NOISE P	REDICT	ON MODE	EL		
	o: E + P e: Dyer Rd.					Name: Th umber: 12			
	nt: w/o Redhill A	ve.			500 1	umber. 12	202		
SITE	SPECIFIC INF	PUT DATA			N	IOISE MO	DDEL INPUT	s	
Highway Data				Site Col	nditions	(Hard = 1	0, Soft = 15)		
Average Daily	Traffic (Adt): 25	5,960 vehicles				AL	utos: 15		
Peak Hour	Percentage:	10%		Me	edium Tru	icks (2 Ax	<i>les):</i> 15		
Peak H	our Volume: 2	2,596 vehicles		He	eavy Truc	cks (3+ Ax	<i>les):</i> 15		
Vel	hicle Speed:	40 mph		Vehicle	Mix				
Near/Far Lar	ne Distance:	88 feet			nicleType		ay Evening	Night	Dailv
Site Data				101			7.5% 12.9%	9.6%	
	wier Height	0.0 feet		N	Iedium T		4.8% 4.9%	10.3%	
Barrier Type (0-Wa	rier Height:	0.0			Heavy T	rucks: 8	6.5% 2.7%	10.8%	0.74%
Centerline Dis		60.0 feet			,				
Centerline Dist. t		60.0 feet		Noise S		evations	. ,		
Barrier Distance t		0.0 feet			Auto				
Observer Height (/		5.0 feet			ım Truck				
0 1	d Flevation:	0.0 feet		Hea	vy Truck	s: 8.00	6 Grade Ad	justment	: 0.0
	d Elevation:	0.0 feet		Lane Ec	uivalen	Distance	(in feet)		
	Road Grade:	0.0%			Auto		, ,		
	Left View:	-90.0 degrees		Mediu	ım Truck				
	Right View:	90.0 degrees			vy Truck				
FHWA Noise Mode	el Calculations								
VehicleType	REMEL	Traffic Flow	Distand	ce Finite	e Road	Fresnel	Barrier Att	ten Ber	m Atten
Autos:	66.51	2.70		1.20	-1.20	-4	4.85 0.0	000	0.000
Medium Trucks:	77.72	-14.53		1.22	-1.20	-5	5.01 0.0	000	0.000
Heavy Trucks:	82.99	-18.49		1.20	-1.20	-5	5.34 0.0	000	0.000
Unmitigated Noise				,	1	Number	1 da		
VehicleType Autos:	Leq Peak Hour 69.2		7.3	q Evening 65.6	,	Night 59.5	Ldn 68.	-	NEL 68.3
Medium Trucks:	63.2		7.3 1.7	55.3		59.5 53.8	62.		62.5
	64.5		1.7 3.1	55.3 54.1		53.8 55.3	62.		
Heavy Trucks:									63.8
Vehicle Noise:	71.2		9.5	66.2	-	61.7	70.:	2	70.7
Centerline Distand	e to Noise Cor	ntour (in feet)	-	70 dBA	6E	dBA	60 dBA	55	dBA
		,	dn:	70 ава 62		33	287		ава 19
		CN		62 66		33 43	287		63
		CN	=L.	00	- P	+0	308		000

Friday, November 15, 2019

Friday, November 15, 2019

	FHW	/A-RD-77-108	HIGH	IWAY N	OISE PR	EDICTIO	N MODEL			
Road Nam	io: E + P le: Barranca Pl nt: e/o Redhill /						lame: The I mber: 1228			
SITE	SPECIFIC IN	PUT DATA				NC	DISE MOD	EL INPUT	s	
Highway Data				;	Site Con	ditions (F	Hard = 10, 3	Soft = 15)		
Average Daily	Traffic (Adt): 3	1,020 vehicle	s				Auto	s: 15		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 Axles	): 15		
Peak H	our Volume:	3,102 vehicle	s		Hea	avy Truck	s (3+ Axles	): 15		
Ve	hicle Speed:	50 mph		-	Vehicle I	Niv				
Near/Far La	ne Distance:	106 feet		H		cleType	Dav	Evening	Night	Daily
Site Data					VCIII		itos: 77.5	0	9.6%	
	rrier Heiaht:	0.0 feet			Me	dium Tru	cks: 84.8		10.3%	1.84%
Barrier Type (0-W		0.0			H	leavv Tru	cks: 86.5	% 2.7%	10.8%	0.74%
Centerline Dis	. ,	70.0 feet								
Centerline Dist.		70.0 feet		1	Noise So		vations (in	feet)		
Barrier Distance		0.0 feet				Autos:				
Observer Height (	Above Pad):	5.0 feet				n Trucks:		~		
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.006	Grade Ad	justment.	0.0
Roa	ad Elevation:	0.0 feet		1	Lane Equ	uivalent L	Distance (ii	n feet)		
	Road Grade:	0.0%				Autos:	45.826			
	Left View:	-90.0 degre	es		Mediur	n Trucks:	45.738			
	Right View:	90.0 degre	es		Heav	y Trucks:	45.826			
FHWA Noise Mod	el Calculations	s								
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	70.20	2.51		0.46	-	-1.20	-4.80		000	0.000
Medium Trucks:	81.00	-14.73		0.48	-	-1.20	-5.00		000	0.000
Heavy Trucks:	85.38	-18.69		0.46	-	-1.20	-5.28	3 0.0	000	0.000
Unmitigated Noise									1	
VehicleType	Leq Peak Hou			Leq Ev	~	Leq N	•	Ldn	-	NEL
Autos:	72.	-	70.1		68.3		62.3	70.9	-	71.5
Medium Trucks:	65.	-	64.0		57.7		56.1	64.6	-	64.8
Heavy Trucks: Vehicle Noise:	66.		64.5		55.5		56.7	65.1		65.2
	73.		71.9		68.9		64.1	72.6	0	73.1
Centerline Distant	ce to Noise Co	ontour (in feet	t)	70	0.4	65 dł		00-104		-10.4
			I dn:	70 c		65 di 226		60 dBA 487		dBA
		0	NFI :	10	-	226	-	487 523		050 128
		C	NLL.	11	3	243	5	523	1,	120

	FHW	/A-RD-77-108	HIGH	WAY NC	ISE PREDIC	TION M	ODEL							
Scenario: E + Road Name: Ban Road Segment: w/o	ranca Pl				Project Name: The Bowery Job Number: 12282									
SITE SPECI	FIC IN	PUT DATA				NOISE	MODE	L INPUT	s					
Highway Data				Si	te Condition	ns (Hard	l = 10, S	oft = 15)						
Average Daily Traffic	(Adt): 3	4.440 vehicle	s				Autos	15						
Peak Hour Percen	· · ·	10%			Medium	Trucks (2	2 Axles):	15						
Peak Hour Vol		3.444 vehicle	s		Heavy T									
Vehicle St	peed:	50 mph					,							
Near/Far Lane Dist		106 feet		Ve	ehicle Mix									
Site Data					VehicleTy	pe Autos:	Day 77.5%	Evening 12.9%	Night 9.6%	Daily 97.429				
					Medium				9.6%					
Barrier He		0.0 feet							10.3%					
Barrier Type (0-Wall, 1-B		0.0			Heavy	Trucks:	86.5%	o 2.7%	10.8%	0.74%				
Centerline Dist. to Ba		70.0 feet		N	oise Source	Elevatio	ons (in f	eet)						
Centerline Dist. to Obse		70.0 feet			AL	tos:	2.000							
Barrier Distance to Obse		0.0 feet			Medium Tru	cks:	4.000							
Observer Height (Above		5.0 feet			Heavy Tru	cks:	8.006	Grade Ad	iustment.	0.0				
Pad Elev		0.0 feet												
Road Elev		0.0 feet		Lá	ane Equivale			feet)						
Road G		0.0%					5.826							
	View:	-90.0 degree			Medium Tru		5.738							
Right	View:	90.0 degree	es		Heavy Tru	CKS: 4	5.826							
FHWA Noise Model Calc	ulations	5												
VehicleType REI	NEL	Traffic Flow	Dis	tance	Finite Road	Fre	esnel	Barrier Att	en Ber	m Atten				
Autos:	70.20	2.96		0.46	-1.2	0	-4.86	0.0	000	0.00				
Medium Trucks:	81.00	-14.28		0.48	-1.2		-5.00		000	0.00				
Heavy Trucks:	85.38	-18.23		0.46	-1.2	0	-5.28	0.0	000	0.00				
Unmitigated Noise Level	ls (witho			r attenu	ation)									
, , ,	eak Hou			Leq Eve	0	eq Night		Ldn		NEL				
Autos:	72.		70.5		68.8		2.7	71.3		71.				
Medium Trucks:	66.	-	64.5		58.1		6.6	65.		65.				
Heavy Trucks:	66.	-	65.0		56.0	-	7.2	65.	-	65.				
Vehicle Noise:	74.	1	72.4		69.3	6	4.5	73.	1	73.				
Centerline Distance to N	oise Co	ntour (in feet	)											
			L	70 dE		i5 dBA	1	60 dBA		dBA				
			Ldn:	113		242 260		522 561		125				
			VFI :	121						209				

	FHV	VA-RD-77-108	HIGHWA	Y NOISE	PREDICTI		DEL			
Road Nam	io: E + P ne: MacArthur nt: w/o Redhill					Name: umber: '		owery		
	SPECIFIC IN	IPUT DATA						L INPUTS		
Highway Data				Site Co	onditions			,		
Average Daily	, ,		S				Autos:			
	Percentage:	10%			ledium Tru	,		15		
	lour Volume:	3,154 vehicle	S	ŀ	leavy Truc	:ks (3+ A	xles):	15		
	hicle Speed:	50 mph		Vehicl	e Mix					
Near/Far La	ne Distance:	106 feet		Ve	ehicleType		Day	Evening	Night	Daily
Site Data						lutos:	77.5%	12.9%	9.6%	97.42%
Ba	rrier Height:	0.0 feet			Medium Ti	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			Heavy Ti	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	70.0 feet		Noise	Source El	ovation	: (in fa	oot)		
Centerline Dist.	to Observer:	70.0 feet		Noise	Auto					
Barrier Distance	to Observer:	0.0 feet		Mod	ium Truck					
Observer Height (	Above Pad):	5.0 feet			avy Truck		006	Grade Adju	stment	0.0
Pa	ad Elevation:	0.0 feet								
	ad Elevation:	0.0 feet		Lane E	quivalent			feet)		
	Road Grade:	0.0%			Auto					
	Left View:	-90.0 degree			ium Truck					
	Right View:	90.0 degree	es	He	avy Truck	s: 45.8	326			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distan		te Road	Fresn		Barrier Atte		m Atten
Autos:	70.20	2.58		0.46	-1.20		-4.86	0.00		0.000
Medium Trucks:	81.00	-14.66		0.48	-1.20		-5.00	0.00		0.000
Heavy Trucks:	85.38	-18.61		0.46	-1.20		-5.28	0.00	00	0.000
Unmitigated Nois										
VehicleType	Leq Peak Hou			q Evening	,	Night		Ldn	CI	NEL
Autos:	72		70.1	68		62.3		71.0		71.6
Medium Trucks:	65		64.1	57		56.2		64.7		64.9
	66		64.6	55	-	56.8		65.2		65.3
Heavy Trucks:		.7	72.0	68	.9	64.2		72.7		73.2
Vehicle Noise:	73									
		ontour (in feet	)	70 10 1		10.4	-			(0.4
Vehicle Noise:				70 dBA		dBA	6	i0 dBA		dBA
Vehicle Noise:			) Ldn: NFL :	70 dBA 106 114	2	dBA 29 16	6	0 dBA 493 529	1,	<i>dBA</i> 061 140

	FHW	/A-RD-77-108	HIGHW	AY N	OISE PR	EDICTI		EL			
Road Nan	io: E + P ne: MacArthur B nt: e/o Redhill J						Name: T umber: 1		owery		
SITE	SPECIFIC IN	PUT DATA				N	IOISE M	ODE	L INPUT	s	
Highway Data				S	Site Con	ditions	(Hard = '	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	5,830 vehicle	3				A	utos:	15		
Peak Hour	Percentage:	10%			Med	dium Tru	icks (2 A	xles):	15		
Peak H	lour Volume:	2,583 vehicles	6		Hea	avy Truc	ks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph		N.	/ehicle I	liv					
Near/Far La	ne Distance:	106 feet		-		cleType		Day	Evening	Night	Daily
Site Data					Veni			7.5%	~	9.6%	
					Me	, dium Ti		34.8%		9.0%	
	rrier Height:	0.0 feet				leavy Ti		36.5%		10.8%	
Barrier Type (0-W		0.0								10.070	0.7470
Centerline Dist.		70.0 feet		٨	Voise So	urce El	levations	(in fe	eet)		
Barrier Distance		70.0 feet				Auto	s: 2.0	00			
		0.0 feet 5.0 feet			Mediur	n Truck	s: 4.0	00			
Observer Height (	above Pad): ad Elevation:	0.0 feet			Heav	y Truck	s: 8.0	06	Grade Adj	iustment	: 0.0
	ad Elevation: ad Flevation:	0.0 feet		1	ano Fau	ivələn	Distanc	o (in i	foot)		
	Road Grade:	0.0%		-	une Ly	Auto					
	Left View:	-90.0 deares			Modiur	n Truck					
	Right View:	90.0 degree				v Truck					
	Right view.	90.0 degree	:5		i icav	y much	5. 40.0	20			
FHWA Noise Mod	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	el	Barrier Att	en Bei	rm Atten
Autos:	70.20	1.71		0.46		-1.20		4.86	0.0		0.000
Medium Trucks:		-15.53		0.48	3	-1.20		5.00		000	0.000
Heavy Trucks:	85.38	-19.48		0.46	6	-1.20	-	5.28	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier	attenı	uation)						
VehicleType	Leq Peak Hou			eq Ev	rening	Leq	Night		Ldn	-	NEL
Autos:	71.		69.3		67.5		61.5		70.1		70.7
Medium Trucks:	64.		63.2		56.9		55.3		63.8		64.0
Heavy Trucks:	65.		63.7		54.7		56.0		64.3		64.4
Vehicle Noise:	72.	.9	71.1		68.1		63.3		71.8	3	72.3
Centerline Distan	ce to Noise Co	ntour (in feet	)								
				70 d			dBA	6	60 dBA		i dBA
			Ldn:	93			00		431		929
		CI	VEL:	10	0	2	15		463	ç	998

Friday, November 15, 2019

Friday, November 15, 2019

	FHV	NA-RD-77-108	HIGHV	VAY NO	DISE PR	REDICT	ION MO	DEL			
Scenari Road Nam Road Segmer	e: Grand Ave						t Name: lumber:				
SITE S	SPECIFIC IN	IPUT DATA				ſ	NOISE I	NODE	L INPUTS	S	
Highway Data				S	ite Cor	ditions	; (Hard =	: 10, S	oft = 15)		
Average Daily T Peak Hour I	Percentage:	10%					ucks (2 )	/	15		
	our Volume:	2,160 vehicle	s		He	avy Tru	cks (3+ )	Axles):	15		
	nicle Speed:	45 mph		V	ehicle	Vix					
Near/Far Lar	e Distance:	88 feet			Veh	icleType	е	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	6 12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			М	edium T	rucks:	84.8%	6 4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			1	leavy 7	Trucks:	86.5%	6 2.7%	10.8%	0.74%
Centerline Dis		60.0 feet		N	oise Se	ource E	levation	s (in f	eet)		
Centerline Dist. t		60.0 feet				Auto	os: 2.	000			
Barrier Distance t		0.0 feet			Mediu	m Truck	(s: 4.	000			
Observer Height (/	Above Pad): d Elevation:	5.0 feet 0.0 feet			Heav	y Truck	(S: 8.	006	Grade Adj	ustment	: 0.0
	d Elevation: d Elevation:	0.0 feet		L	ane Ea	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%		-		Auto		902	,		
	Left View:	-90.0 degre	oc		Mediu	m Truck		804			
	Right View:	90.0 degre				y Truck		903			
FHWA Noise Mode	el Calculation	IS									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresi	nel	Barrier Atte	en Be	rm Atten
Autos:	68.46	1.39		1.20		-1.20		-4.85	0.0	000	0.000
Medium Trucks:	79.45	-15.84		1.22		-1.20		-5.01	0.0	000	0.000
Heavy Trucks:	84.25	-19.80		1.20		-1.20		-5.34	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	r attenu	ation)						
<i>,</i> ,	Leq Peak Hou			Leq Eve		Leq	Night		Ldn	-	NEL
Autos:			68.0		66.2		60.		68.8		69.4
Medium Trucks:			62.1		55.8		54.:		62.7		62.9
Heavy Trucks:	-		63.0		54.0		55.	_	63.6		63.7
Vehicle Noise:			70.0		66.8		62.	1	70.7	7	71.
Centerline Distanc	e to Noise C	ontour (in feet	)								
			L	70 dl			dBA		60 dBA		i dBA
			Ldn:	66			43		309		665
		C	NEL:	71		1	54		331	1	713

	FHV	/A-RD-77-108	HIGH	WAY NO	OISE PR	EDICTI	ON MODE	-		
Scenar							Name: The			
	ne: Newport Av					Job N	umber: 122	82		
Road Segme	nt: n/o Valceno	ia Ave.								
	SPECIFIC IN	PUT DATA						DEL INPUT	s	
Highway Data				S	Site Con	ditions	(Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 1	1,910 vehicles	6				Aut	os: 15		
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 Axle	s): 15		
Peak H	lour Volume:	1,191 vehicles	6		Hea	avy Truc	:ks (3+ Axle	s): 15		
Ve	hicle Speed:	40 mph		L	/ehicle I	Mix				
Near/Far La	ne Distance:	88 feet		Ľ.		cleType	Da	v Evening	Night	Daily
Site Data								5% 12.9%	9.6%	
Ba	rrier Height:	0.0 feet			Me	edium Ti	ucks: 84.	8% 4.9%	10.3%	1.849
Barrier Type (0-W		0.0			F	leavy Ti	ucks: 86.	5% 2.7%	10.8%	0.749
Centerline Di	. ,	60.0 feet			laiaa C-		evations (i	n faat)		
Centerline Dist.	to Observer:	60.0 feet		^	ioise so	Auto				
Barrier Distance	to Observer:	0.0 feet			1 4	n Truck				
Observer Height (	Above Pad):	5.0 feet							i colmonte	0.0
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.006	Grade Ad	ustment	0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	uivalen	Distance (	'in feet)		
	Road Grade:	0.0%				Auto	s: 40.902			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 40.804			
	Right View:	90.0 degree	s		Heav	y Truck	s: 40.903			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atter
Autos:	66.51	-0.68		1.20	)	-1.20	-4.	35 0.0	000	0.00
Medium Trucks:	77.72	-17.92		1.22		-1.20	-5.	0.0	000	0.00
Heavy Trucks:	82.99	-21.87		1.20		-1.20	-5.	34 0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	er atteni	uation)					
VehicleType	Leq Peak Hou			Leq Ev	•	Leq	Night	Ldn		VEL
Autos:			53.9		62.2		56.1	64.7		65.
Medium Trucks:			58.3		51.9		50.4	58.9	-	59
Heavy Trucks:			59.7		50.7		51.9	60.3	-	60.
Vehicle Noise:	•••	-	56.1		62.8		58.3	66.8	3	67
Centerline Distan	ce to Noise Co	ontour (in feet,	)	70			10.4			
			l dn:	70 d			dBA	60 dBA		dBA
			Lan:	37		7	9	171	3	68
			IFI :	39			5	183		94

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGH	IWAY N	OISE PF	REDICTIO	N MO	DEL			
	io: OY ne: Redhill Ave nt: n/o Walnut					Project N Job Nur			owery		
SITE	SPECIFIC IN	IPUT DATA								s	
Highway Data				:	Site Con	ditions (H	lard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 2	25,990 vehicles	6					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Truc	ks (2 )	Axles):	15		
Peak H	lour Volume:	2,599 vehicles	3		He	avy Truck	s (3+ )	Axles):	15		
Ve	hicle Speed:	40 mph		-	Vehicle I	Mix					
Near/Far La	ne Distance:	88 feet		-		icleType		Day	Evening	Night	Daily
Site Data						Au	tos:	77.5%	12.9%	9.6%	97.429
Ba	rrier Height:	0.0 feet			Me	edium Tru	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks:	86.5%	2.7%	10.8%	0.749
Centerline Di		60.0 feet		1	Noise So	ource Elev	vation	s (in fe	et)		
Centerline Dist.		60.0 feet				Autos:	2.	000			
Barrier Distance		0.0 feet			Mediu	m Trucks:	4.	000			
Observer Height (	,	5.0 feet			Heav	y Trucks:	8.	006	Grade Adj	justment.	0.0
	ad Elevation:	0.0 feet		H			N - 4	// /	41		
	ad Elevation:	0.0 feet		Ľ	Lane Eq	uivalent E Autos:		902	eel)		
	Road Grade: Left View:	0.0%			Madiu	n Trucks:		902 804			
	Right View:	-90.0 degree 90.0 degree				ry Trucks:		903			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	2.71		1.20	)	-1.20		-4.85	0.0	000	0.00
Medium Trucks:	77.72	-14.53		1.2	2	-1.20		-5.01	0.0	000	0.00
Heavy Trucks:	82.99	-18.49		1.20	D	-1.20		-5.34	0.0	000	0.00
Unmitigated Nois					· · · ·						
VehicleType	Leq Peak Hou			Leq Ev		Leq N	<u> </u>		Ldn		VEL
Autos:	69		67.3		65.6		59.	-	68.1		68.
Medium Trucks:	63		61.7		55.3		53.	-	62.3	-	62.
Heavy Trucks:	64		63.1		54.1		55.	-	63.7		63.
Vehicle Noise:	71	-	69.5		66.2		61.	7	70.2	2	70.
Centerline Distan	ce to Noise Co	ontour (in feet)	)	70	10.4						
				70 0		65 dE		6	0 dBA		dBA
			Ldn: VFI :	6	-	134 143			288 308	-	20 64

	FHV	NA-RD-77-108	3 HIGH	WAY N	IOISE PR	EDICTIO	N MODEL			
Scenario: Road Name: Road Segment:	Redhill Ave						ame: The hber: 1228			
	ECIFIC IN	NPUT DATA						EL INPUT	S	
Highway Data					Site Con	ditions (H	ard = 10,	,		
Average Daily Tra	ffic (Adt):	27,030 vehicle	es				Auto			
Peak Hour Pe	rcentage:	10%					is (2 Axles			
Peak Hour	Volume:	2,703 vehicle	es		Hea	avy Trucks	(3+ Axles	): 15		
Vehicl	le Speed:	40 mph		ŀ	Vehicle I	Nix				
Near/Far Lane	Distance:	88 feet		ŀ	Vehi	cleType	Day	Evening	Night	Daily
Site Data						Au	os: 77.5	% 12.9%	9.6%	97.429
Barrie	r Heiaht:	0.0 feet			Me	edium Truc	ks: 84.8	% 4.9%	10.3%	1.84%
Barrier Type (0-Wall,		0.0			F	leavy Truc	ks: 86.5	% 2.7%	10.8%	0.749
Centerline Dist. t	o Barrier:	60.0 feet		ł	Noise Sc	ource Elev	ations (in	feet)		
Centerline Dist. to 0	Observer:	60.0 feet		ŀ		Autos:	2.000	,		
Barrier Distance to (	Observer:	0.0 feet			Mediur	n Trucks:	4.000			
Observer Height (Abo	ove Pad):	5.0 feet				y Trucks:	8.006	Grade Ad	liustment	0.0
Pad I	Elevation:	0.0 feet		4						
Road I	Elevation:	0.0 feet		4	Lane Eq		istance (i	1 feet)		
	ad Grade:	0.0%				Autos:	40.902			
l	Left View:	-90.0 degre				n Trucks:	40.804			
Ri	ight View:	90.0 degre	ees		Heav	y Trucks:	40.903			
FHWA Noise Model C	Calculation	IS								
	REMEL	Traffic Flow		stance	Finite		Fresnel	Barrier At		m Atten
Autos:	66.51	2.88		1.2	-	-1.20	-4.8		000	0.00
Medium Trucks:	77.72			1.2	-	-1.20	-5.0		000	0.00
Heavy Trucks:	82.99	-18.32	2	1.2	0	-1.20	-5.3	4 0.	000	0.00
Unmitigated Noise L			-							
	q Peak Hou		/	Leq E	vening	Leq Ni	,	Ldn		NEL
Autos:		9.4	67.5		65.7		59.7	68.	-	68.
Medium Trucks:		3.4	61.9		55.5		54.0	62.		62.
Heavy Trucks: Vehicle Noise:		1.7	63.3		54.2		55.5	63.	-	64.
		1.4	69.7		66.4		61.8	70.	4	70.
Centerline Distance	to Noise C	ontour (in fee	t)	70	dBA	65 dB	4	60 dBA	55	dBA
			L	70	UDA	05 dB	А			
				6	4	127				
			Ldn: NEL:	-	4 8	137 147		295 316		36 81

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGHV	VAY NO	DISE PF	REDICT		EL				
Scenari Road Nam Road Segmer	e: Redhill Ave						Name: T lumber: 1					
SITE	SPECIFIC IN	IPUT DATA							L INPUT	s		
Highway Data				S	ite Con	ditions	(Hard =	10, S	oft = 15)			
	Traffic (Adt): Percentage: our Volume:	26,120 vehicle: 10% 2,612 vehicle:					A ucks (2 A cks (3+ A		15			
Vel	hicle Speed:	45 mph		V	ehicle l	Mix						
Near/Far Lar	ne Distance:	88 feet				icleType		Dav	Evening	Night		aily
Site Data					1011			77.5%	•	9.6		.42%
Bar	rier Height:	0.0 feet			Me	edium T	rucks: 8	34.8%	4.9%	10.3	% 1	.84%
Barrier Type (0-W	all, 1-Berm):	0.0			F	leavy T	rucks: 8	36.5%	2.7%	10.8	% C	0.74%
Centerline Dis	t. to Barrier:	60.0 feet		Ν	loise So	ource E	levations	in f	eet)			
Centerline Dist. t	to Observer:	60.0 feet		-		Auto						
Barrier Distance t	to Observer:	0.0 feet			Mediu	n Truck	s: 4.0	00				
Observer Height (/	,	5.0 feet			Heav	y Truck	s: 8.0	06	Grade Adj	ustme	nt: 0.	0
	d Elevation:	0.0 feet					t Distanc	- ()	6			
	ad Elevation:	0.0 feet		L	ane Eq	Auto			reet)			
r	Road Grade: Left View:	0.0%			Madiu	n Truck						
	Right View:	-90.0 degree 90.0 degree				y Truck						
FHWA Noise Mode	el Calculation	IS										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresn	e/	Barrier Att	en B	erm A	ltten
Autos:	68.46	2.22		1.20		-1.20	-	4.85	0.0	000		0.000
Medium Trucks:	79.45			1.22		-1.20		5.01		000		0.000
Heavy Trucks:	84.25	-18.98		1.20		-1.20	-	5.34	0.0	000		0.000
Unmitigated Noise								_				
	Leq Peak Hou			Leq Ev		Leq	Night		Ldn		CNEL	
Autos:			68.8		67.0		61.0		69.6	-		70.2
Medium Trucks:	64		62.9		56.6		55.0		63.5			63.7
Heavy Trucks: Vehicle Noise:	65		63.9 70.8		54.8 67.6		56.1 63.0		64.4 71.5			64.6
					67.6		63.0		/1.5	)		72.0
Centerline Distance	ce to Noise C	ontour (in feet	,	70 d	D۸	65	dBA		60 dBA		5 dB	A
			I dn:	70 0			63		350		755	-
			VEL:	81			74		376		809	
		0		01					570		503	

	FHW	A-RD-77-108 H	IGHWA	AY NOISE	PREDICTI	ON MODE	L		
Scenari						Name: The			
	e: Redhill Ave.				Job N	umber: 122	282		
Road Segmer	nt: s/o Valcenci	a Ave.							
	SPECIFIC IN	PUT DATA					del input	s	
Highway Data				Site C	onditions	(Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt): 2	8,570 vehicles				Aut	os: 15		
Peak Hour	Percentage:	10%		Λ	ledium Tru	icks (2 Axle	es): 15		
Peak H	our Volume:	2,857 vehicles		1	leavy Truc	ks (3+ Axle	es): 15		
Vel	hicle Speed:	50 mph		Vehic	o Mix				
Near/Far Lar	ne Distance:	88 feet			e hicleType	Da	y Evening	Night	Daily
Site Data				V			5% 12.9%	0	97.42
				_	, Medium Ti		.3% 12.5%		1.84
	rier Height:	0.0 feet			Heavy Ti		.5% 4.5%		0.74
Barrier Type (0-W		0.0			neavy n	uchs. 00	.570 2.170	10.070	0.74
Centerline Dis		60.0 feet		Noise	Source El	evations (i	n feet)		
Centerline Dist.		60.0 feet			Auto	s: 2.000	)		
Barrier Distance		0.0 feet		Med	ium Truck	s: 4.000			
Observer Height ()		5.0 feet		He	avy Truck	s: 8.006	Grade Ad	ljustment:	0.0
	d Elevation:	0.0 feet		1		Distance	(In 6 4)		
	d Elevation:	0.0 feet		Lane		Distance	, ,		
F	Road Grade:	0.0%			Auto				
	Left View:	-90.0 degrees			ium Truck				
	Right View:	90.0 degrees		He	avy Truck	s: 40.903	3		
FHWA Noise Mode	el Calculations	;							
VehicleType	REMEL	Traffic Flow	Distan	ice Fini	te Road	Fresnel	Barrier At	ten Bern	n Atter
Autos:	70.20	2.15		1.20	-1.20	-4.	85 0.	000	0.00
Medium Trucks:	81.00	-15.09		1.22	-1.20	-5.	01 0.	000	0.00
Heavy Trucks:	85.38	-19.04		1.20	-1.20	-5.	34 0.	000	0.00
Unmitigated Noise	e Levels (witho	out Topo and b	arrier a	ttenuation	l)				
VehicleType	Leq Peak Hour	r Leq Day	Le	eq Evening	Leq	Night	Ldn	CN	IEL
Autos:	72.	4 70	).5	68	.7	62.6	71.	3	71
Medium Trucks:	65.	9 64	.4	58	.1	56.5	65.	0	65
Heavy Trucks:	66.	3 64	1.9	55	.9	57.1	65.	5	65
Vehicle Noise:	74.	1 72	2.3	69	.3	64.5	73.	0	73
	e to Noise Co	ntour (in feet)							
Centerline Distanc				70 dBA	65	dBA	60 dBA	55 0	'BA
Centerline Distant									
Centerline Distand		Lo	in:	95	2	06	443	95	54

	FHV	VA-RD-77-108 H	IIGHW/	AY NO	ISE PR	REDICTIO	N MODE	L		
Scenar							lame: The			
	e: Redhill Ave					Job Nu	mber: 122	282		
Road Segme	nt: s/o Warner	Ave.								
SITE	SPECIFIC IN	IPUT DATA						DEL INPUTS	5	
Highway Data				Si	ite Con	ditions (I	lard = 10	, Soft = 15)		
Average Daily	Traffic (Adt): 3	34,350 vehicles					Au	tos: 15		
Peak Hour	Percentage:	10%			Mee	dium Truc	ks (2 Axle	es): 15		
Peak H	our Volume:	3,435 vehicles			Hea	avy Truck	s (3+ Axle	es): 15		
Ve	hicle Speed:	50 mph		V	ehicle I	Mix				
Near/Far La	ne Distance:	88 feet				icleType	Da	y Evening	Night	Daily
Site Data							-	5% 12.9%	9.6%	
Pa	rrier Heiaht:	0.0 feet			Me	edium Tru	cks: 84	.8% 4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			F	leavy Tru	cks: 86	.5% 2.7%	10.8%	0.74%
Centerline Dis		60.0 feet								
Centerline Dist.		60.0 feet		N	oise So	ource Ele		,		
Barrier Distance		0.0 feet				Autos:				
Observer Height (	Above Pad):	5.0 feet				n Trucks:	4.000			
	ad Elevation:	0.0 feet			Heav	y Trucks:	8.006	Grade Adj	ustment	0.0
Roa	ad Elevation:	0.0 feet		Lá	ane Equ	uivalent l	Distance	(in feet)		
	Road Grade:	0.0%				Autos:	40.902	2		
	Left View:	-90.0 degrees	6		Mediur	n Trucks:	40.804	1		
	Right View:	90.0 degrees	3		Heav	y Trucks:	40.903	3		
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.95		1.20		-1.20	-4.			0.000
Medium Trucks:	81.00	-14.29		1.22		-1.20	-5.	•••		0.000
Heavy Trucks:	85.38	-18.24		1.20		-1.20	-5.	34 0.0	00	0.000
Unmitigated Nois			-							
VehicleType Autos:	Leq Peak Hou 73		1.3	eq Eve	~	Leq N	•	Ldn 70.4	-	NEL
Medium Trucks:	73 66				69.5		63.4	72.1		72.7
	67		5.2 5.7		58.9 56.7		57.3 57.9	66.3		66.0 66.4
Heavy Trucks: Vehicle Noise:	74		3.1		70.1		65.3	73.8		74.3
			3.1		70.1		00.3	73.8	)	74.,
	ce to Noise Co	ontour (in feet)	1	70 dE	24	65 d	34	60 dBA	55	dBA
Centerline Distan										
Centerline Distan		1	dn:	108		232		501		079

	FHV	VA-RD-77-108	HIGHWA	AY NO	ISE PR	EDICTI	ON MO	DEL			
Scenar	io: OY					Project	Name:	The Bo	owery		
Road Nan	ne: Redhill Ave						umber:		,		
Road Segme	nt: n/o Carneg	ie Ave.									
SITE	SPECIFIC IN	IPUT DATA							L INPUT	5	
Highway Data				Si	ite Cond	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	34,080 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Mea	lium Tru	icks (2 A	(xles):	15		
Peak H	lour Volume:	3,408 vehicle	s		Hea	vy Truc	ks (3+ A	Axles):	15		
Ve	hicle Speed:	50 mph		Ve	ehicle N	lix					
Near/Far La	ne Distance:	88 feet		-	Vehio	cleType		Day	Evening	Night	Daily
Site Data							utos:	77.5%	12.9%	9.6%	97.429
Ba	rrier Height:	0.0 feet			Me	dium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			Н	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di		60.0 feet		AL.	oise So	uree El	ovetion	o (in fi	a a 41		
Centerline Dist.	to Observer:	60.0 feet		N	oise so				eet)		
Barrier Distance	to Observer:	0.0 feet			Mediun	Autos		000 000			
Observer Height	Above Pad):	5.0 feet							Grade Adj		0.0
P	ad Elevation:	0.0 feet			Heavy	/ Trucks	. 8.	006	Grade Adj	usunem.	0.0
Ro	ad Elevation:	0.0 feet		Lá	ane Equ	ivalent	Distan	ce (in	feet)		
	Road Grade:	0.0%				Autos	s: 40.	902			
	Left View:	-90.0 degree	es		Mediun	n Trucks	: 40.	804			
	Right View:	90.0 degree	es		Heavy	/ Trucks	s: 40.	903			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	nce	Finite I	Road	Fresr	nel	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.92		1.20		-1.20		-4.85	0.0	00	0.000
Medium Trucks:	81.00	-14.32		1.22		-1.20		-5.01	0.0	00	0.000
Heavy Trucks:	85.38	-18.28		1.20		-1.20		-5.34	0.0	00	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ation)						
	Leg Peak Hou	r Leq Day		eq Eve	•	Leq	Night		Ldn		VEL
VehicleType	,						63.4	L .	72.0	)	72.6
Autos:	, 73		71.2		69.5						
Autos: Medium Trucks:	73	.7	65.2		58.8		57.3		65.7		
Autos: Medium Trucks: Heavy Trucks:	73 66 67	.7 .1	65.2 65.7		58.8 56.6		57.3 57.9	)	66.3	5	66.4
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	73 66 67 74	.7 .1 .8	65.2 65.7 73.1		58.8		57.3	)		5	66.4
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	73 66 67 74	.7 .1 .8	65.2 65.7 73.1		58.8 56.6 70.0		57.3 57.9 65.2	2	66.3 73.8	3	66.4 74.3
Autos: Medium Trucks: Heavy Trucks:	73 66 67 74	.7 .1 .8 ontour (in feet	65.2 65.7 73.1	70 dE	58.8 56.6 70.0	65	57.3 57.9 65.2	2	66.3 73.8 60 dBA	55	66.4 74.3 dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	73 66 67 74	.7 .1 .8 ontour (in feet	65.2 65.7 73.1	70 dE 107 115	58.8 56.6 70.0 3A	65 ( 23	57.3 57.9 65.2 //BA	2	66.3 73.8	55 1,0	66.0 66.4 74.3 <i>dBA</i> 073 153

Friday, November 15, 2019

Friday, November 15, 2019

	FH'	WA-RD-77-108	HIGH	WAY N	OISE PF	REDICT	ION MODEL				
	io: OY ne: Redhill Av nt: s/o Carneg						Name: The lumber: 122				
	SPECIFIC II	NPUT DATA					IOISE MOD				
Highway Data				5	Site Con	ditions	(Hard = 10,	Soft = 15	5)		
Average Daily	Traffic (Adt):	33,220 vehicle	s				Auto	is: 15			
Peak Hour	Percentage:	10%					ucks (2 Axles	· ·			
	lour Volume:	3,322 vehicle	s		He	avy Tru	cks (3+ Axles	s): 15			
	hicle Speed:	50 mph		1	ehicle	Vix					
Near/Far La	ne Distance:	88 feet			Veh	icleType	e Day	Eveni	ing Ni	ight	Daily
Site Data							Autos: 77.5	5% 12.9	9% 9	9.6%	97.42%
Ba	rrier Heiaht:	0.0 feet			M	edium T	rucks: 84.8	3% 4.9	9% 10	0.3%	1.84%
Barrier Type (0-W	all, 1-Berm):	0.0			1	leavy T	rucks: 86.5	5% 2.7	7% 10	0.8%	0.74%
Centerline Dis	st. to Barrier:	60.0 feet			loise Si	ource F	levations (in	feet)			
Centerline Dist.	to Observer:	60.0 feet				Auto		1000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck					
Observer Height (	,	5.0 feet			Heav	v Truck	s: 8.006	Grade	Adjusti	ment:	0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		1	ane Eq	uivalen Auto	t Distance (i	n teet)			
	Road Grade: Left View:	0.0%			Madiu	Auto m Truck					
	Right View:	-90.0 degre 90.0 degre				ry Truck					
FHWA Noise Mod	el Calculation	าร									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier	r Atten	Bern	n Atten
Autos:	70.20	2.81		1.20	I	-1.20	-4.8	5	0.000		0.000
Medium Trucks:	81.00			1.22		-1.20	-5.0		0.000		0.000
Heavy Trucks:	85.38	-18.39		1.20		-1.20	-5.3	4	0.000		0.000
Unmitigated Nois					,		1				
VehicleType	Leq Peak Ho			Leq Ev		Leq	Night	Ldn		CN	
Autos:		3.0	71.1		69.3		63.3		71.9		72.5
Medium Trucks:		6.6	65.1 65.6		58.7 56.5		57.2 57.8		65.6 66.1		65.9
Heavy Trucks: Vehicle Noise:	-	7.0 4.7	65.6 73.0		56.5 69.9		57.8		66.1 73.7		66.3
					03.9		03.1		13.1		74.
Centerline Distan	ce to NOISe C	ontour (in reel	, 	70 d	BA	65	dBA	60 dBA		55 c	IBA
			Ldn:	10			27	490		1.0	
		С	NEL:	11	-	-	44	526		1.1	
					-	-		. = -		.,.	

F	HWA	-RD-77-108	HIGI	IWAY NO	DISE PF	REDICT	ION MC	DDEL			
Scenario: OY						Project	t Name:	The B	owery		
Road Name: Redhill	Ave.					Job N	lumber:	12282			
Road Segment: n/o Barr	anca	Pkwy.									
SITE SPECIFIC	INP	UT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard :	= 10, S	oft = 15)		
Average Daily Traffic (Adt)	: 36,	,650 vehicles	6					Autos:	15		
Peak Hour Percentage	e -	10%			Me	dium Tr	ucks (2	Axles):	15		
Peak Hour Volume	: 3,	,665 vehicles	3		He	avy Tru	cks (3+	Axles):	15		
Vehicle Speed	1:	50 mph		V	ehicle l	Mix					
Near/Far Lane Distance	e -	106 feet				icleType	-	Day	Evening	Night	Daily
Site Data					VCII		Autos:	77.5%	0	9.6%	
					M	edium T		84.8%		10.3%	
Barrier Height Barrier Type (0-Wall, 1-Berm)		0.0 feet					rucks:			10.8%	
		0.0 70.0 feet								10.070	0.11
Centerline Dist. to Barrier Centerline Dist. to Observer				N	oise So	ource E	levatio	ns (in f	eet)		
Barrier Distance to Observer		70.0 feet 0.0 feet				Auto	vs: 2	.000			
		5.0 feet			Mediur	m Truck	:s: 4	.000			
Observer Height (Above Pad)					Heav	y Truck	.s: 8	.006	Grade Ad	ustment.	0.0
Pad Elevatior Road Elevation		0.0 feet 0.0 feet		1	ano Fa	uivalon	t Distar	nco (in	foot)		
Road Grade		0.0 feet		-	une Lq	Auto		5.826	leely		
Left Viev		-90.0 degree			Madiu	m Truck		5.738			
Right View		90.0 degree				/y Truck		5.826			
Tught Vice		50.0 degree	:5		nour	<i>y</i> 11000					
FHWA Noise Model Calculat						-					
VehicleType REMEL		raffic Flow	Di	stance		Road	Fres		Barrier Att		m Atten
Autos: 70.		3.23		0.46		-1.20		-4.86		000	0.00
Medium Trucks: 81.		-14.01		0.48		-1.20		-5.00		000	0.00
Heavy Trucks: 85.		-17.96		0.46		-1.20		-5.28	0.0	000	0.00
Unmitigated Noise Levels (w	-							_			
VehicleType Leq Peak I		Leq Day		Leq Eve	·	Leq	Night		Ldn		NEL
Autos:	72.7		70.8		69.0		63		71.6		72.
Medium Trucks:	66.3		64.8		58.4		56		65.3		65.
Heavy Trucks:	66.7		65.3		56.2		57.	-	65.8		66.
Vehicle Noise:	74.4		72.6		69.6		64	.8	73.4	1	73
Centerline Distance to Noise	Con	tour (in feet,	)								
				70 di			dBA	1	60 dBA		dBA
			Ldn: VFI :	117		2	253		544	1,	173
				126			272		585		260

	FHV	VA-RD-77-108	HIGHWA	NO YY	ISE PR	EDICTIO	N MOD	EL			
Scenari						Project N			owery		
	e: Redhill Ave	-				Job Nu	mber: 1	2282			
Road Segmer	nt: s/o Barrand	a Pkwy.									
	SPECIFIC IN	IPUT DATA							L INPUTS	;	
Highway Data				Si	te Con	ditions (H	lard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 3	37,140 vehicle	s				A	Autos:	15		
Peak Hour	Percentage:	10%				dium Truc	•				
Peak H	our Volume:	3,714 vehicle	s		Hea	avy Truck	s (3+ A	xles):	15		
	nicle Speed:	50 mph		Ve	hicle I	Nix					
Near/Far Lar	ne Distance:	106 feet			Vehi	cleType	1	Day	Evening	Night	Daily
Site Data						AL	itos:	77.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			Me	edium Tru	cks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			ŀ	leavy Tru	cks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	70.0 feet		No	oise So	urce Ele	vations	in fe	eet)		
Centerline Dist. t	o Observer:	70.0 feet				Autos:			,		
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Trucks:					
Observer Height (/	Above Pad):	5.0 feet				y Trucks:		06	Grade Adju	istment:	0.0
	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		La	ine Equ	uivalent L			feet)		
F	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degre				n Trucks:					
	Right View:	90.0 degre	es		Heav	y Trucks:	45.8	26			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fresne		Barrier Atte		m Atten
Autos:	70.20	3.29		0.46		-1.20		4.86	0.0		0.000
				0.48		-1.20		5.00	0.0		0.000
Medium Trucks:	81.00	-13.95									0.000
Medium Trucks: Heavy Trucks:	81.00	-13.95 -17.90		0.46		-1.20		5.28	0.0	00	
Heavy Trucks: Unmitigated Noise	85.38 E Levels (with	-17.90 out Topo and		0.46 ttenua				-5.28			
Heavy Trucks: Unmitigated Noise VehicleType	85.38 E Levels (with Leq Peak Hou	-17.90 out Topo and r Leq Day	/ Le	0.46	ning	-1.20 Leq N	ight	-5.28	Ldn		VEL
Heavy Trucks: Unmitigated Noise VehicleType Autos:	85.38 E Levels (with Leq Peak Hou 72	-17.90 out Topo and r Leq Day .8	/ Le 70.9	0.46 ttenua	<i>ning</i> 69.1		<i>ight</i> 63.0	-5.28	Ldn 71.7		72.3
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	85.38 E Levels (with Leq Peak Hou 72 66	-17.90 out Topo and r Leq Day .8 .3	/ Le 70.9 64.8	0.46 ttenua	ning 69.1 58.5		<i>ight</i> 63.0 56.9	-5.28	Ldn 71.7 65.4		72.3 65.6
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	85.38 E Levels (with Leq Peak Hou 72 66 66	-17.90 out Topo and r Leq Day .8 .3 .7	/ Le 70.9 64.8 65.3	0.46 ttenua	ning 69.1 58.5 56.3		<i>ight</i> 63.0 56.9 57.5	-5.28	Ldn 71.7 65.4 65.9	CI	72.3 65.6 66.0
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	85.38 E Levels (with Leq Peak Hou 72 66	-17.90 out Topo and r Leq Day .8 .3 .7	/ Le 70.9 64.8	0.46 ttenua	ning 69.1 58.5		<i>ight</i> 63.0 56.9	-5.28	Ldn 71.7 65.4	CI	72.3 65.6 66.0
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	85.38 2 Levels (with Leg Peak Hou 72 66 66 74	-17.90 out Topo and r Leq Day .8 .3 .7 .5	2019 2019 2019 2019 2019 2019 2019 2019	0.46 ttenua	ning 69.1 58.5 56.3 69.7	Leq N	<i>ight</i> 63.0 56.9 57.5 64.9		Ldn 71.7 65.4 65.9 73.4	CI	72.3 65.6 66.0 73.9
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	85.38 2 Levels (with Leg Peak Hou 72 66 66 74	-17.90 out Topo and r Leg Day .8 .3 .7 .5 ontour (in feet	2 Le 70.9 64.8 65.3 72.7 )	0.46 ttenua q Eve	ning 69.1 58.5 56.3 69.7	Leq N 65 dt	ight 63.0 56.9 57.5 64.9 3A		Ldn 71.7 65.4 65.9 73.4	CI 55	72.3 65.6 66.0 73.9 dBA
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	85.38 2 Levels (with Leg Peak Hou 72 66 66 74	-17.90 out Topo and r Leq Day .8 .3 .7 .5 ontour (in feet	2019 2019 2019 2019 2019 2019 2019 2019	0.46 ttenua	ning 69.1 58.5 56.3 69.7	Leq N	ight 63.0 56.9 57.5 64.9 3A		Ldn 71.7 65.4 65.9 73.4	Cr 555	72.3 65.6 66.0 73.9

	FHW	A-RD-77-108	HIGHW	AY NO	ISE PR	EDICTIC	N MOD	EL			
Scenar	io: OY					Project N	<i>lame:</i> T	he Bo	owery		
	e: Redhill Ave.					Job Nu	mber: 1	2282			
Road Segmer	nt: n/o MacArth	ur Blvd.									
SITE	SPECIFIC IN	PUT DATA							L INPUTS	S	
Highway Data				Si	ite Con	ditions (l	Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 5	2,120 vehicles	3				A	utos:	15		
Peak Hour	Percentage:	10%			Med	dium Truc	:ks (2 A	xles):	15		
Peak H	our Volume:	5,212 vehicles	5		Hea	avy Truck	's (3+ A.	xles):	15		
Ve	hicle Speed:	50 mph		V	ehicle I	<i>lix</i>					
Near/Far Lai	ne Distance:	88 feet		-		cleTvpe		Day	Evening	Night	Daily
Site Data					1011			7.5%	v	9.6%	
		0.0 feet			Me	dium Tru		34.8%		10.3%	1.84%
вал Barrier Type (0-W	rier Height:	0.0 reet				leavy Tru		36.5%		10.8%	0.74%
Centerline Dis		0.0 60.0 feet									
Centerline Dist		60.0 feet		N	oise So	urce Ele	vations	(in fe	eet)		
Barrier Distance		0.0 feet				Autos:	2.0	00			
Observer Height (		5.0 feet			Mediur	n Trucks:	4.0	00			
0,1	Above Pad): ad Elevation:				Heav	y Trucks:	8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation: ad Elevation:	0.0 feet 0.0 feet		1.	ano Equ	ivalent l	Distanc	o (in	foot)		
	a Elevation: Road Grade:	0.0 Teet		Le	ane Lqu	Autos:			eel)		
,	Road Grade:		-		Modium	n Trucks:					
		-90.0 degree				v Trucks:					
	Right View:	90.0 degree	:5		i ieav	y muchs.	40.5	03			
FHWA Noise Mod	el Calculations	1									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finito		-	1	Barrier Atte	-	
Autos:					Finite	Road	Fresne	31	Darrier Mill	en Bei	m Atten
Autos.	70.20	4.76		1.20	Finite	-1.20		4.85	0.0		
Medium Trucks:	70.20 81.00	4.76 -12.48		1.20 1.22	Finite		-			00	0.000
					Finite	-1.20		4.85	0.0	100	0.000
Medium Trucks:	81.00 85.38	-12.48 -16.43	barrier a	1.22 1.20		-1.20 -1.20		4.85 5.01	0.0	100	0.000
Medium Trucks: Heavy Trucks:	81.00 85.38	-12.48 -16.43		1.22 1.20	ation)	-1.20 -1.20	-	4.85 5.01	0.0	100 100 100	0.000
Medium Trucks: Heavy Trucks: Unmitigated Noise	81.00 85.38 E Levels (witho	-12.48 -16.43 <b>Dut Topo and</b> Leq Day		1.22 1.20 attenu	ation)	-1.20 -1.20 -1.20	-	4.85 5.01	0.0 0.0 0.0	00 00 00 <i>C</i>	0.000 0.000 0.000 NEL
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	81.00 85.38 E Levels (withon Leq Peak Hour	-12.48 -16.43 <b>Dut Topo and</b> Leq Day 0	Le	1.22 1.20 attenu	ation)	-1.20 -1.20 -1.20	light	4.85 5.01	0.0 0.0 0.0	00 00 00 C	0.000 0.000 0.000 NEL 74.5
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	81.00 85.38 E Levels (witho Leq Peak Hour 75.0	-12.48 -16.43 <b>but Topo and</b> Leq Day 0 5	73.1	1.22 1.20 attenu	ation) ening 71.3	-1.20 -1.20 -1.20	ight 65.3	4.85 5.01	0.0 0.0 0.0 <i>Ldn</i> 73.9	00 00 00 C	0.000 0.000 0.000 NEL 74.5 67.8
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	81.00 85.38 <b>e Levels (witho</b> Leq Peak Hour 75. 68.	-12.48 -16.43 <b>but Topo and</b> Leq Day 0 5 0	73.1 67.0	1.22 1.20 attenu	ation) ening 71.3 60.7	-1.20 -1.20 -1.20	<i>ight</i> 65.3 59.1	4.85 5.01	0.0 0.0 0.0 <i>Ldn</i> 73.9 67.6	00 00 00 <i>C</i>	0.000 0.000 0.000 NEL 74.5 67.8 68.2
Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	81.00 85.38 2 Levels (without Leg Peak Hour 75.1 68.3 69.1 76.1	-12.48 -16.43 <b>but Topo and</b> Leq Day 0 5 5 7	23.1 57.0 57.5 74.9	1.22 1.20 attenu eq Eve	ation) ening 71.3 60.7 58.5 71.9	-1.20 -1.20 -1.20 <i>Leq N</i>	<i>ight</i> 65.3 59.1 59.7 67.1	4.85 5.01 5.34	0.0 0.0 0.0 73.9 67.6 68.1 75.6	00 00 00 00 00 00 00	0.000 0.000 0.000 NEL 74.5 67.8 68.2 76.1
Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	81.00 85.38 2 Levels (without Leg Peak Hour 75.1 68.3 69.1 76.1	-12.48 -16.43 <b>uut Topo and</b> r Leq Day 0 5 0 7 <b>ntour (in feet</b> )	23.1 273.1 27.0 27.5 74.9	1.22 1.20 attenue eq Eve	ation) ening 71.3 60.7 58.5 71.9 3A	-1.20 -1.20 -1.20 <i>Leq N</i> 65 dt	ight 65.3 59.1 59.7 67.1 BA	4.85 5.01 5.34	0.0 0.0 0.0 73.9 67.6 68.1 75.6	00 00 00 00 00 00 0 0 0 0 0 0 0 0 0 0	0.000 0.000 0.000 NEL 74.5 67.8 68.2 76.1 dBA
Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	81.00 85.38 2 Levels (without Leg Peak Hour 75.1 68.3 69.1 76.1	-12.48 -16.43 <b>uut Topo and</b> r Leq Day 0 5 0 7 <b>ntour (in feet</b> ,	23.1 57.0 57.5 74.9	1.22 1.20 attenu eq Eve	ation) ening 71.3 60.7 58.5 71.9 3A	-1.20 -1.20 -1.20 <i>Leq N</i>	light 65.3 59.1 59.7 67.1 BA	4.85 5.01 5.34	0.0 0.0 0.0 73.9 67.6 68.1 75.6	00 00 00 00 5 5 5 1,	0.000 0.000 0.000 NEL 74.5 67.8 68.2 76.1

Friday, November 15, 2019

Friday, November 15, 2019

	FHW	4-RD-77-108 HI	GHWAY I	NOISE PF	REDICTIO	N MODEL			
	io: OY ne: Redhill Ave. nt: s/o MacArthu	ır Blvd.				ame: The E nber: 12282			
SITE	SPECIFIC INF	PUT DATA			NO	ISE MOD	EL INPUTS		-
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 22	2,170 vehicles				Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truck	(2 Axles)	: 15		
Peak H	our Volume: 2	2,217 vehicles		He	avy Trucks	(3+ Axles)	: 15		
Vei	hicle Speed:	50 mph	-	Vehicle	Mix				
Near/Far Lar	ne Distance:	36 feet	-		icleType	Day	Evening	Night	Daily
Site Data				10/1	Au			•	97.42%
Pa	rrier Heiaht:	0.0 feet		Me	edium Truc	ks: 84.8	6 4.9%	10.3%	1.84%
Barrier Type (0-W		0.0		ŀ	Heavy Truc	ks: 86.59	6 2.7%	10.8%	0.74%
Centerline Dis		40.0 feet	-	Noise O		ations (in	(		
Centerline Dist.	to Observer:	40.0 feet	-	Noise So	Autos:	2.000	reet)		
Barrier Distance	to Observer:	0.0 feet		Madiu	m Trucks:	2.000			
Observer Height (J	Above Pad):	5.0 feet			v Trucks:	4.000	Grade Adju	istmont.	0.0
Pa	ad Elevation:	0.0 feet			,			isunoni.	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq		istance (in	feet)		
I	Road Grade:	0.0%			Autos:	35.847			
	Left View:	-90.0 degrees			m Trucks:	35.735			
	Right View:	90.0 degrees		Heav	y Trucks:	35.847			
FHWA Noise Mode	el Calculations								-
VehicleType		Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	n Bern	n Atten
Autos:	70.20	1.05	2.0	-	-1.20	-4.83			0.000
Medium Trucks:	81.00	-16.19	2.0	-	-1.20	-5.08			0.000
Heavy Trucks:	85.38	-20.15	2.0	-	-1.20	-5.56	0.00	00	0.000
Unmitigated Noise									
VehicleType	Leq Peak Hour			vening	Leq Ni		Ldn	CN	
Autos:	72.1		-	68.5		62.4	71.0		71.6
Medium Trucks:	65.7		-	57.8		56.3	64.7		65.0
Heavy Trucks:	66.1			55.6		56.9	65.2		65.4
Vehicle Noise:	73.8		1	69.0		64.2	72.8		73.2
Centerline Distant	ce to Noise Cor	ntour (in feet)	70	dBA	65 dB	4	60 dBA	55 d	ID A
		l di		ава 51	65 dB 132		285	55 a 61	
		CNEL		56	132		285	65	-
		CIVEL	(	0	142		300	05	5

FHWA-RD-77-108 HIGH	AY NOISE PREDICTION MODEL	
Scenario: OY Road Name: Valencia Ave. Road Segment: w/o Redhill Ave.	Project Name: The Bowery Job Number: 12282	
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS	
Highway Data	Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Adt): 8,990 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 899 vehicles	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15	
Vehicle Speed: 45 mph	Vehicle Mix	
Near/Far Lane Distance: 36 feet		aily
Site Data		429
		849
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.	749
Centerline Dist, to Barrier: 40.0 feet		
Centerline Dist. to Observer: 40.0 feet	Noise Source Elevations (in feet)	
Barrier Distance to Observer: 0.0 feet	Autos: 2.000	
	Medium Trucks: 4.000	
Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0	J
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)	
Road Grade: 0.0%	Autos: 35.847	
Left View: -90.0 degrees	Medium Trucks: 35.735	
Right View: 90.0 degrees	Heavy Trucks: 35.847	
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flow Dist	nce Finite Road Fresnel Barrier Atten Berm A	tten
Autos: 68.46 -2.41	2.06 -1.20 -4.83 0.000 0	0.00
Medium Trucks: 79.45 -19.65		0.00
Heavy Trucks: 84.25 -23.61	2.06 -1.20 -5.56 0.000 0	0.00
Unmitigated Noise Levels (without Topo and barrie	attenuation)	
VehicleType Leq Peak Hour Leq Day	eq Evening Leq Night Ldn CNEL	
Autos: 66.9 65.0	63.2 57.2 65.8	66.
Medium Trucks: 60.7 59.2	52.8 51.3 59.7	60.
Heavy Trucks: 61.5 60.1	51.1 52.3 60.7	60.
Vehicle Noise: 68.7 67.0	63.9 59.2 67.7	68.
Centerline Distance to Noise Contour (in feet)		
	70 dBA 65 dBA 60 dBA 55 dBA	1
Ldn:	28 61 131 282	
Edit		

Scenario: O	Y				Project Na	me: The E	Bowerv		
Road Name: Vi	-					ber: 1228			
Road Segment: e/	o Redhill Av	ve.							
SITE SPE	CIFIC INP	UT DATA			NO	ISE MOD	EL INPUTS	5	
Highway Data				Site Co	nditions (H	ard = 10, S	oft = 15)		
Average Daily Traffi	c (Adt): 12	,040 vehicles				Autos	: 15		
Peak Hour Perce	entage:	10%		M	edium Truck	s (2 Axles)	: 15		
Peak Hour V	/olume: 1	,204 vehicles		H	eavy Trucks	(3+ Axles)	: 15		
Vehicle	Speed:	45 mph		Vehicle	Mix				
Near/Far Lane Di	stance:	36 feet			hicleType	Dav	Evening	Niaht Da	aily
Site Data					Aut		v	9.6% 97.	
Barrier	Heiaht <sup>.</sup>	0.0 feet		٨	ledium Truc	ks: 84.8	% 4.9%		.849
Barrier Type (0-Wall, 1-		0.0			Heavy Truc	ks: 86.5	% 2.7%	10.8% 0.	749
Centerline Dist. to		40.0 feet		Noise S	ource Elev	ations (in	foot)		
Centerline Dist. to Ob	server:	40.0 feet		Noise a	Autos:	2.000	1001)		
Barrier Distance to Ob	server:	0.0 feet		Madi	im Trucks:	2.000			
Observer Height (Abov	e Pad):	5.0 feet			vy Trucks:	4.000	Grada Adi	ustment: 0.0	1
Pad Ele	evation:	0.0 feet		1100	vy mucho.	0.000	endde maj		
Road Ele	evation:	0.0 feet		Lane E	quivalent D	istance (in	feet)		
Road	Grade:	0.0%			Autos:	35.847			
Le	ft View:	-90.0 degrees	5	Media	ım Trucks:	35.735			
Righ	ht View:	90.0 degrees	5	Hea	vy Trucks:	35.847			
FHWA Noise Model Ca	lculations			1					
VehicleType RI	EMEL 1	Traffic Flow	Distanc	e Finite	e Road	Fresnel	Barrier Atte	en Berm At	tter
Autos:	68.46	-1.14		2.06	-1.20	-4.83	0.0	00 0	0.00
Medium Trucks:	79.45	-18.38	:	2.08	-1.20	-5.08	0.0	00 0	0.00
Heavy Trucks:	84.25	-22.34	:	2.06	-1.20	-5.56	0.0	00 0	0.00
Unmitigated Noise Lev		it Topo and b	arrier at	tenuation)					
	Peak Hour	Leq Day		q Evening	Leq Nig		Ldn	CNEL	
,, ,			6.3	64.5		58.5	67.1		67.
Autos:	68.2	-		54.1		52.5	61.0		61.
Autos: Medium Trucks:	62.0	6	0.4	-					62.
Autos: Medium Trucks: Heavy Trucks:	62.0 62.8	6	1.4	52.3	·	53.6	61.9		
Autos: Medium Trucks:	62.0	6		52.3 65.1	·	53.6 60.4	69.0		69.
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	62.0 62.8 70.0	6 6 6	1.4 8.3	65.1	-   	60.4	69.0	)	
Autos: Medium Trucks: Heavy Trucks:	62.0 62.8 70.0	6 6 6 tour (in feet)	1.4 8.3	65. 70 dBA	65 dB	60.4	69.0	55 dBA	69. \
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	62.0 62.8 70.0	6 6 6 tour (in feet)	1.4 B.3 dn:	65.1	-   	60.4	69.0	)	

	FHW	A-RD-77-108 HI	GHWAY	NOISE PI	REDICTIO		EL			
Scenar	io: OY				Project I	Vame: Th	ne Bowe	ry		
Road Nam	e: Warner Ave.				Job Nu	mber: 12	282			
Road Segmer	nt: w/o Grand A	ve.								
	SPECIFIC INF	PUT DATA				OISE MO			5	
Highway Data				Site Cor	nditions (	Hard = 1	0, Soft =	: 15)		
Average Daily	Traffic (Adt): 25	5,840 vehicles				A	utos:	15		
Peak Hour	Percentage:	10%		Me	dium True	cks (2 Ax	les):	15		
Peak H	lour Volume:	2,584 vehicles		He	avy Truck	ks (3+ Ax	les):	15		
Ve	hicle Speed:	45 mph		Vehicle	Mix					
Near/Far Lai	ne Distance:	36 feet			icleType	D	ay Ev	ening	Night	Daily
Site Data				10/1				12.9%	v	97.42%
Pa	rrier Height:	0.0 feet		м	edium Tru	ucks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			Heavy Tru	ucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		40.0 feet								
Centerline Dist.		40.0 feet		Noise S	ource Ele					
Barrier Distance	to Observer:	0.0 feet			Autos					
Observer Height (	Above Pad):	5.0 feet			m Trucks.					
	ad Elevation:	0.0 feet		Hear	vy Trucks.	: 8.00	6 G/a	ade Adji	ustment:	0.0
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet	)		
1	Road Grade:	0.0%			Autos	: 35.84	17			
	Left View:	-90.0 degrees		Mediu	m Trucks.	: 35.73	85			
	Right View:	90.0 degrees		Hear	vy Trucks.	35.84	17			
FHWA Noise Mod	el Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresne	l Bar	rier Atte	en Ber	m Atten
Autos:	68.46	2.17	2.0	06	-1.20	-4	1.83	0.0	00	0.000
Medium Trucks:	79.45	-15.07	2.0	08	-1.20	-8	5.08	0.0	00	0.000
Heavy Trucks:	84.25	-19.02	2.0	06	-1.20	-8	5.56	0.0	00	0.000
Unmitigated Noise			nrrier atte	nuation)						
, i	Leq Peak Hour			Evening	Leq N	•	Ld			VEL
Autos:	71.5			67.8		61.8		70.4		71.0
Medium Trucks:	65.3			57.4		55.9		64.3		64.5
Heavy Trucks:	66.1			55.6		56.9		65.2		65.4
Vehicle Noise:	73.3	3 71	.6	68.4		63.8		72.3		72.8
Centerline Distant	ce to Noise Cor	ntour (in feet)								
				dBA	65 d		60 d			dBA
		La		57	12		26			70
		CNE	L:	61	13	2	28	4	6	11

Friday, November 15, 2019

Friday, November 15, 2019

	FHWA-	-RD-77-108	HIG	HWAY N	IOISE P	REDICT		DEL			
Scenario: OY Road Name: Warner Road Segment: e/o Gra		÷					t Name: Number:		owery		
SITE SPECIFIC	INPL	JT DATA				, r	NOISE N	/ODE	L INPUT	5	
Highway Data					Site Col	nditions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Ad Peak Hour Percentag		220 vehicle 10%	s		Me	edium Tr	ucks (2 Å	Autos: lxles):	15 15		
Peak Hour Volum	e: 2,4	422 vehicle	s		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Spee	d:	45 mph		-	Vehicle	Mix					
Near/Far Lane Distanc	э:	36 feet		F		nicleType	<u>م</u>	Dav	Evening	Night	Daily
Site Data					10.			77.5%	•	9.6%	
Barrier Heigh	<i>t</i> •	0.0 feet			N	ledium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Bern	):	0.0				Heavy 7	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrie		40.0 feet			Noise S	ource E	levation	s (in fe	et)		
Centerline Dist. to Observe		40.0 feet				Auto	os: 2.0	000			
Barrier Distance to Observe		0.0 feet			Mediu	m Truck	(s: 4.0	000			
Observer Height (Above Pac Pad Elevatio		5.0 feet 0.0 feet			Hea	vy Truck	ks: 8.0	006	Grade Adj	ustment	0.0
Road Elevatio	n:	0.0 feet		1	Lane Eq	uivalen	t Distan	ce (in i	feet)		
Road Grad	e:	0.0%				Auto	os: 35.	347			
Left Vie	N: -	90.0 degree	es		Mediu	m Truck	(s: 35.)	735			
Right Vie	N:	90.0 degree	es		Hea	vy Truck	ks: 35.	347			
FHWA Noise Model Calcula	ions										
VehicleType REMEL	TI	raffic Flow	Di	istance	Finite	Road	Fresr	el	Barrier Att	en Ber	m Atten
	.46	1.89		2.0	6	-1.20		-4.83	0.0	00	0.000
	.45	-15.35		2.0	-	-1.20		-5.08	0.0		0.000
	.25	-19.30		2.0	-	-1.20		-5.56	0.0	00	0.000
Unmitigated Noise Levels (										-	
VehicleType Leq Peak		Leq Day		Leq E	vening	,	Night		Ldn		VEL
Autos:	71.2		69.3 63.5		67.6		61.5		70.1 64.0		70.7
Medium Trucks:	65.0				57.1		55.6				64.3
Heavy Trucks: Vehicle Noise:	65.8 73.1		64.4 71.3		55.4 68.2		56.6 63.5		65.0		65.1 72.5
Centerline Distance to Nois					08.2		63.5	•	72.0	1	72.5
Centerline Distance to Nois	e Cont	our (in reet	, 	70 0	dBA	65	dBA	f	0 dBA	55	dBA
			Ldn:		5		18		253		46
			VEL:		9		126		272		86

		/A-RD-77-108	niGr	WAT NU							
Scenario							Name: T		ery		
	e: Warner Ave					Job N	umber: 1	2282			
Road Segmen	t: w/o Redhill	Ave.									
	SPECIFIC IN	PUT DATA					IOISE M			5	
Highway Data				s	ite Con	ditions	(Hard = 1	0, Soft	= 15)		
Average Daily 1	Traffic (Adt): 2	4,330 vehicle	s				A	utos:	15		
Peak Hour I	Percentage:	10%			Mec	lium Tr	ucks (2 Ax	des):	15		
Peak Ho	our Volume:	2,433 vehicles	s		Hea	avy Tru	cks (3+ A)	des):	15		
Veh	nicle Speed:	45 mph		V	ehicle N	Niv					
Near/Far Lan	ne Distance:	88 feet		v		cleType		Day E	vening	Night	Daily
Site Data					Verm			7.5%	12.9%	9.6%	
					Mo	ر dium T		4.8%	4.9%	10.3%	1.849
	rier Height:	0.0 feet						4.0% 6.5%	4.9% 2.7%	10.3%	0.749
Barrier Type (0-Wa	. ,	0.0			h	eavy I	uuks. 8	0.070	2.170	10.0%	0.745
Centerline Dis		60.0 feet		N	loise So	urce E	levations	(in feet	)		
Centerline Dist. t		60.0 feet				Auto	s: 2.0	00			
Barrier Distance t		0.0 feet			Mediun	n Truck	s: 4.0	00			
Observer Height (A	,	5.0 feet			Heav	/ Truck	s: 8.0	06 G	rade Adji	ustment:	0.0
	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		L	ane Equ		t Distance		et)		
F	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree	es		Mediun						
	Right View:	90.0 degree	es		Heav	/ Truck	s: 40.9	03			
FHWA Noise Mode	el Calculations	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	l Ba	arrier Atte	en Ber	m Atter
Autos:	68.46	1.91		1.20		-1.20	-	4.85	0.0	00	0.00
Medium Trucks:	79.45	-15.33		1.22		-1.20	-	5.01	0.0	00	0.00
Heavy Trucks:	84.25	-19.28		1.20		-1.20	-	5.34	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er attenu	uation)						
VehicleType	Leq Peak Hou	r Leq Day	r	Leq Eve	ening	Leq	Night	L	dn	CI	VEL
Autos:	70.	.4	68.5		66.7		60.7		69.3		69
Medium Trucks:	64	.1	62.6		56.3		54.7		63.2		63
Heavy Trucks:	65	.0	63.6		54.5		55.8		64.1		64
Vehicle Noise:	72	.2	70.5		67.3		62.6		71.2		71
Centerline Distanc	e to Noise Co	ontour (in feet	)								
				70 di	BA	65	dBA	60	dBA	55	dBA
			Ldn:	72		1	55	33	34	7	20
			<b></b>	12			00				20

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGHW	AY NO	OISE PR	EDICTIO	NMOD	EL			
Scenar	io: OY					Project N	ame: T	he Bo	wery		
	e: Warner Av					Job Nur	nber: 1	2282			
Road Segme	nt: e/o Redhill	Ave.									
	SPECIFIC IN	IPUT DATA							L INPUTS	5	
Highway Data				S	Site Con	ditions (H	lard = 1	0, So	ft = 15)		
Average Daily	Traffic (Adt):	16,260 vehicle	s				A	utos:	15		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 Ax	des):	15		
Peak H	our Volume:	1,626 vehicle	s		Hea	avy Trucks	s (3+ Ax	(les):	15		
Ve	hicle Speed:	50 mph		v	/ehicle I	Nix					
Near/Far La	ne Distance:	88 feet		-		cleType	L	Day	Evening	Night	Daily
Site Data						Au	tos: 7	7.5%	12.9%	9.6%	97.42%
Bai	rrier Height:	0.0 feet			Me	edium True	cks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			F	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		60.0 feet		N	loise So	urce Elev	ations	(in fe	et)		
Centerline Dist.		60.0 feet				Autos:	2.00		.,		
Barrier Distance		0.0 feet			Mediur	n Trucks:	4.00	00			
Observer Height (	,	5.0 feet				v Trucks:	8.00		Grade Adj	ustment:	0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equ	uivalent D			eet)		
	Road Grade:	0.0%				Autos:	40.90	-			
	Left View:	-90.0 degre				n Trucks:	40.80				
	Right View:	90.0 degre	es		Heav	y Trucks:	40.90	)3			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar		Finite		Fresne		Barrier Atte		m Atten
Autos:	70.20	-0.30		1.20		-1.20		4.85	0.0		0.000
Medium Trucks:	81.00	-17.54		1.22		-1.20		5.01	0.0		0.000
Heavy Trucks:	85.38	-21.49		1.20		-1.20	-	5.34	0.0	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			eq Ev	ening	Leq Ni	-		Ldn		VEL
Autos:	69		68.0		66.2		60.2		68.8		69.4
Medium Trucks:	63		62.0		55.6		54.1		62.5		62.8
Heavy Trucks:	63		62.5		53.4		54.7		63.0		63.2
	71	.6	69.9		66.8		62.0		70.6		71.0
Vehicle Noise:											
Vehicle Noise: Centerline Distant	ce to Noise C	ontour (in feel	)								
	ce to Noise C	ontour (in feel		70 di		65 dE			0 dBA		dBA
	ce to Noise Co	•	Ldn:	70 di 66 70	6	65 dE 141 152			0 dBA 304 327	6	dBA 55 04

FHWA-RD-77-108 HIG	HWAY	NOISE PI	REDICTI	ON MODE	L	
Scenario: OY				Name: Th		
Road Name: Dyer Rd.			Job Ni	Imber: 12	282	
Road Segment: w/o Redhill Ave.						
SITE SPECIFIC INPUT DATA					DEL INPUTS	
Highway Data		Site Cor	ditions	(Hard = 10	), Soft = 15)	
Average Daily Traffic (Adt): 29,320 vehicles				Au	tos: 15	
Peak Hour Percentage: 10%		Me	dium Tru	cks (2 Axl	es <i>):</i> 15	
Peak Hour Volume: 2,932 vehicles		He	avy Truc	ks (3+ Axl	es): 15	
Vehicle Speed: 40 mph	F	Vehicle	Mix			
Near/Far Lane Distance: 88 feet	ŀ		icleType	Da	ay Evening	Night Daily
Site Data					5% 12.9%	9.6% 97.42%
Barrier Height: 0.0 feet		М	edium Tr	ucks: 84	.8% 4.9%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Tr	ucks: 86	.5% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier: 60.0 feet	-					
Centerline Dist. to Observer: 60.0 feet	-	Noise Se		evations (	-	
Barrier Distance to Observer: 0.0 feet			Autos			
Observer Height (Above Pad): 5.0 feet			m Trucks		-	
Pad Elevation: 0.0 feet		Heav	y Trucks	8.00	5 Grade Adju	stment: 0.0
Road Elevation: 0.0 feet		Lane Eq	uivalent	Distance	(in feet)	
Road Grade: 0.0%	ľ		Autos	: 40.90	2	
Left View: -90.0 degrees		Mediu	m Trucks	: 40.80	4	
Right View: 90.0 degrees		Heav	y Trucks	40.90	3	
FHWA Noise Model Calculations						
VehicleType REMEL Traffic Flow D	listance	Finite	Road	Fresnel	Barrier Atte	n Berm Atten
Autos: 66.51 3.23	1.2	20	-1.20	-4	.85 0.00	0.000
Medium Trucks: 77.72 -14.01	1.2	22	-1.20	-5	.01 0.00	0.000
Heavy Trucks: 82.99 -17.96	1.2	20	-1.20	-5	.34 0.00	0.000
Unmitigated Noise Levels (without Topo and barr	rier attei	nuation)				
VehicleType Leq Peak Hour Leq Day		vening	Leq I	•	Ldn	CNEL
Autos: 69.7 67.9		66.1		60.0	68.7	69.3
Medium Trucks: 63.7 62.2		55.9		54.3	62.8	63.0
				55.8	64.2	64.3
Heavy Trucks: 65.0 63.6		54.6				
Vehicle Noise: 71.8 70.0		54.6 66.7		62.2	70.7	71.2
	)	66.7		62.2		
Vehicle Noise: 71.8 70.0 Centerline Distance to Noise Contour (in feet)	70	66.7 dBA	65 (	62.2 //BA	60 dBA	55 dBA
Vehicle Noise: 71.8 70.0	70	66.7		62.2 IBA		71.2 55 dBA 672 719

Friday, November 15, 2019

	FHW	A-RD-77-108 HI	GHWAY I	NOISE PF	REDICTION	MODEL		
	io: OY e: Barranca Pk nt: e/o Redhill A					ame: The B aber: 12282		
SITE	SPECIFIC INF	PUT DATA			NO	ISE MODE	L INPUTS	
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)	
• •	Traffic (Adt): 35					Autos.		
	Percentage:	10%				s (2 Axles):		
		3,591 vehicles		He	avy Trucks	(3+ Axles):	15	
	hicle Speed:	50 mph		Vehicle I	Mix			
Near/Far Lar	ne Distance:	106 feet	ŀ		icleType	Day	Evening	Night Daily
Site Data					Aut	,		9.6% 97.42%
Bai	rier Heiaht:	0.0 feet		Me	edium Truc	ks: 84.8%	4.9%	10.3% 1.84%
Barrier Type (0-W		0.0		ŀ	leavy Truc	ks: 86.5%	2.7%	10.8% 0.74%
Centerline Dis		70.0 feet	-	Noise So	ource Elev	ations (in f	eet)	
Centerline Dist.		70.0 feet	ľ		Autos:	2.000		
Barrier Distance		0.0 feet		Mediur	m Trucks:	4.000		
Observer Height (		5.0 feet		Heav	y Trucks:	8.006	Grade Adju	stment: 0.0
	ad Elevation:	0.0 feet	-					
	ad Elevation:	0.0 feet	-	Lane Eq		istance (in	feet)	
,	Road Grade:	0.0%			Autos:	45.826		
	Left View: Right View:	-90.0 degrees 90.0 degrees			m Trucks: vy Trucks:	45.738 45.826		
	•	00.0 009.000						
FHWA Noise Mode VehicleType		Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	n Berm Atten
Autos:	70.20	3.14	0.4		-1.20	-4.86	0.00	
Medium Trucks:	81.00	-14.09	0.4		-1.20	-5.00	0.00	
Heavy Trucks:	85.38	-18.05	0.4	-	-1.20	-5.28	0.00	
Unmitigated Noise	e Levels (witho	ut Topo and ba	rrier attei	nuation)				
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq Nig	pht	Ldn	CNEL
Autos:	72.6	3 70.	.7	68.9		62.9	71.5	72.
Medium Trucks:	66.2	2 64.	.7	58.3		56.8	65.2	65.
Heavy Trucks:	66.6		-	56.1		57.4	65.7	65.
Vehicle Noise:	74.3	, ,5	.6	69.5		64.7	73.3	73.
Centerline Distant	ce to Noise Cor	ntour (in feet)						
				dBA	65 dB.	A	60 dBA	55 dBA
		Ldi CNFI		16	249		537	1,157
		CNE	L: 1	24	268		577	1,243

	FHV	/A-RD-77-108	HIGH	WAY N	OISE PF	REDICTI	ON MODE	L	
Scenar	io: OY					Project	Name: The	Bowery	
Road Nam	e: Barranca P	kwy.				Job N	umber: 122	82	
Road Segme	nt: w/o Tustin I	Ranch Rd.							
	SPECIFIC IN	PUT DATA						DEL INPUTS	6
Highway Data				5	Site Con	ditions	(Hard = 10	Soft = 15)	
Average Daily	Traffic (Adt): 3	8,240 vehicle	6				Au	os: 15	
Peak Hour	Percentage:	10%			Me	dium Tru	icks (2 Axle	s): 15	
Peak H	lour Volume:	3,824 vehicles	6		He	avy Truc	ks (3+ Axle	s): 15	
Ve	hicle Speed:	50 mph		1	Vehicle I	Mix			
Near/Far La	ne Distance:	106 feet		-		icleType	Da	y Evening	Night Daily
Site Data					Ven			5% 12.9%	9.6% 97.42
					M	, dium Ti		8% 4.9%	10.3% 1.849
	rrier Height:	0.0 feet				leavy Ti		5% 2.7%	10.8% 0.749
Barrier Type (0-W	. ,	0.0							10.070 0.74
Centerline Dist.		70.0 feet		1	Noise So	ource El	evations (i	n feet)	
Barrier Distance		70.0 feet				Auto	s: 2.000		
		0.0 feet 5.0 feet			Mediur	n Truck	s: 4.000		
Observer Height (	,				Heav	y Truck	s: 8.006	Grade Adj	ustment: 0.0
	ad Elevation: ad Elevation:	0.0 feet			ano Ea	uivalon	Distance	(in foot)	
	Road Grade:	0.0 feet 0.0%		-	Lane Ly	Auto		,	
	Left View:				Modiu	n Truck			
	Right View:	-90.0 degree				y Truck			
	Ngni view.	90.0 degree	:5		near	y muon	5. 40.020	·	
FHWA Noise Mod	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	70.20	3.42		0.46	6	-1.20	-4.	86 0.0	0.00
Medium Trucks:	81.00	-13.82		0.48	В	-1.20	-5.	00 0.0	0.00
Heavy Trucks:	85.38	-17.78		0.46	6	-1.20	-5.	28 0.0	00 0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie						
VehicleType	Leq Peak Hou	1 1		Leq Ev		Leq	Night	Ldn	CNEL
Autos:	. –		71.0		69.2		63.2	71.8	
Medium Trucks:			64.9		58.6		57.0	65.5	
Heavy Trucks:			65.4		56.4		57.7	66.0	
Vehicle Noise:		-	72.8		69.8		65.0	73.5	74
	ce to Noise Co	ontour (in feet	)						
Centerline Distan				70 c	:IBA	65	dBA	60 dBA	55 dBA
Centerline Distan			∟						
Centerline Distan			Ldn: VFL :	12			50 79	560 602	1,207 1,296

	FHW	A-RD-77-108 I	HIGHW#	AY NC	ISE PR	EDICTIO	N MODE	L			
	o: OY e: MacArthur E ht: w/o Redhill /					Project Na Job Nun	ame: Th nber: 12		wery		
	SPECIFIC IN	PUT DATA							INPUTS	6	
Highway Data				S	ite Con	ditions (H	lard = 10	), Sof	ʻt = 15)		
Average Daily	Traffic (Adt): 3	3,190 vehicles						tos:	15		
Peak Hour I		10%				lium Truci			15		
		3,319 vehicles			Hea	avy Trucks	6 (3+ Axl	es):	15		
	nicle Speed:	50 mph		V	ehicle N	lix					
Near/Far Lar	e Distance:	106 feet			Vehi	cleType	Da	ay I	Evening	Night	Daily
Site Data						Au	tos: 77	.5%	12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet			Me	dium Truc	ks: 84	.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0			H	leavy Truc	cks: 86	.5%	2.7%	10.8%	0.74%
Centerline Dis		70.0 feet		N	oise So	urce Elev	ations (	in fee	et)		
Centerline Dist. t		70.0 feet				Autos:	2.00	)	,		
Barrier Distance t		0.0 feet			Mediur	n Trucks:	4.000	5			
Observer Height (/	,	5.0 feet			Heav	y Trucks:	8.00	3 C	Grade Adji	ustment.	0.0
	d Elevation:	0.0 feet				dural and D		11-1			
	d Elevation:	0.0 feet		La	ane Equ	ivalent D			et)		
F	Road Grade:	0.0%				Autos: n Trucks:	45.82 45.73	-			
	Left View: Right View:	-90.0 degree 90.0 degree				y Trucks:	45.82				
FHWA Noise Mode	- A Calculations	-									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresnel	E	Barrier Atte	en Ber	m Atten
Autos:	70.20	2.80		0.46		-1.20	-4	.86	0.0	00	0.000
Medium Trucks:	81.00	-14.44		0.48		-1.20	-5	.00	0.0	00	0.000
Heavy Trucks:	85.38	-18.39		0.46		-1.20	-5	.28	0.0	00	0.000
Unmitigated Noise											
	Leq Peak Hou			eq Eve	~	Leq Ni	-		Ldn	-	NEL
Autos:	72.		0.4		68.6		62.6		71.2		71.8
Medium Trucks:	65.		4.3		58.0		56.4		64.9		65.1
Heavy Trucks:	66.		4.8		55.8		57.0		65.4		65.5
Vehicle Noise:	74.		2.2		69.2		64.4		72.9	)	73.4
	to Noiso Co	ntour (in feet)		70.0		65 dF			) dBA		dBA
Centerline Distance	e to Noise Co										
Centerline Distanc	e 10 Noise Co			70 dE							
Centerline Distanc	e to Noise Co		.dn: FI :	110 118		237 254		1	510 548	1,	098

		/A-RD-77-108									
Scenar	io: OY					Project	Name:	The B	owery		
Road Nan	ne: MacArthur	Blvd.				Job N	umber:	12282	,		
Road Segme	nt: e/o Redhill	Ave.									
SITE	SPECIFIC IN	PUT DATA				N	IOISE I	MODE	L INPUT	s	
Highway Data				4	Site Con	ditions	(Hard =	: 10, Se	oft = 15)		
Average Daily	Traffic (Adt): 2	9,080 vehicle	s					Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	icks (2	Axles):	15		
Peak H	lour Volume:	2,908 vehicle	s		He	avy Truo	cks (3+ )	Axles):	15		
Ve	hicle Speed:	50 mph		h	Vehicle I	Mix					
Near/Far La	ne Distance:	106 feet		F	Veh	cleType		Day	Evening	Night	Daily
Site Data							Autos:	77.5%	v	v	97.42%
Ba	rrier Height:	0.0 feet			Me	edium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			ŀ	leavy T	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di		70.0 feet		H	Noise So				41		
Centerline Dist.	to Observer:	70.0 feet		Ľ	Noise Sc				eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		000			
Observer Height	Above Pad):	5.0 feet				n Truck			Grade Ad		0.0
P	ad Elevation:	0.0 feet			Heav	y Truck	5. 8.	006	Grade Adj	usunem.	0.0
Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%		Γ		Auto	s: 45	.826			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 45	738			
	Right View:	90.0 degree	es		Heav	y Truck	s: 45	.826			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	o ( )	Fres		Barrier Att		
						Road	riesi	nel	Darrier Mu	en Ber	m Atten
Autos:	70.20	2.23		0.46		-1.20	Flesi	nel -4.86		en Ber 000	
Autos: Medium Trucks:		2.23 -15.01		0.40 0.41	6		ries		0.0		0.000
	81.00	=-==			6	-1.20	Fiesi	-4.86	0.0	000	0.000
Medium Trucks: Heavy Trucks:	81.00 85.38	-15.01 -18.97	barrier	0.4	6 8 6	-1.20 -1.20	Fiesi	-4.86 -5.00	0.0	000	0.000
Medium Trucks: Heavy Trucks:	81.00 85.38 <b>e Levels (with</b> Leq Peak Hou	-15.01 -18.97 Dut Topo and r Leq Day		0.44 0.44 atten	6 8 6	-1.20 -1.20 -1.20	Night	-4.86 -5.00	0.0 0.0 0.0	000 000 000 <i>Cl</i>	0.000 0.000 0.000
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	81.00 85.38 e Levels (with Leq Peak Hou 71	-15.01 -18.97 Dout Topo and r Leq Day .7	, L 69.8	0.44 0.44 atten	6 8 6 <i>wening</i> 68.0	-1.20 -1.20 -1.20	Night 62.	-4.86 -5.00 -5.28	0.0 0.0 0.0 <i>Ldn</i> 70.6	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 71.2
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	81.00 85.38 <i>e Levels (with</i> <i>Leq Peak Hou</i> 71 65	-15.01 -18.97 out Topo and r Leq Day .7 .3	69.8 63.8	0.44 0.44 atten	6 8 6 <i>vening</i> 68.0 57.4	-1.20 -1.20 -1.20	Night 62. 55.	-4.86 -5.00 -5.28 0 9	0.0 0.0 0.0 <i>Ldn</i> 70.6 64.3	000 000 000 <i>C1</i> 3	0.000 0.000 0.000 <u>VEL</u> 71.2 64.5
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	81.00 85.38 e Levels (with Leq Peak Hou 71 65 65	-15.01 -18.97 <b>Dut Topo and</b> r Leq Day .7 .3 .7	69.8 63.8 64.3	0.44 0.44 atten	6 8 6 <i>vening</i> 68.0 57.4 55.2	-1.20 -1.20 -1.20	Night 62. 55. 56.	-4.86 -5.00 -5.28 0 9 5	0.0 0.0 0.0 <i>Ldn</i> 70.6 64.3 64.8	000 000 000 <i>C1</i> 3 3	0.000 0.000 0.000 VEL 71.2 64.5 64.5
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	81.00 85.38 e Levels (with Leq Peak Hou 71 65 65	-15.01 -18.97 <b>Dut Topo and</b> r Leq Day .7 .3 .7	69.8 63.8	0.44 0.44 atten	6 8 6 <i>vening</i> 68.0 57.4	-1.20 -1.20 -1.20	Night 62. 55.	-4.86 -5.00 -5.28 0 9 5	0.0 0.0 0.0 <i>Ldn</i> 70.6 64.3	000 000 000 <i>C1</i> 3 3	0.000 0.000 0.000 VEL 71.2 64.5 64.5
Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	81.00 85.38 e Levels (with Leq Peak Hou 71 65 65 73	-15.01 -18.97 <b>Dut Topo and</b> r Leq Day .7 .3 .3 .7 .4	69.8 63.8 64.3 71.6	0.44 0.44 atten .eq Ev	6 8 6 <i>vening</i> 68.0 57.4 55.2 68.6	-1.20 -1.20 -1.20 <i>Leq</i>	Night 62. 55. 56. 63.	-4.86 -5.00 -5.28 0 9 5 8	0.0 0.0 0.0 70.6 64.3 64.8 72.4	000 000 000 200 200 200 200 200 200 200	0.000 0.000 0.000 VEL 71.2 64.5 64.5 72.8
Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	81.00 85.38 e Levels (with Leq Peak Hou 71 65 65 73	-15.01 -18.97 put Topo and r Leq Day .7 .3 .7 .4 mntour (in feet	2010 C C C C C C C C C C C C C C C C C C	0.44 0.44 atten .eq Ev	6 8 6 <i>vening</i> 68.0 57.4 55.2 68.6	-1.20 -1.20 -1.20 <i>Leq</i> 65	Night 62. 55. 56. 63. dBA	-4.86 -5.00 -5.28 0 9 5 8	0.0 0.0 0.0 70.6 64.3 64.8 72.4	000 000 000 3 3 3 4 55	0.000 0.000 0.000 VEL 71.2 64.5 72.8 dBA
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	81.00 85.38 e Levels (with Leq Peak Hou 71 65 65 73	-15.01 -18.97 put Topo and r Leq Day .7 .3 .7 .4 ntour (in feet	69.8 63.8 64.3 71.6	0.44 0.44 atten .eq Ev	6 8 6 <i>vening</i> 68.0 57.4 55.2 68.6 <i>dBA</i>	-1.20 -1.20 -1.20 <i>Leq</i> 65	Night 62. 55. 56. 63.	-4.86 -5.00 -5.28 0 9 5 8	0.0 0.0 0.0 70.6 64.3 64.8 72.4	000 000 000 <i>CI</i> 3 3 3 4 4 55 1,1	0.000 0.000 0.000 VEL 71.2 64.5 64.5 72.8

Friday, November 15, 2019

Friday, November 15, 2019

Friday, November 15, 2019

108

	FHV	VA-RD-77-108	HIGHW	AY NC	DISE PR	REDICT	ION MC	DEL				
	o: OY + P e: Grand Ave. nt: s/o Warner						t Name: lumber:					
SITE	SPECIFIC IN	IPUT DATA			NOISE MODEL INPUTS							
Highway Data				S	ite Cor	ditions	(Hard =	= 10, S	oft = 15)			
Average Daily Peak Hour	Traffic (Adt): 2 Percentage:	21,670 vehicle 10%	s		Me	dium Tr	ucks (2	Autos Axles)				
	our Volume:	2.167 vehicle	s				cks (3+	/				
	nicle Speed:	45 mph	-			· ·		,				
Near/Far Lar		88 feet		V	ehicle							
					Veh	icleType		Day	Evening	Night	Daily	
Site Data							Autos:	77.5%		9.6%		
	rier Height:	0.0 feet				edium T		86.5%		10.3%		
Barrier Type (0-W	. ,	0.0				leavy T	rucks:	80.37	0 2.7%	10.8%	0.74%	
Centerline Dis		60.0 feet		N	oise Se	ource E	levatior	ns (in f	ieet)			
Centerline Dist. t		60.0 feet				Auto	os: 2	.000				
Barrier Distance to Observer: 0.0 feet					Mediu	m Truck	s: 4	.000				
Observer Height (/	,	5.0 feet			Heav	y Truck	.s: 8	.006	Grade Adj	iustmen	t: 0.0	
	d Elevation: d Elevation:	0.0 feet		1	ano Eo	uivalor	t Distar	nco (in	foot)			
	a Elevation: Road Grade:	0.0 feet 0.0%		-	апе сч	Auto		.902	leel)			
r	Left View:	-90.0 degre			Madiu	m Truck		.902				
	Right View:	90.0 degre				ry Truck		.903				
FHWA Noise Mode	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distar		Finite	Road	Fres	nel	Barrier Att	en Be	erm Atten	
Autos:	68.46	1.41		1.20		-1.20		-4.85		000	0.000	
Medium Trucks:	79.45	-15.83		1.22		-1.20		-5.01		000	0.000	
Heavy Trucks:	84.25	-19.79		1.20		-1.20		-5.34	0.0	000	0.000	
Unmitigated Noise						1.	h E ada t	-	1 da			
VehicleType Autos:	Leg Peak Hou 69		/ L 68.0	eq Eve	ening 66.2	Leq	Night 60		Ldn 68.8		NEL 69.4	
Autos: Medium Trucks:	69		68.0 62.1		55.8		60. 54.	-	68.8		69.4	
Heavy Trucks:	63		62.1 63.0		55.8 54.0		54. 55		62.7		62.9	
Vehicle Noise:	71	-	70.0		54.0 66.8		55. 62.	-	70.7	-	71.1	
Centerline Distanc	e to Noise Co	ontour (in fee			50.0		02.					
2-stance			/	70 dE	BA	65	dBA		60 dBA	5	5 dBA	
			Ldn:	67			44	-1	309		666	
		С	NEL:	71		1	54		332		715	

	FHV	/A-RD-77-108	HIGH\	WAY N	OISE PR	REDICTI	ON MODE						
Scenar	io: OY + P					Project	Name: The	Bowery					
Road Narr	e: Newport Av	e.				Job N	umber: 122	82					
Road Segme	nt: n/o Valcend	ia Ave.											
	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)								
Highway Data				5	Site Con	ditions	(Hard = 10	Soft = 15)					
Average Daily	Traffic (Adt): 1	2,150 vehicles	s				Aut	os: 15					
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 Axle	s): 15					
Peak H	lour Volume:	1,215 vehicles	s		Heavy Trucks (3+ Axles): 15								
Ve	hicle Speed:	40 mph		1	Vehicle I	Mix							
Near/Far La	ne Distance:	88 feet		- P		icleType	Da	y Evening	Night D	aily			
Site Data					veni			5% 12.9%		.42 <sup>°</sup>			
					Medium Trucks: 84.8% 4.9% 10.3% 1.84								
	rrier Height:	0.0 feet			Heavy Trucks: 86.5% 2.7% 10.8% 0.74								
Barrier Type (0-W	. ,	0.0			'	ieavy II	uchs. 00	J/0 2.1/0	10.070 0	./4			
Centerline Di		60.0 feet		N	Noise So	ource El	evations (i	n feet)					
Centerline Dist.		60.0 feet			Autos: 2.000								
Barrier Distance to Observer: 0.0 feet					Mediur	n Truck	s: 4.000						
Observer Height (Above Pad): 5.0 feet					Heav	y Truck	s: 8.006	Grade Ad	iustment: 0.	0			
	ad Elevation:	0.0 feet			-								
	ad Elevation:	0.0 feet		1	Lane Equ		Distance	,					
	Road Grade:	0.0%				Auto		-					
	Left View:	-90.0 degree				n Truck							
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.903						
FHWA Noise Mod	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier Att	en Berm A	tter			
Autos:	66.51	-0.59		1.20	D	-1.20	-4.	85 0.0	000	0.00			
Medium Trucks:	77.72	-17.83		1.22	2	-1.20 -5.		01 0.0	000	0.00			
Heavy Trucks:	82.99	-21.79		1.20	D	-1.20	-5.	34 0.0	000	0.00			
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)								
VehicleType	Leq Peak Hou	1 1		Leq Ev	•	Leq	Night	Ldn	CNEL				
Autos:			64.0		62.3		56.2	64.8		65			
Medium Trucks:		.9	58.4		52.0		50.5	59.0	)	59			
Heavy Trucks:	61	.2	59.8		50.8		52.0	60.4	1	60			
	67	.9	66.2		62.9		58.4	66.9	9	67			
Vehicle Noise:		ntour lin foot	)										
Vehicle Noise: Centerline Distan	ce to Noise Co	nitour (in reel					10.4	60 dBA	55 dB/	Λ			
	ce to Noise Co			70 a		65				<u> </u>			
	ce to Noise Co		Ldn:	70 a 37 40	7	8	0 6	173 186	373 400	-			

Friday, November 15, 2019

	FHW	A-RD-77-108 H	IIGHWA	Y NOISE F	REDICTIO				
Road Name	o: OY + P e: Redhill Ave. t: n/o Walnut A	we.				ame: The nber: 1228			
	SPECIFIC INF	PUT DATA					DEL INPUTS	5	
Highway Data				Site Co	nditions (H	lard = 10,	Soft = 15)		
Average Daily 1	raffic (Adt): 26	6,090 vehicles				Auto			
Peak Hour F		10%			edium Truc		,		
		2,609 vehicles		н	eavy Trucks	s (3+ Axles	s): 15		
	icle Speed:	40 mph		Vehicle	Mix				
Near/Far Lan	e Distance:	88 feet		Ve	hicleType	Day	/ Evening	Night	Daily
Site Data					Au	tos: 77.5	5% 12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet		/	ledium True	cks: 84.8	3% 4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			Heavy True	cks: 86.5	5% 2.7%	10.8%	0.74%
Centerline Dis		60.0 feet		Noise S	ource Elev	ations (in	i feet)		
Centerline Dist. t		60.0 feet			Autos:	2.000	,		
Barrier Distance t		0.0 feet		Medi	im Trucks:	4.000			
Observer Height (A	,	5.0 feet		Hea	vy Trucks:	8.006	Grade Adju	ustment:	0.0
	d Elevation:	0.0 feet		-					
	d Elevation:	0.0 feet		Lane E	quivalent D		n feet)		
F	Road Grade:	0.0%			Autos:	40.902			
	Left View: Right View:	-90.0 degrees 90.0 degrees			um Trucks: wy Trucks:	40.804 40.903			
FHWA Noise Mode	Calculations				-				
VehicleType		Traffic Flow	Distanc	e Finit	e Road	Fresnel	Barrier Atte	en Bern	n Atten
Autos:	66.51	2.73		1.20	-1.20	-4.8	5 0.0	00	0.000
Medium Trucks:	77.72	-14.51		1.22	-1.20	-5.0	0.0	00	0.000
Heavy Trucks:	82.99	-18.47		1.20	-1.20	-5.3	4 0.0	00	0.000
Unmitigated Noise	Levels (witho	ut Topo and b	arrier at	tenuation					
VehicleType	Leq Peak Hour			Evening	Leq Ni		Ldn	CN	IEL
	69.2		7.3	65.		59.5	68.1		68.7
Autos:		2 6.	1.7	55.		53.8	62.3		62.5
Autos: Medium Trucks:	63.2					55.3	63.7		63.8
	63.2 64.5		3.1	54.	1	00.0			
Medium Trucks:		5 63	3.1 9.5	54. 66.		61.7	70.2		70.3
Medium Trucks: Heavy Trucks:	64.5 71.3	5 60 3 69	9.5	66.	2	61.7			
Medium Trucks: Heavy Trucks: Vehicle Noise:	64.5 71.3	5 63 3 69 ntour (in feet)	9.5	66. 70 dBA	2 65 dE	61.7 8A	60 dBA	55 c	
Medium Trucks: Heavy Trucks: Vehicle Noise:	64.5 71.3	5 63 3 69 ntour (in feet)	9.5 dn:	66.	2	61.7 84			1BA 21

Project Name: The Bowery Job Number: 12282								
NOISE MODEL INPUTS								
Site Conditions (Hard = 10, Soft = 15)								
Autos: 15								
Medium Trucks (2 Axles): 15								
Heavy Trucks (3+ Axles): 15								
Vehicle Mix								
VehicleType Day Evening Night L								
Autos: 77.5% 12.9% 9.6% 97.4								
Medium Trucks: 84.8% 4.9% 10.3% 1.								
Heavy Trucks: 86.5% 2.7% 10.8% 0.7								
Noise Source Elevations (in feet)								
Autos: 2.000								
Medium Trucks: 4.000								
Heavy Trucks: 8,006 Grade Adjustment: 0.0								
Lane Equivalent Distance (in feet)								
Autos: 40.902 Medium Trucks: 40.804								
Heavy Trucks: 40.903								
ce Finite Road Fresnel Barrier Atten Berm Atte								
1.20 -1.20 -4.85 0.000 0.								
1.22 -1.20 -5.01 0.000 0.								
1.20 -1.20 -5.34 0.000 0.								
ttenuation)								
eq Evening Leq Night Ldn CNEL								
65.7 59.7 68.3 6 55.5 54.0 62.4 6								
55.5 54.0 62.4 6 54.2 55.5 63.8 6								
54.2 55.5 63.8 6 66.4 61.9 70.4 7								
00.4 01.9 /0.4 /								
70 dBA 65 dBA 60 dBA 55 dBA								
64 137 296 638								
68 147 317 683								

Friday, November 15, 2019

	FHW	A-RD-77-108 HI	GHWAY	NOISE PR	REDICTIO	N MODEL			
Road Nam	io: OY + P ne: Redhill Ave. nt: n/o Valcencia	a Ave.				ame: The E nber: 12282			
SITE	SPECIFIC INP	PUT DATA			NO	ISE MOD	EL INPUTS	5	
Highway Data				Site Con	ditions (H	lard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 26	3,310 vehicles				Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truck	ks (2 Axles)	: 15		
Peak H	our Volume: 2	631 vehicles		He	avy Trucks	(3+ Axles)	: 15		
Ve	hicle Speed:	45 mph		Vehicle	Miy				
Near/Far La	ne Distance:	88 feet			icleType	Day	Evening	Night	Daily
Site Data				Ven	Au	,		9.6%	
				14	edium Truc			10.3%	1.84%
	rrier Height:	0.0 feet			Heavy Truc			10.8%	0.74%
Barrier Type (0-W Centerline Dis		0.0 60.0 feet						10.070	0.7 170
Centerline Dist.		60.0 feet		Noise Se	ource Elev	ations (in	feet)		
Barrier Distance		0.0 feet			Autos:	2.000			
Observer Height (		5.0 feet			m Trucks:	4.000			
	ad Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Adji	ustment:	0.0
	d Elevation:	0.0 feet		Lane Eq	uivalent D	istance (in	feet)		
	Road Grade:	0.0%			Autos:	40.902	,		
	Left View:	-90.0 degrees		Mediu	m Trucks:	40.804			
	Right View:	90.0 degrees			y Trucks:	40.903			
FHWA Noise Mod	el Calculations								-
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	68.46	2.25	1.1		-1.20	-4.85		00	0.000
Medium Trucks:	79.45	-14.99	1.1		-1.20	-5.01			0.000
Heavy Trucks:	84.25	-18.94	1.3		-1.20	-5.34	0.0	00	0.000
Unmitigated Nois				,					
VehicleType	Leq Peak Hour			Evening	Leq Ni		Ldn		VEL
Autos:	70.7			67.1		61.0	69.6		70.2
Medium Trucks:	64.5			56.6		55.1	63.5		63.8
Heavy Trucks:	65.3			54.9		56.1	64.5		64.6
Vehicle Noise:	72.6	10	.8	67.7		63.0	71.5		72.0
Centerline Distant	ce to Noise Cor	ntour (in feet)	70	dBA	65 dB	24	60 dBA	FF	dBA
		1 d		ава 76	65 dB 163		352		ава 58
		CNE		76 81	103		352		58 13
		CIVE	L	01	175		310	0	10

FHWA-RD-77-108 HI	GHWAY									
Scenario: OY + P				Name: The Bowery						
Road Name: Redhill Ave.			Job N	umber: 12282						
Road Segment: s/o Valcencia Ave.										
SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)								
Highway Data		Site Cond	ditions	(Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 29,150 vehicles				Autos: 15						
Peak Hour Percentage: 10%		Medium Trucks (2 Axles): 15								
Peak Hour Volume: 2,915 vehicles		Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 50 mph		Vehicle N	<i>Ni</i> v							
Near/Far Lane Distance: 88 feet			cleType	Day Evening Night	Daily					
Site Data		10111		Autos: 77.5% 12.9% 9.6%						
		Medium Trucks: 84.8% 4.9% 10.3% 1.84								
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74								
Centerline Dist. to Barrier: 60.0 feet			,		0.7 17					
Centerline Dist. to Observer: 60.0 feet		Noise So	urce El	evations (in feet)						
Barrier Distance to Observer: 0.0 feet			Auto	s: 2.000						
		Mediun	n Truck	s: 4.000						
Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet		Heavy	/ Truck	s: 8.006 Grade Adjustment	: 0.0					
		Lane Fau	iivələn	Distance (in feet)						
Road Elevation: 0.0 feet Road Grade: 0.0%		Lune Lyu	Auto	1 /						
0.070		Mediun								
			v Truck							
Right View: 90.0 degrees		neavy	Y TTUCK	3. 40.903						
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flow	Distance	Finite I	Road	Fresnel Barrier Atten Be	rm Atten					
Autos: 70.20 2.24	1.	20	-1.20	-4.85 0.000	0.00					
Medium Trucks: 81.00 -15.00	1.	22	-1.20	-5.01 0.000	0.00					
Heavy Trucks: 85.38 -18.96	1.	20	-1.20	-5.34 0.000	0.00					
Unmitigated Noise Levels (without Topo and ba	rrier atte	nuation)								
VehicleType Leq Peak Hour Leq Day		Evening	Leq	5	NEL					
Autos: 72.4 70.	.5	68.8		62.7 71.3	72.					
Medium Trucks: 66.0 64	.5	58.2		56.6 65.1	65.					
Heavy Trucks: 66.4 65	.0	56.0		57.2 65.6	65.					
Vehicle Noise: 74.1 72	.4	69.3		64.6 73.1	73.					
Centerline Distance to Noise Contour (in feet)										
· · ·	70	dBA	65	dBA 60 dBA 55	dBA					
		97	-	08 449 9	967					
Ld	n:	97	20	Jo 449 3	101					

	FHV	VA-RD-77-108	HIGHW				DEL			
Scenar	io: OY + P				Proje	ct Name:	The Bo	owery		
Road Nan	e: Redhill Ave	e.			Job	Number: *	12282			
Road Segme	nt: s/o Warner	Ave.								
	SPECIFIC IN	IPUT DATA		0.11				L INPUTS		
Highway Data				Site	Condition			,		
Average Daily	, ,		s				Autos:			
	Percentage:	10%				rucks (2 A				
	lour Volume:	3,606 vehicle	S		Heavy Tr	ucks (3+ A	xles):	15		
	hicle Speed:	50 mph		Veh	icle Mix					
Near/Far La	ne Distance:	88 feet			VehicleTy	be	Day	Evening	Night	Daily
Site Data						Autos:	77.5%	12.9%	9.6%	97.42%
Ra	rrier Heiaht:	0.0 feet			Medium	Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			Heavy	Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Di		60.0 feet		Noi	se Source	Elovation	in fr	a of l		
Centerline Dist.	to Observer:	60.0 feet		1401			000			
Barrier Distance to Observer: 0.0 feet					Au Iedium Trud					
Observer Height (	Above Pad):	5.0 feet		n,	Heavy Truc		006	Grade Adju	etmont.	0.0
P	ad Elevation:	0.0 feet			neavy nu	.ns. 0.t	000	Orade Adju	Sunon.	0.0
Ro	ad Elevation:	0.0 feet		Lan	e Equivale	nt Distand	e (in i	feet)		
	Road Grade:	0.0%			Au	tos: 40.9	902			
	Left View:	-90.0 degree	es	L.	ledium Truc	ks: 40.8	304			
	Right View:	90.0 degree	es		Heavy True	ks: 40.9	903			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Distar		inite Road	Fresn		Barrier Atte		m Atten
Autos:	70.20	3.16		1.20	-1.2		-4.85	0.00		0.000
Medium Trucks:	81.00	-14.08		1.22	-1.2		-5.01	0.00		0.000
Heavy Trucks:	85.38	-18.03		1.20	-1.2	)	-5.34	0.00	0	0.000
Unmitigated Nois										
VehicleType	Leq Peak Hou			eq Even		q Night		Ldn	Cl	IEL
			71.5		69.7	63.7		72.3		72.9
Autos:			65.4		59.1	57.5		66.0		66.2
Medium Trucks:	66									66.6
Medium Trucks: Heavy Trucks:	66 67	.4	65.9		56.9	58.1		66.5		
Medium Trucks:	66	.4			56.9 70.3	58.1 65.5		74.0		74.5
Medium Trucks: Heavy Trucks:	66 67 75	 5.1	65.9 73.3	70.15	70.3	65.5		74.0		
Medium Trucks: Heavy Trucks: Vehicle Noise:	66 67 75	.4 5.1 ontour (in feet	65.9 73.3	70 dBA	70.3	65.5 5 dBA		74.0		dBA
Medium Trucks: Heavy Trucks: Vehicle Noise:	66 67 75	.4 5.1 ontour (in feet	65.9 73.3	70 dBA 111 120	70.3	65.5		74.0	1,*	74.5 dBA 114 197

	FHW	A-RD-77-108	HIGH	WAY N	IOISE PF	REDICT	ION MOE	DEL			
	io: OY + P						Name: 1		owery		
	e: Redhill Ave.					Job N	umber: 1	2282			
Road Segmen	nt: n/o Carnegie	e Ave.									
	SPECIFIC IN	PUT DATA							L INPUTS	5	
Highway Data					Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 3	7,020 vehicles	5				A	Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	ucks (2 A	xles):	15		
Peak H	lour Volume:	3,702 vehicles	5		He	avy Truc	cks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph			Vehicle	Mix					
Near/Far La	ne Distance:	88 feet		-		icleType		Day	Evening	Night	Daily
Site Data					Von			77.5%	•	9.6%	
					M	, edium T		34.8%		10.3%	1.84%
	rrier Height:	0.0 feet				Heavy T		36.5%		10.8%	0.74%
Barrier Type (0-W		0.0			,	icavy n	uono. I	50.070	2.170	10.070	0.7470
Centerline Dis		60.0 feet		1	Noise So	ource E	levations	; (in fe	eet)		
Centerline Dist.		60.0 feet				Auto	s: 2.0	00			
Barrier Distance		0.0 feet			Mediu	m Truck	s: 4.0	00			
Observer Height (Above Pad): 5.0 feet					Heav	y Truck	s: 8.0	06	Grade Adj	ustment.	0.0
	Pad Elevation: 0.0 feet					uivelen	t Distanc	o (in i	fact)		
	ad Elevation: Road Grade:	0.0 feet		F	Lane Ly	Auto			eel)		
		0.0%	-		Madiu	m Truck					
	Left View:	-90.0 degree									
	Right View:	90.0 degree	s		neav	ry Truck	5. 40.8	03			
FHWA Noise Mode	el Calculations										
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	70.20	3.28		1.20	0	-1.20		4.85	0.0	00	0.000
Medium Trucks:	81.00	-13.96		1.2	2	-1.20		5.01	0.0	00	0.000
Heavy Trucks:	85.38	-17.92		1.20	0	-1.20		5.34	0.0	00	0.000
Unmitigated Noise				r atten	uation)						
VehicleType	Leq Peak Hour			Leq E	•	Leq	Night		Ldn		NEL
Autos:	73.	-	71.6		69.8		63.8		72.4		73.0
Medium Trucks:	67.		65.6		59.2		57.6		66.1		66.3
Heavy Trucks:	67.	5	6.0		57.0		58.3		66.6	5	66.7
Vehicle Noise:	75.2	2	73.4		70.4		65.6		74.1		74.6
Centerline Distant	ce to Noise Col	ntour (in feet,	)							T	
					dBA		dBA	6	60 dBA		dBA
			Ldn:	11		-	44		526		134
		CI	IEL:	12	22	2	63		566	1,	219

Friday, November 15, 2019

	FH\	WA-RD-77-108	HIGHWA	Y NOISE PI	REDICT	ION MODEL						
	o: OY + P e: Redhill Ave it: s/o Carneg					Name: The E lumber: 1228						
SITE S	SPECIFIC IN	NPUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Cor	nditions	(Hard = 10, S	oft = 15)					
Average Daily 1 Peak Hour F	Percentage:	10%				Autos ucks (2 Axles) cks (3+ Axles)	: 15					
	our Volume:	3,616 vehicle	5	пе	avy mu	LKS (3+ AXIES)	. 15					
	nicle Speed:	50 mph		Vehicle	Mix							
Near/Far Lan	le Distance:	88 feet		Veh	icleType	e Day	Evening N	light Daily				
Site Data						Autos: 77.59	% 12.9%	9.6% 97.42%				
Bar	rier Height:	0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84								
Barrier Type (0-Wa	all, 1-Berm):	0.0			Heavy 7	rucks: 86.5	% 2.7% 1	0.8% 0.74%				
Centerline Dis	t. to Barrier:	60.0 feet		Noise S	ource F	levations (in	feet)					
Centerline Dist. t	Autos: 2.000											
Barrier Distance t	Mediu	m Truck										
Observer Height (Above Pad): 5.0 feet					/y Truck		Grade Adjus	tment: 0.0				
Pa												
	d Elevation:	0.0 feet		Lane Eq		t Distance (in	feet)					
F	Road Grade:	0.0%			Auto							
	Left View:	-90.0 degree			m Truck							
	Right View:	90.0 degree	es	Hear	/y Truck	s: 40.903						
FHWA Noise Mode	el Calculation	15										
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	Road	Fresnel	Barrier Atten	Berm Atten				
Autos:	70.20	3.17		1.20	-1.20	-4.85	0.000	0.000				
Medium Trucks:	81.00	-14.06		1.22	-1.20	-5.01	0.000	0.000				
Heavy Trucks:	85.38	-18.02		1.20	-1.20	-5.34	0.000	0.000				
Unmitigated Noise			barrier a	ttenuation)								
	Leq Peak Ho			q Evening	,	Night	Ldn	CNEL				
Autos:			71.5	69.7		63.7	72.3	72.9				
Medium Trucks:	•••		65.4	59.1		57.5	66.0	66.2				
Heavy Trucks:	-		65.9	56.9		58.2	66.5	66.6				
Vehicle Noise:	75	5.1	73.3	70.3		65.5	74.0	74.5				
Centerline Distanc	e to Noise C	ontour (in feet	)									
				70 dBA	65	dBA	60 dBA	55 dBA				
			I dn:	112		41	518	1.117				
	CNEL:			112	2		010	1,117				

F	HWA-RD-77-108	B HIGH	IWAY NC	DISE PRI	EDICTI	ON MOI	DEL					
Scenario: OY + P				Project Name: The Bowery								
Road Name: Redhill A	ve.				Job N	umber:	12282	-				
Road Segment: n/o Barra	nca Pkwy.											
SITE SPECIFIC	INPUT DATA			NOISE MODEL INPUTS								
Highway Data			S	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt):	39,590 vehicle	es					Autos:	15				
Peak Hour Percentage:	10%			Medium Trucks (2 Axles): 15								
Peak Hour Volume:	3,959 vehicle	es		Heavy Trucks (3+ Axles): 15								
Vehicle Speed:	50 mph		14	ehicle M	lv.							
Near/Far Lane Distance:	106 feet		V		ix leType		Dav	Evening	Night	Daily		
Site Data				Venic			77.5%		9.6%			
				Mor			84.8%		10.3%	1.84		
Barrier Height				Medium Trucks: 84.8% 4.9% 10.3% 1.84 Heavy Trucks: 86.5% 2.7% 10.8% 0.74								
Barrier Type (0-Wall, 1-Berm).					eavy II	UCKS.	00.3%	2.770	10.0%	0.74		
Centerline Dist. to Barrier.			N	oise Sou	Irce El	evation	s (in fe	et)				
Centerline Dist. to Observer.				Autos: 2.000								
Barrier Distance to Observer.		Medium	Trucks	s: 4.0	000							
Observer Height (Above Pad):				Heavy	Trucks	. 8.0	006	Grade Adj	ustment:	0.0		
Pad Elevation.			-									
Road Elevation.			La	ane Equ				eet)				
Road Grade	0.070				Autos							
Left View	00.0 009.0			Medium								
Right View	90.0 degre	es		Heavy	Trucks	8: 45.6	326					
FHWA Noise Model Calculati												
VehicleType REMEL	Traffic Flow	Dis	stance	Finite F	Road	Fresh	el	Barrier Att	en Ber	m Atter		
Autos: 70.2	0 3.57	7	0.46		-1.20		-4.86	0.0	000	0.00		
Medium Trucks: 81.0			0.48		-1.20		-5.00		000	0.00		
Heavy Trucks: 85.3	-17.63	3	0.46		-1.20		-5.28	0.0	000	0.00		
Unmitigated Noise Levels (wi												
VehicleType Leq Peak H		/	Leq Eve		Leq I			Ldn		VEL		
	73.0	71.1		69.4		63.3		71.9		72.		
	66.6	65.1		58.7		57.2		65.7		65		
	67.0	65.6		56.6		57.8		66.2		66.		
	74.7	73.0		69.9		65.2	2	73.7	7	74		
Centerline Distance to Noise	Contour (in fee	:t)										
		[	70 dE		65 0		6	0 dBA		dBA		
		Ldn:	123	3	26	66		573	1,:	235		
		NFI :	133		28			616		327		

FHWA-RD-77-108 HI	GHWAY NOISE	PREDICTION M	ODEL							
Scenario: OY + P		Project Name: The Bowery								
Road Name: Redhill Ave.		Job Numbe	r: 12282							
Road Segment: s/o Barranca Pkwy.										
SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS								
Highway Data	Site C	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 38,720 vehicles		Autos: 15								
Peak Hour Percentage: 10%		Medium Trucks (2 Axles): 15								
Peak Hour Volume: 3,872 vehicles		Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 50 mph	Vehic	e Mix								
Near/Far Lane Distance: 106 feet	V	ehicleType	Day	Evening	Night	Daily				
Site Data		Autos: 77.5% 12.9% 9.6% 9								
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.								
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks:	86.5%	2.7%	10.8%	0.749				
Centerline Dist. to Barrier: 70.0 feet	Noise	Noise Source Elevations (in feet)								
Centerline Dist. to Observer: 70.0 feet			2.000	.,						
Barrier Distance to Observer: 0.0 feet	Me	lium Trucks:	4.000							
Observer Height (Above Pad): 5.0 feet	Н	avv Trucks:	8.006	Grade Ad	justment.	0.0				
Pad Elevation: 0.0 feet	-									
Road Elevation: 0.0 feet	Lane	Equivalent Dista		'eet)						
Road Grade: 0.0%			5.826							
Left View: -90.0 degrees			5.738							
Right View: 90.0 degrees	H	eavy Trucks: 4	5.826							
FHWA Noise Model Calculations	1									
				Barrier Att		m Atten				
Autos: 70.20 3.47	0.46	-1.20	-4.86		000	0.00				
Medium Trucks: 81.00 -13.77	0.48	-1.20	-5.00		000	0.00				
Heavy Trucks: 85.38 -17.72	0.46	-1.20	-5.28	0.0	000	0.00				
Unmitigated Noise Levels (without Topo and ba	rrier attenuatio	1)								
VehicleType Leq Peak Hour Leq Day	Leq Evening	1 0		Ldn		NEL				
Autos: 72.9 71.			3.2	71.8		72.				
Medium Trucks: 66.5 65.			7.1	65.0		65.				
Heavy Trucks: 66.9 65.			7.7	66.		66.				
Vehicle Noise: 74.6 72.	9 6	.8 6	5.1	73.	6	74.				
Centerline Distance to Noise Contour (in feet)	T	1	T		Т					
	70 dBA	65 dBA	6	0 dBA	55	dBA				
Ld. CNF		262 282		565 607		217 307				

	FHW	/A-RD-77-108	HIGHW	AY NO	OISE PR	EDICTI	ON MOE	DEL					
Road Nam	Scenario: OY + P Road Name: Redhill Ave. Road Segment: n/o MacArthur Blvd.						Name: 1 umber: 1		owery				
SITE	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS								
Highway Data				S	Site Con	ditions	(Hard =	10, Sc	oft = 15)				
Average Daily	Traffic (Adt): 5	2,920 vehicle	6				/	Autos:	15				
Peak Hour	Percentage:	10%			Mee	dium Tru	cks (2 A	xles):	15				
Peak H	our Volume:	5,292 vehicle	6		Hea	avy Truc	ks (3+ A	xles):	15				
	hicle Speed:	50 mph		v	/ehicle	Nix							
Near/Far Lar	ne Distance:	88 feet			Vehi	cleType		Day	Evening	Night	Daily		
Site Data						A	utos:	, 77.5%	12.9%	9.6%	97.42%		
Bar	rier Height:	0.0 feet			Medium Trucks: 84.8% 4.9% 10.3% 1.8								
Barrier Type (0-W		0.0			F	łeavy Tr	ucks:	36.5%	2.7%	10.8%	0.74%		
Centerline Dis		60.0 feet			loise So	urce El	avations	(in fe	oot)				
Centerline Dist.	to Observer:	60.0 feet		-	10/30 00	Autos							
Barrier Distance	to Observer:	0.0 feet			Modiur	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 feet					ane Equ				feet)				
F	Road Grade:	0.0%				Autos							
	Left View:	-90.0 degree				n Trucks							
	Right View:	90.0 degre	es		Heav	y Trucks	: 40.9	103					
FHWA Noise Mode	el Calculation:	s											
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten		
Autos:	70.20	4.83		1.20	i	-1.20		4.85	0.0	000	0.000		
Medium Trucks:	81.00	-12.41		1.22	2 -1.20 -5.0			5.01	0.0	000	0.000		
Heavy Trucks:	85.38	-16.37		1.20	)	-1.20		5.34	0.0	000	0.000		
Unmitigated Noise	e Levels (with	out Topo and	barrier a	attenu	uation)								
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Ev	ening	Leq I	Vight		Ldn		NEL		
Autos:		0	73.1		71.4		65.3		73.9		74.5		
Medium Trucks:	75.	-											
	68	.6	67.1		60.7		59.2		67.7				
Heavy Trucks:	68 69	6 0	67.6		58.6		59.8		68.2	2	68.3		
	68	6 0								2	68.3		
Heavy Trucks:	68 69 76	6 0 7	67.6 75.0		58.6 71.9		59.8 67.2		68.2 75.7	2	68.3 76.2		
Heavy Trucks: Vehicle Noise:	68 69 76	6 0 7 ntour (in feet	67.6 75.0	70 d	58.6 71.9 BA	65 0	59.8 67.2		68.2 75.7	55	67.9 68.3 76.2 dBA		
Heavy Trucks: Vehicle Noise:	68 69 76	6 0 7 Pontour (in feet	67.6 75.0	70 d 144 155	58.6 71.9 IBA 4	65 d 31 33	59.8 67.2 <i>IBA</i> 0		68.2 75.7	2 7 55 1,	68.3 76.2		

Friday, November 15, 2019

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGHW	AY NO	ISE PI	REDICT		ΞL			
	o: OY + P e: Redhill Ave						Name: Ti umber: 12		wery		
Ŷ	SPECIFIC IN								. INPUTS		
Highway Data	SPECIFIC IN	PUIDAIA		Si	ite Cor		(Hard = 1)				
	Traffic (Adt): 2 Percentage: our Volume:	22,530 vehicles 10% 2,253 vehicles					Ai Joks (2 Ax Oks (3+ Ax		15 15 15		
Vel	hicle Speed:	50 mph		Ve	ehicle	Mix					
Near/Far Lar	ne Distance:	36 feet				icleType		av	Evening 1	Vight	Dailv
Site Data					1011			7.5%	12.9%	9.6%	97.42%
Par	rier Height:	0.0 feet			М	edium T	rucks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			I	leavy T	rucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		40.0 feet		N	oise So	ource E	levations	(in fe	et)		
	o Observer:	40.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet		Li	Heav	Auto m Truck ry Truck <b>uivalen</b>	s: 4.00	10	Grade Adjus	stment:	0.0
	Road Grade:	0.0%		-		Auto			,		
	Left View: Right View:	-90.0 degree 90.0 degree				m Truck ry Truck	s: 35.73	35			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	I E	Barrier Atter	Beri	m Atten
Autos:	70.20	1.12		2.06		-1.20	-4	1.83	0.00	0	0.000
Medium Trucks:	81.00	-16.12		2.08		-1.20	-4	5.08	0.00	D	0.000
Heavy Trucks:	85.38	-20.08		2.06		-1.20	-{	5.56	0.00	D	0.000
Unmitigated Noise											
,,	Leq Peak Hou			eq Eve		Leq	Night		Ldn	CI	IEL
Autos:	72		70.3		68.5		62.5		71.1		71.7
Medium Trucks:	65		54.3		57.9		56.4		64.8		65.0
Heavy Trucks:	66		64.7		55.7		57.0		65.3		65.4
Vehicle Noise:	73		72.1		69.1		64.3		72.9		73.3
Centerline Distanc	e to Noise Co	ontour (in feet)	1	70.15	24		-10.4		0.004		-10.4
			dn:	70 dE 62	м		dBA 33	-	288		dBA 20
			Lan: IFL:	62			33 43		288 309	-	20 66
		Cr	VLL.	07		1	40		209	6	00

		A-RD-77-108 I								
	o: OY + P						Name: Th			
	e: Valencia Av					Job Ni	Imber: 12	282		
Road Segmer	nt: w/o Redhill	Ave.								
	SPECIFIC IN	PUT DATA						DEL INPUT	'S	
Highway Data				S	ite Con	ditions	(Hard = 10	, Soft = 15)		
Average Daily	Traffic (Adt):	9,300 vehicles					Au	tos: 15		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 Axl	es): 15		
Peak H	our Volume:	930 vehicles			He	avy Truc	ks (3+ Axl	es): 15		
Ve	hicle Speed:	45 mph		v	ehicle l	Mix				
Near/Far Lai	ne Distance:	36 feet		F		icleType	Da	evening	Night	Daily
Site Data								.5% 12.9%	9.6%	
Bai	rier Heiaht:	0.0 feet			Me	edium Tr	ucks: 84	.8% 4.9%	10.3%	1.84
Barrier Type (0-W		0.0			ŀ	leavy Tr	ucks: 86	.5% 2.7%	10.8%	0.74
Centerline Dis		40.0 feet		-				( f		
Centerline Dist.	to Observer:	40.0 feet		~	oise so		evations (	,		
Barrier Distance	to Observer:	0.0 feet				Autos n Trucks		-		
Observer Height (	Above Pad):	5.0 feet							P	
	d Elevation:	0.0 feet			Heav	y Trucks	: 8.00	6 Grade Ad	ijustmen	t: 0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalent	Distance	(in feet)		
1	Road Grade:	0.0%				Autos	: 35.84	7		
	Left View:	-90.0 degree	s		Mediur	n Trucks	: 35.73	5		
	Right View:	90.0 degree	s		Heav	y Trucks	35.84	7		
FHWA Noise Mod	el Calculations	1								
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier At	ten Be	rm Atter
Autos:	68.46	-2.27		2.06		-1.20	-4	.83 0.	000	0.00
Medium Trucks:	79.45	-19.50		2.08		-1.20	-5	08 0.	000	0.00
Heavy Trucks:	84.25	-23.46		2.06		-1.20	-5	56 0.	000	0.00
Unmitigated Noise	e Levels (witho	out Topo and I	barrie	er attenu	ation)					
VehicleType	Leq Peak Hou	r Leq Day		Leq Ev	ening	Leq I	Vight	Ldn	C	NEL
Autos:	67.	1 6	5.2		63.4		57.3	66.	0	66
Medium Trucks:	60.	8 5	59.3		53.0		51.4	59.	9	60
Heavy Trucks:	61.	7 6	60.2		51.2		52.4	60.	.8	60
Vehicle Noise:	68.	9 6	67.2		64.0		59.3	67.	9	68
Centerline Distand	e to Noise Co	ntour (in feet)								
				70 d	BA	65 0	1BA	60 dBA	55	5 dBA
		L	dn:	29		6	2	134		288
			IFI :	31		6				

	FHV	VA-RD-77-108	HIGHV	NAY N	IOISE PR	EDICTIO	N MODEL			
Scenari	o: OY + P					Project N	ame: The	Bowery		
	e: Valencia Av					Job Nur	nber: 1228	2		
Road Segmer	nt: e/o Redhill	Ave.								
	SPECIFIC IN	IPUT DATA						EL INPUT	S	
Highway Data					Site Con	ditions (H	lard = 10, 3	Soft = 15)		
Average Daily	Traffic (Adt): 1	12,120 vehicle	s				Auto	s: 15		
Peak Hour	Percentage:	10%			Med	lium Truc	ks (2 Axles	): 15		
Peak H	our Volume:	1,212 vehicle	s		Hea	vy Truck	s (3+ Axles	): 15		
Vel	nicle Speed:	45 mph			Vehicle N	lix				
Near/Far Lar	ne Distance:	36 feet			Vehi	cleType	Day	Evening	Night	Daily
Site Data						Au	tos: 77.5	% 12.9%	9.6%	97.429
Bar	rier Height:	0.0 feet			Me	dium Tru	cks: 84.8	% 4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			Н	leavy Tru	cks: 86.5	% 2.7%	10.8%	0.74%
Centerline Dis		40.0 feet			Noise So	urce Elev	ations (in	feet)		
Centerline Dist. t	o Observer:	40.0 feet		F		Autos:	2.000	,		
Barrier Distance t	o Observer:	0.0 feet			Mediun	n Trucks:	4.000			
Observer Height (/	Above Pad):	5.0 feet				/ Trucks:	8.006	Grade Adj	ustment:	0.0
Pa	d Elevation:	0.0 feet								
	d Elevation:	0.0 feet		1	Lane Equ		oistance (in	n feet)		
F	Road Grade:	0.0%				Autos:	35.847			
	Left View:	-90.0 degre				n Trucks:	35.735			
	Right View:	90.0 degre	es		Heav	/ Trucks:	35.847			
FHWA Noise Mode		-								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite I		Fresnel	Barrier Att		m Atten
Autos:	68.46	-1.12		2.06	-	-1.20	-4.8			0.00
Medium Trucks:	79.45	-18.35		2.08	-	-1.20	-5.0		000	0.00
Heavy Trucks:	84.25	-22.31		2.06	6	-1.20	-5.5	6 0.0	000	0.00
Unmitigated Noise										151
	Leq Peak Hou			Leq Ev	~	Leq N	•	Ldn		VEL
Autos: Medium Trucks:	68 62		66.3 60.5		64.5 54.1		58.5 52.6	67.1 61.0		67. 61.
Heavy Trucks:	62		61.4		52.3		53.6	62.0	·	62.
Vehicle Noise:	70		68.3		65.2		60.5	69.0	J	69.
Centerline Distance	e to Noise Co	ontour (in feel	)	70 0		65 dE	24	60 dBA	66	dBA
			Ldn:	70 0		65 dE 74	0/4	160 aba		ава 44
									3	44
		~	NFI :	3		80		171	2	69

	FHV	/A-RD-77-108	HIGHWAY	NO	ISE PRE	DICTIO	N MODEL			
	io: OY + P						ame: The E			
	e: Warner Ave nt: w/o Grand					שט מטנ	nber: 1228	<u> </u>		
SITE	SPECIFIC IN	PUT DATA				NO	ISE MOD	EL INPUT	s	
Highway Data				Si	ite Cond	itions (H	lard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 2	5,970 vehicles					Autos	: 15		
Peak Hour	Percentage:	10%			Medi	um Truc	ks (2 Axles)	: 15		
Peak H	our Volume:	2,597 vehicles			Heav	y Truck	s (3+ Axles)	: 15		
Vel	hicle Speed:	45 mph		V	ehicle M	ix.				
Near/Far Lar	ne Distance:	36 feet		-		eType	Day	Evening	Night	Daily
Site Data				-	101110		tos: 77.5	v	9.6%	
Bar	rier Height:	0.0 feet			Med	lium True			10.3%	1.84%
Barrier Type (0-W	•	0.0			He	avy Tru	cks: 86.5	% 2.7%	10.8%	0.74%
Centerline Dis	at. to Barrier:	40.0 feet		N	oise Sou	rce Elev	ations (in	feet)		
Centerline Dist.	to Observer:	40.0 feet		-		Autos:	2.000	,		
Barrier Distance	to Observer:	0.0 feet			Medium		4.000			
Observer Height (J	Above Pad):	5.0 feet				Trucks:	8.006	Grade Ad	iustment	0.0
Pa	ad Elevation:	0.0 feet								
Roa	ad Elevation:	0.0 feet		Lá	ane Equi	valent D	oistance (in	feet)		
ŀ	Road Grade:	0.0%				Autos:	35.847			
	Left View:	-90.0 degree	s		Medium	Trucks:	35.735			
	Right View:	90.0 degree	s		Heavy	Trucks:	35.847			
FHWA Noise Mode	el Calculation	s		-						
VehicleType	REMEL	Traffic Flow	Distance	е	Finite R	load	Fresnel	Barrier Att	en Ber	m Atten
Autos:	68.46	2.19	2	2.06		-1.20	-4.83	0.0	000	0.000
Medium Trucks:	79.45	-15.04	2	2.08		-1.20	-5.08	0.0	000	0.000
Heavy Trucks:	84.25	-19.00	2	2.06		-1.20	-5.56	0.0	000	0.000
Unmitigated Noise				enu	ation)					
VehicleType	Leq Peak Hou			Eve	ening	Leq Ni		Ldn		VEL
Autos:	71		69.6		67.9		61.8	70.4		71.0
Medium Trucks:	65		53.8		57.4		55.9	64.3		64.6
Heavy Trucks:	66		64.7		55.7		56.9	65.		65.4
Vehicle Noise:	73		71.6		68.5		63.8	72.3	3	72.8
Centerline Distant	ce to Noise Co	ontour (in feet)				05.15				
				'0 dE	BA	65 dE		60 dBA		dBA
			dn:	57		123		265		72
		CI	IEL:	61		132		285	6	13

Friday, November 15, 2019

Friday, November 15, 2019

	FHW	/A-RD-77-108	HIGHV	VAY NO	DISE PR	REDICTIO	ON MODE	٤L		
	o: OY + P e: Warner Ave t: e/o Grand A	-					Name: Th Imber: 12	e Bowery 282		
SITE S	SPECIFIC IN	PUT DATA						DEL INPUT	'S	-
Highway Data				S	ite Con	ditions (	Hard = 10	0, Soft = 15)		
Average Daily 1 Peak Hour F Peak Ho	Percentage:	4,930 vehicle 10% 2.493 vehicle					AL cks (2 Axl ks (3+ Axl	,		
	icle Speed:	45 mph	3				10 (01 ) 50			
Near/Far Lan	· · · · / · · · ·	36 feet		V	'ehicle l					
Neal/I al Lali	e Distance.	30 leet			Veh	icleType		ay Evening		Daily
Site Data								7.5% 12.9%	9.6%	
Bar	rier Height:	0.0 feet			Me	edium Tr		4.8% 4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy Tr	ucks: 86	6.5% 2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	40.0 feet		Λ	loise Sr	ource Ele	evations (	(in feet)		
Centerline Dist. to	o Observer:	40.0 feet			0.00 00	Autos		,		
Barrier Distance to	o Observer:	0.0 feet			Modiu	m Trucks		-		
Observer Height (A	Above Pad):	5.0 feet				v Trucks		-	ljustment:	0.0
Pa	d Elevation:	0.0 feet			neav	y mucks	. 0.00	0 Oldde Ad	gusunon.	0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalent	Distance	(in feet)		
R	Road Grade:	0.0%				Autos	35.84	7		
	Left View:	-90.0 degre	es		Mediur	m Trucks	35.73	5		
	Right View:	90.0 degre	es		Heav	ry Trucks	: 35.84	7		
FHWA Noise Mode	l Calculations	;								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresnel	Barrier At	ten Beri	m Atten
Autos:	68.46	2.02		2.06		-1.20	-4	.83 0.	000	0.000
Medium Trucks:	79.45	-15.22		2.08		-1.20	-5		000	0.000
Heavy Trucks:	84.25	-19.18		2.06		-1.20	-5	.56 0.	000	0.000
Unmitigated Noise	Levels (witho	out Topo and	barrier	attenu	ation)					
VehicleType	Leq Peak Hou	r Leq Day	/	Leq Ev	ening	Leq I	Vight	Ldn		VEL
Autos:	71.	3	69.4		67.7		61.6	70.	2	70.8
Medium Trucks:	65.	1	63.6		57.2		55.7	64.	2	64.4
Heavy Trucks:	65.	-	64.5		55.5		56.7	65.	1	65.2
Vehicle Noise:	73.	2	71.4		68.3		63.6	72.	2	72.6
Centerline Distanc	e to Noise Co	ntour (in feet	)						Т	
				70 d		65 0		60 dBA		dBA
			Ldn:	56		12	-	258	-	56
		C	NEL:	60		12	9	277	5	97

FHWA-RD-77-108 HIGH	Y NOISE PREDICTION MODEL	
Scenario: OY + P Road Name: Warner Ave. Road Segment: w/o Redhill Ave.	Project Name: The Bowery Job Number: 12282	
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS	
Highway Data	Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Adt): 27,340 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,734 vehicles	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15	
Vehicle Speed: 45 mph	Vehicle Mix	
Near/Far Lane Distance: 88 feet	VehicleType Day Evening Nig	aht Daily
Site Data		.6% 97.429
Barrier Height: 0.0 feet	Medium Trucks: 84.8% 4.9% 10	.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10	0.8% 0.74%
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: 2.000	
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 4.000	
Pad Elevation: 0.0 feet	Heavy Trucks: 8.006 Grade Adjustn	nent: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)	
Road Grade: 0.0%	Autos: 40.902	
Left View: -90.0 degrees	Medium Trucks: 40.804	
Right View: 90.0 degrees	Heavy Trucks: 40.903	
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flow Dist		Berm Atten
Autos: 68.46 2.42	1.20 -1.20 -4.85 0.000	0.00
Medium Trucks: 79.45 -14.82	1.22 -1.20 -5.01 0.000	0.00
Heavy Trucks: 84.25 -18.78	1.20 -1.20 -5.34 0.000	0.00
Unmitigated Noise Levels (without Topo and barrie	ttenuation)	
VehicleType Leq Peak Hour Leq Day	q Evening Leq Night Ldn	CNEL
Autos: 70.9 69.0	67.2 61.2 69.8	70.
Medium Trucks: 64.6 63.1	56.8 55.2 63.7	63.
Heavy Trucks: 65.5 64.1	55.0 56.3 64.6	64.
Vehicle Noise: 72.7 71.0	67.8 63.1 71.7	72.
Centerline Distance to Noise Contour (in feet)		
	70 dBA 65 dBA 60 dBA	55 dBA
Ldn:	78 168 361	778

	FHV	VA-RD-77-108	HIGHW	VAY N	IOISE PR	EDICTIO	N MODEL			
Scenari	o: OY + P					Project N	a <i>me:</i> The	Bowery		
	e: Warner Ave					Job Nur	nber: 1228	32		
Road Segmer	nt: e/o Redhill	Ave.								
	SPECIFIC IN	IPUT DATA						DEL INPUT	s	
Highway Data				1	Site Con	ditions (H	lard = 10,	Soft = 15)		
Average Daily	. ,		s				Auto			
	Percentage:	10%					ks (2 Axles	· · ·		
	our Volume:	1,771 vehicle	s		Hea	vy Truck	s (3+ Axles	s): 15		
	hicle Speed:	50 mph			Vehicle N	lix				
Near/Far Lar	ne Distance:	88 feet		-	Vehi	cleType	Day	Evening	Night	Daily
Site Data						Au	tos: 77.5	5% 12.9%	9.6%	97.429
Bar	rier Height:	0.0 feet			Me	dium True	cks: 84.8	3% 4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			H	leavy Tru	cks: 86.5	5% 2.7%	10.8%	0.74%
Centerline Dis		60.0 feet			Noise So	urce Elev	ations (in	(feet)		-
Centerline Dist. t	o Observer:	60.0 feet		F		Autos:	2.000	,		
Barrier Distance t	o Observer:	0.0 feet			Mediur	n Trucks:	4.000			
Observer Height (/	Above Pad):	5.0 feet				/ Trucks:	8.006	Grade Ad	liustment.	: 0.0
Pa	d Elevation:	0.0 feet		L						
	d Elevation:	0.0 feet		1	Lane Equ		istance (i	n feet)		
F	Road Grade:	0.0%				Autos:	40.902			
	Left View:	-90.0 degre				n Trucks:	40.804			
	Right View:	90.0 degre	es		Heav	/ Trucks:	40.903			
FHWA Noise Mode		-								
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresnel	Barrier At		m Atten
Autos:	70.20	0.07		1.20	-	-1.20	-4.8		000	0.00
Medium Trucks:	81.00	-17.16		1.22	-	-1.20	-5.0		000	0.00
Heavy Trucks:	85.38	-21.12		1.20	0	-1.20	-5.3	4 0.	000	0.00
Unmitigated Noise										
VehicleType Autos:	Leq Peak Hou 70		68.4	Leq EV	vening 66.6	Leq Ni	60.6	Ldn 69	-	NEL
Autos: Medium Trucks:	70		68.4 62.3		56.0		60.6 54.4	69. 62.	-	69. 63.
	63		62.3 62.8		56.0 53.8		54.4 55.1	62.	-	63.
Heavy Trucks: Vehicle Noise:	• •									
	72		70.2		67.2		62.4	70.	а	71.
Centerline Distance	e to Noise Co	ontour (in fee	)	70 c	1RA	65 dE	24	60 dBA	55	dBA
			ட							
		~	Ldn: NFL:	69 75		149 161		322 346		94 745

Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Type (0-Wall, 1-Berm):         0.0         1.8         Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Barrier:         60.0 feet         Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Deserver:         0.0 feet         Moise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source Elevations (in feet)         Medium Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Medium Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Left View:         -90.0 degrees         Medium Trucks:         40.804           Heavy Trucks:         66.51         3.30         1.20         -1.20         -4.85         0.000         0.0           Medium Trucks:         77.72         -13.84         1.22         -1.20         -6.34         0.000         0.0           Medium Trucks:         82.99         -17.90         1.20         -1.20         -6.34         0.000         0.0           Medium Trucks:         82.99		FHW	A-RD-77-108	HIGHWA	AY NO	OISE PR	EDICTIO	N MODE	L			
Road Segment: wio Redhill Ave.           SITE SPECIFIC INPUT DATA         NOISE MODEL INPUTS           Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         29,750 vehicles         Autos: 15           Peak Hour Percentage:         10%         Medium Trucks (2 Avles):         15           Peak Hour Percentage:         10%         Medium Trucks (2 Avles):         15           Vehicle Speed:         40 mph         Vehicle Trucks (3 + Avles):         15           Vehicle Speed:         40 mph         Vehicle Trucks (3 + Avles):         15           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Doserver:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         18           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Doserver:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         8.8           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Autos:         2.000         Medium Trucks:         4.000           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Autos:         4.000         Heavy Trucks:         4.000           Barrier Tytew:         90.0 degrees												
Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adi): 29,750 vehicles         Autos:         15           Peak Hour Percentage:         10%         Medium Trucks (24/24/se):         15           Peak Hour Volume:         2,975 vehicles         Autos:         15           Vehicle Speed:         40 mph         Medium Trucks (24/24/se):         15           Vehicle Speed:         40 mph           Site Data           Site Data           Barrier Height:         0.0 feet           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         0.3%         1.8           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Medium Trucks:         84.8%         2.7%         10.8%         0.7           Centerline Dist. to Bserver:         60.0 feet         Moise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source (in feet)         Noise Noise (in feet)			Ave.				Job Nu	mber: 12	282			
Average Daily Traffic (Adt): 29,750 vehicles         Autos:         15           Peak Hour Percentage:         10%         Medium Trucks (2 Akles):         15           Peak Hour Volume:         2,975 vehicles         Medium Trucks (2 Akles):         15           Vehicle Speed:         40 mph         Heavy Trucks (3+ Akles):         15           Site Data         Autos:         75.%         16.0%           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Dasrever:         0.0 feet         Medium Trucks:         8.6%         2.7%         10.8%         0.3%         18           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Dasrever:         0.0 feet         Medium Trucks:         8.0%         0.7%         10.8%         0.7%           Barrier Distance to Observer:         0.0 feet         Autos:         2.000         Medium Trucks:         4.000           Road Elevation:         0.0 feet         Autos:         40.902         Medium Trucks:         40.000           Left View:         90.0 degrees         Right View:         90.0 degrees         Heavy Trucks:         40.900         0.0	SITE	SPECIFIC IN	PUT DATA				NC	DISE MO	DEL INPU	тѕ		
New Processing         10%         Medium Trucks (2 Avles):         15           Peak Hour Volume:         2,975 vehicles         Heavy Trucks (2 Avles):         15           Vehicle Speed:         40 mph         Heavy Trucks (2 Avles):         15           Vehicle Speed:         40 mph         Medium Trucks (2 Avles):         15           Vehicle Speed:         40 mph         Medium Trucks (2 Avles):         15           Vehicle Speed:         40 mph         Medium Trucks (2 Avles):         15           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Truck (0 Walt, 1-Berm):         0.0         6.0         16         Medium Trucks:         84.8%         4.9%         0.3%         16.0%         0.7           Centerline Dist. to Barrier:         60.0 feet         Medium Trucks:         4.000         Medium Trucks:         4.000         Medium Trucks:         4.000         Medium Trucks:         4.000         Medium Trucks:         40.902         Medium Trucks:         40.902         Medium Trucks:         40.903         Medium Trucks:	Highway Data				S	Site Con	ditions (F	lard = 10	, Soft = 15)	-		
Peak Hour Volume:         2,975         vehicles           Vehicle Speed:         40 mph           Near/Far Lane Distance:         88 feet           Site Data         Vehicle Mix           Barrier Height:         0.0 feet           Barrier Height:         0.0 feet           Barrier Height:         0.0 feet           Barrier Jype (0-Wall, 1-Berrn):         0.0           Centerline Dist. to Barrier:         60.0 feet           Barrier Jistance to Observer:         0.0 feet           Barrier Height:         0.0 feet           Barrier Jistance to Observer:         0.0 feet           Barrier Distance to Observer:         0.0 feet           Road Grade:         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           Heavy Trucks:         40.900           Medium Trucks:         77.72           1.20         -1.20           Autos:         66.51           Autos: <t< td=""><td>Average Daily</td><td>Traffic (Adt): 2</td><td>9,750 vehicles</td><td></td><td></td><td></td><td></td><td>Au</td><td>tos: 15</td><td></td><td></td><td></td></t<>	Average Daily	Traffic (Adt): 2	9,750 vehicles					Au	tos: 15			
Vehicle Speed:         40 mph           Near/Far Lane Distance:         88 feet           Site Data         Autos:           Barrier Height:         0.0 feet           Barrier Type (0-Wall, 1-Bern):         0.0           Centerline Dist. to Daserver:         60.0 feet           Diserver Height:         0.0 feet           Parrier Distance to Observer:         0.0 feet           Road Elevation:         0.0 feet           Road Grade:         0.0%           Road Grade:         0.0%           Left I/view:         90.0 degrees           Right View:         90.0 degrees           PHWA Noise Model Calculations         Vehicle Type           Vehicle Type         REIMEL           Vehicle Type         REIMEL           Vehicle Type         Res evening           Vehicle Type         Res evening           Road Grade:         0.0%           Left I/view:         90.0 degrees           Right View:         90.0 degrees           Right View:         90.0 degrees	Peak Hour	Percentage:	10%			Mee	dium Truc	ks (2 Axle	es): 15			
Near/Far Lane Distance:         B8 feet         Venicle Mix         Day         Evening         Night         Dai           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type (O-Wall, 1-Berri):         0.0         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type (O-Wall, 1-Berri):         0.0         Centerline Dist. to Barrier:         60.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         18.4           Barrier Type (O-Wall, 1-Berri):         0.0         Feet         Heavy Trucks:         85.5%         2.7%         10.8%         0.7           Centerline Dist. to Dasriver:         60.0 feet         Medium Trucks:         4.000         Medium Trucks:         4.000           Barrier Distance to Observer:         0.0 feet         Autos:         40.902         Medium Trucks:         40.902           Right View:         90.0 degrees         Finite Road         Fresnel         Barrier Atten         Bern Atten           WehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Medium Trucks:         71.90         1.20         -1.20         -5.34	Peak H	our Volume:	2,975 vehicles			Hea	avy Truck	s (3+ Axle	es): 15			
Near/Far Lane Distance:         88 feet         VehicleType         Day         Evening         Night         Dai           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         18.           Barrier Type (0-Wall, 1-Berm):         0.0           Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Deserver:         60.0 feet          Autos:         2.000         Medium Trucks:         4.000           Deserver Height (Above Pad):         5.0 feet          Autos:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet          Autos:         40.902             Road Grade:         0.0%          Autos:         40.902              VehicleType         REIMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten         Berrier Atten         Berrier Atten         Berrier Atten         Even Autos:         66.51         3.30         1.20         -1.20 </td <td>Vel</td> <td>hicle Speed:</td> <td>40 mph</td> <td></td> <td>v</td> <td>/ohiclo I</td> <td>Nix</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Vel	hicle Speed:	40 mph		v	/ohiclo I	Nix					
Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         18.           Barrier Type (0-Wall, 1-Berm):         0.0         Centerine Dist. to Barrier:         60.0 feet         Medium Trucks:         86.5%         2.7%         10.8%         0.7           Centerine Dist. to Barrier:         60.0 feet         Noise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source Ilevation:         0.0           Observer Height (Above Pad):         5.0 feet         Autos:         40.902         Medium Trucks:         40.00           Road Elevation:         0.0 feet         Autos:         40.902         Medium Trucks:         40.902           Right View:         90.0 degrees         Medium Trucks:         40.902         Medium Trucks:         40.902           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Berne Atti           Autos:         65.51         3.30         1.20         -1.20         -5.34         0.000         0.0           Medium Trucks:         82.99         -17.90         1.20         -1.20         <	Near/Far Lar	ne Distance:	88 feet		-			De	v Evening	a Mir	aht	Daily
Barrier Height:         0.0 feet           Barrier Type (0-Wall, 1-Berm):         0.0           Centerline Dist. to Barrier:         60.0 feet           Desirver:         60.0 feet           Barrier Jistance to Observer:         0.0 feet           Desirver Height:         0.0 feet           Pad Elevation:         0.0 feet           Road Grade:         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           Heavy Trucks:         40.804           Heavy Trucks:         40.903           FHWA Noise Model Calculations         Finite Road         Fresnel           VehicleType         REMEL         Traffic Flow           Distance         Finite Road         Fresnel           Barrier Atten         Berner Atten           Autos:         66.51         3.30         1.20           -1.20         -6.34         0.000         0.0           Medium Trucks:         67.9         66.1 <td>Site Data</td> <td></td> <td></td> <td></td> <td></td> <td>VCIII</td> <td></td> <td></td> <td>,</td> <td></td> <td>-</td> <td>97.42%</td>	Site Data					VCIII			,		-	97.42%
Barrier Type (0-Wall, 1-Berm):         0.0         Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Desriver:         60.0 feet         Autos:         2.00         Autos:         4.00         Autos:         4.00         Autos:         4.00         Autos:         4.00         Autos:         40.00         Autos:         40.00         Autos:         40.902         Autos:         40.902         Autos:         40.903         Autos:         40.903         Autos:         40.903         Autos:         40.904         Autos:         40.903         Autos:         40.903         Autos:         40.903         Autos:         40.903         Autos:         40.903         Autos:         40.904         Autos:         40.904         Autos:         40.903         Autos:         40.903         Autos:         40.903         Autos:         40.903         Autos:         40.904         Autos:         40.903         Autos:         40.904         Autos:         40.904		wier Height	0.0 feet			Me						1.84%
Bailer Type (of Vial, 1) (Definit), 1000         O.0         Noise Source Elevations (in feet)           Centerline Dist. to Barrier:         60.0 feet         Noise Source Elevations (in feet)           Barrier Distance to Observer:         0.0 feet         Noise Source Elevations (in feet)           Observer Height (Above Pad):         5.0 feet         Noise Source Elevations (in feet)           Road Elevation:         0.0 feet         Heavy Trucks:         4.000           Road Grade:         0.0 %         Autos:         40.902           Left View:         -90.0 degrees         Medium Trucks:         40.902           FHWA Noise Model Calculations         Finite Road         Fresnel         Barrier Atten         Bern Att           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Att           Medium Trucks:         77.72         -13.94         1.22         -1.20         -5.34         0.000         0.0           Medium Trucks:         82.99         -17.90         1.20         -1.20         -5.34         0.000         0.0           Medium Trucks:         69.8         67.9         66.1         60.1         68.7         6           Medium Trucks:         63.8		•				F	leavv Tru	cks: 86	.5% 2.7%	6 10	0.8%	0.74%
Centerline Dist. to Observer:         60.0 feet         Noise Source Levations (in feet)           Barrier Distance to Observer:         0.0 feet         Autos::         2.00           Observer Height (Abov Pad):         5.0 feet         Medium Trucks::         4.000           Pad Elevation:         0.0 feet         Medium Trucks::         4.000           Road Elevation:         0.0 feet         Lare Equivalent Distance (in feet)         Lare Equivalent Distance (in feet)           Road Grade         0.0%         Autos:: 40.002         Medium Trucks:: 40.804         Heavy Trucks:: 40.902           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atte           Autos::         66.51         3.30         1.20         -1.20         -6.51         0.000         0.0           Medium Trucks:         77.72         -13.84         1.22         -1.20         -5.34         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Lag Paek Hour         Lag Paek 10         CNEL         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         6           Medium Trucks:         63.3												
Barrier Distance to Observer:         0.0 feet         Autos:         2.000           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         4.000           Pad Elevation:         0.0 feet         Medium Trucks:         4.000           Road Grade:         0.0%         Autos:         40.00           Left View:         90.0 degrees         Medium Trucks:         40.002           FHWA Noise Model Calculations         Users:         40.00         Medium Trucks:         40.804           Redivers:         90.0 degrees         Medium Trucks:         40.804         Medium Trucks:         40.000           Medium Trucks:         66.51         3.30         1.20         -1.20         -4.85         0.000         0.01           Medium Trucks:         8.29.9         -17.90         1.20         -1.20         -5.34         0.000         0.01           Medium Trucks:         63.8         62.3         70.8         65.9         64.2         6           Vehicle Nype         Leg Peak Hour         Leg Day         Leg Night         Ldn         CNEL         65.1         63.7         6           Medium Trucks:         63.8         62.3         55.9         64.2         6         6         6<					^	loise Sc			,			
Observer Height (Above Pad):         5.0 feet Pad Elevation:         Medium Trucks:         4.000 Heavy Trucks:         4.000 Heavy Trucks:         4.000 Heavy Trucks:         4.000 Allow           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         40.902           Left View:         -90.0 degrees         Medium Trucks:         40.903           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           VehicleType         REMEL         Traffic Flow         1.20         -1.20         -6.61         0.00         0.0           Medium Trucks:         71.72         -13.94         1.22         -1.20         -5.34         0.000         0.0           Medium Trucks:         82.9         -17.90         1.20         -1.20         -5.34         0.000         0.0           Unmitigate Moise Levels (without Topo and barrier attenuation)         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         66												
Pad Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment.         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Latricitations         Medium Trucks:         40.902           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten           Autos:         66.51         3.30         1.20         -1.20         -4.85         0.000         0.0           Medium Trucks:         77.72         -13.94         1.22         -12.0         -5.01         0.000         0.0           Heavy Trucks:         82.99         -17.90         1.20         -1.20         -5.34         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Paek Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         6           Medium Trucks:         65.1         63.7         54.6         55.9         64.2         6           Vehicle Noise:         <						Mediur	n Trucks:	4.000				
Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         40.902           Left View:         90.0 degrees         Medium Trucks:         40.804           WeikleType         REMEL         Traffic Flow         Distance         Initial Ready Trucks:         40.903           FHWA Noise Model Calculations         Exercise         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           WeikleType         REIMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Medium Trucks:         17.72         -13.94         1.22         -1.20         -5.01         0.000         0.01           Heavy Trucks:         82.99         -17.90         1.20         -1.20         -5.34         0.000         0.01           Unmitigated Noise Levels (without Topo and barrier atternuation)         Vehice/// Vehice/// Vehice/// Vehice/// Vehice/// Kes         65.1         63.7         6           Medium Trucks:         63.8         62.3         55.9         64.4         62.8         6           Medium Trucks:         65.1         63.7         54.6         55.9         64.2	0 1	,				Heav	y Trucks:	8.006	Grade A	ıdjustr	nent: (	0.0
Road Grade:         0.0%         Autos:         40.902           Left View:         -90.0 degrees         Medium Trucks:         40.902           Heavy Trucks:         40.903         Medium Trucks:         40.903           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           Medium Trucks:         77.72         -13.94         1.20         -1.20         -5.01         0.000         0.01           Heavy Trucks:         77.72         -17.90         1.20         -1.20         -5.34         0.000         0.01           Unnitiggated Noise Levels (without Topo and barrier attenuation)         Vehicle Type         Leg Peak Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         66           Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         66           Heavy Trucks:         65.1         <					L	ane Eq	uivalent l	Distance	(in feet)			
Left View:         -90.0 degrees Right View:         Medium Trucks:         40.804 Heavy Trucks:         40.903           FHWA Noise Model Calculations           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten           Autos:         66.51         3.30         1.20         -1.20         -4.85         0.000         0.0           Medium Trucks:         77.72         -13.94         1.22         -1.20         -6.01         0.000         0.0           Medium Trucks:         82.99         -17.90         1.20         -1.20         -6.34         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         6           Medium Trucks:         65.3         63.7         54.4         62.8         6         6           Medium Trucks:         65.1         63.7         54.6         55.9         64.2         6           Medium Trucks:         65.1         63.7         54.6         55.9					-	.uno 24			. ,			
Right View:         90.0 degrees         Heavy Trucks:         40.903           FHWA Noise Model Calculations         Heavy Trucks:         40.903           VehicleType         REIMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Medium Trucks:         66.51         3.30         1.20         -1.20         -4.65         0.000         0.01           Medium Trucks:         71.72         -13.94         1.22         -1.20         -5.01         0.000         0.01           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Deak Hour         Leg Day         Leg Vening         Leg Night         Ldn         CNEL           VehicleType         65.8         67.9         66.1         60.1         68.7         66           Medium Trucks:         65.9         64.2         66         62.8         67         66.8         62.3         70.8         77           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         77           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         14	1					Modiur						
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Atten           Autos:         66.51         3.30         1.20         -1.20         -4.85         0.000         0.0           Medium Trucks:         77.72         -13.94         1.22         -1.20         -5.01         0.000         0.0           Heavy Trucks:         82.99         -17.90         1.20         -1.20         -5.34         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)          -         -         -         -         -         -         -         -         -         -         -         -         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)          -         -         -         -         -         -         -         -         0.000         0.0           Medium Trucks:         69.8         67.9         66.1         60.1         68.7         6         6         -         6         -         6         -         6         -         6         -         6         -         6         -         6         -												
Autos:         66.51         3.30         1.20         -1.20         -4.85         0.000         0.1           Medium Trucks:         77.72         -13.94         1.22         -1.20         -5.01         0.000         0.1           Heavy Trucks:         82.99         -17.90         1.20         -1.20         -5.34         0.000         0.1           Unmitigate Moise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         66           Medium Trucks:         63.8         62.3         55.9         54.4         62.8         66           Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         66           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)	FHWA Noise Mode	el Calculations	5								-	-
Medium Trucks:         77.72         -13.94         1.22         -1.20         -5.01         0.000         0.01           Heavy Trucks:         82.99         -17.90         1.20         -1.20         -5.34         0.000         0.01           Umitigated Noise Levels (without Topo and barrier attenuation)         Use Deving         Leg Night         Ldn         CNEL           VehiceType         Leg Peak Hour         Leg Day         Leg Peak         66.1         60.1         68.7         6           Medium Trucks:         63.8         62.3         55.9         64.4         62.8         6           Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         6           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)          70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresnel	Barrier A	\tten	Berm	Atten
Heavy Trucks:         82.99         -17.90         1.20         -1.20         -5.34         0.000         0.1           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Mutoa:         69.8         67.9         66.1         60.1         68.7         66.         60.1         68.7         66.1         68.7         66.1         68.7         66.1         68.7         66.1         68.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         66.1         66.7         67.8         66.1         66.7         66.1         66.7         66.1         66.7         67.8         67.9         66.1         66.7         67.8         66.1         66.7         67.8         67.8         67.8         67.8         67.9         66.1         66.7         77.8         77.8         77.8         77.8         77.8	Autos:	66.51	3.30		1.20	)	-1.20	-4.	.85 0	).000		0.000
Vehicle Type         Leq Peak Hour         Topo and barrier attenuation)           Vehicle Type         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         66           Medium Trucks:         63.8         62.3         55.9         54.4         62.8         66           Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         66           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)           70.dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	Medium Trucks:	77.72	-13.94		1.22	2	-1.20	-5.	.01 0	).000		0.000
VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         69.8         67.9         66.1         60.1         68.7         66           Medium Trucks:         63.8         62.3         55.9         54.4         62.8         66           Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         66           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)	Heavy Trucks:	82.99	-17.90		1.20	)	-1.20	-5.	34 0	).000		0.000
Autos:         69.8         67.9         66.1         60.1         68.7         6           Medium Trucks:         63.8         62.3         55.9         54.4         62.8         6           Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         6           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)         To dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	Unmitigated Noise	e Levels (witho	out Topo and	barrier a	tten	uation)					-	
Medium Trucks:         63.8         62.3         55.9         54.4         62.8         64.2           Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         66           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)           Zond BA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	VehicleType	Leq Peak Hour	r Leq Day	Le	eq Ev	ening	Leq N	ight	Ldn		CNE	EL
Heavy Trucks:         65.1         63.7         54.6         55.9         64.2         66           Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)         70.dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	Autos:	69.	8 (	67.9		66.1		60.1	68	3.7		69.3
Vehicle Noise:         71.8         70.1         66.8         62.3         70.8         7           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	Medium Trucks:	63.	8 (	52.3		55.9		54.4	62	2.8		63.1
Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	Heavy Trucks:	65.	1 (	63.7		54.6		55.9	64	1.2		64.4
70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         68         146         315         678	Vehicle Noise:	71.	8	70.1		66.8		62.3	70	).8		71.2
Ldn: 68 146 315 678	Centerline Distant	ce to Noise Co	ntour (in feet)									
CNEL: 73 156 337 726								-				
			Ch	IEL:	73	3	156	3	337		726	5

Friday, November 15, 2019

Friday, November 15, 2019

	FHV	/A-RD-77-108	HIGHV	VAY NO	DISE PRI	EDICTIO	N MODEL			
Road Nam	io: OY + P e: Barranca P nt: e/o Redhill	,					lame: The nber: 122			
SITE	SPECIFIC IN	PUT DATA				NC	DISE MOI	DEL INPU	TS	
Highway Data				S	ite Conc	litions (F	lard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 3	6,840 vehicles					Auto	os: 15		
Peak Hour	Percentage:	10%			Med	ium Truc	ks (2 Axle	s <i>):</i> 15		
Peak H	our Volume:	3,684 vehicles			Hea	vy Truck	s (3+ Axle	s <i>):</i> 15		
Vei	hicle Speed:	50 mph		V	ehicle M	liv				
Near/Far Lar	ne Distance:	106 feet		v		leType	Da	/ Evenin	q Nigh	t Daily
Site Data					venie		itos: 77			
	rier Heiaht:	0.0 feet			Me	dium Tru	cks: 84.			
Barrier Type (0-W		0.0 teet				eavv Tru				
Centerline Dis		70.0 feet								
Centerline Dist.		70.0 feet		N	loise So		vations (ii	n feet)		
Barrier Distance		0.0 feet				Autos:				
Observer Height (J		5.0 feet				Trucks:	4.000			
	d Flevation:	0.0 feet			Heavy	Trucks:	8.006	Grade A	Adjustme	ent: 0.0
Roa	d Elevation:	0.0 feet		L	ane Equ	ivalent I	Distance (	in feet)		
1	Road Grade:	0.0%				Autos:	45.826			
	Left View:	-90.0 degree	s		Medium	Trucks:	45.738			
	Right View:	90.0 degree			Heavy	Trucks:	45.826			
FHWA Noise Mode	el Calculation:	s								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite F	Road	Fresnel	Barrier /	Atten E	Berm Atten
Autos:	70.20	3.25		0.46		-1.20	-4.8		0.000	0.000
Medium Trucks:	81.00	-13.98		0.48		-1.20	-5.0		0.000	0.000
Heavy Trucks:	85.38	-17.94		0.46		-1.20	-5.2	28 (	0.000	0.000
Unmitigated Noise			-				1			
VehicleType	Leq Peak Hou			Leq Eve		Leq N		Ldn		CNEL
Autos:	72		70.8		69.1		63.0		1.6	72.2
Medium Trucks:	66		64.8		58.4		56.9	-	5.3	65.6
Heavy Trucks:	66		35.3		56.2		57.5	-	5.9	66.0
Vehicle Noise:	74		72.7		69.6		64.8	7	3.4	73.9
Centerline Distant	ce to Noise Co	ontour (in feet)		70 -"		CE -"	34	60 dB 4		EE dDA
			dn:	70 dl		65 dE 254		60 dBA 546		55 dBA
		-	_an: IFI :	118	-	254		546 587		1,177 1.265
		Ch	ILL.	120	0	212	-	307		1,200

F	HWA-I	RD-77-108	HIGH	HWAY NC	ISE PRI	EDICT	ON MO	DEL			
Scenario: OY + P Road Name: Barranca Road Segment: w/o Tust					1		Name: umber:		owery		
SITE SPECIFIC	INPU	T DATA				Ν	IOISE I	NODE	L INPUT	s	
Highway Data				Si	te Cond	litions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt).	38.9	60 vehicles	3					Autos:	15		
Peak Hour Percentage.		10%			Med	ium Tru	icks (2 /	Axles):	15		
Peak Hour Volume		96 vehicles	3		Hea	vy Truc	ks (3+ )	Axles):	15		
Vehicle Speed		50 mph		14	ehicle M						
Near/Far Lane Distance.	: 1	06 feet		Ve		leTvpe		Dav	Evening	Night	Dailv
Site Data					venic		Autos:	77.5%		9.6%	
					Mo	, dium T		84.8%		10.3%	
Barrier Height		0.0 feet						86.5%		10.3%	
Barrier Type (0-Wall, 1-Berm)		0.0				cuvy n	uons.	00.070	2.170	10.070	0.747
Centerline Dist. to Barrier		70.0 feet		N	oise Sol	urce E	evation	s (in fe	eet)		
Centerline Dist. to Observer Barrier Distance to Observer		0.0 feet				Auto	s: 2.	000			
					Medium	Truck	s: 4.	000			
Observer Height (Above Pad). Pad Elevation		5.0 feet 0.0 feet			Heavy	Truck	s: 8.	006	Grade Ad	iustment.	0.0
Pad Elevation Road Elevation		0.0 feet		1.	ane Equ	ivalen	Distan	ce (in i	feet)		
Road Grade	-	0.0%			ino Equ	Auto		826			
Left View		0.0% 0.0 degree			Medium			738			
Right View		0.0 degree				Truck		826			
FHWA Noise Model Calculati	ons										
VehicleType REMEL	Tra	affic Flow	Dis	stance	Finite F	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos: 70.2	20	3.50		0.46		-1.20		-4.86	0.0	000	0.00
Medium Trucks: 81.0		-13.74		0.48		-1.20		-5.00		000	0.00
Heavy Trucks: 85.	38	-17.70		0.46		-1.20		-5.28	0.0	000	0.00
Unmitigated Noise Levels (w	ithout	Topo and	barri								
VehicleType Leq Peak F	lour	Leq Day		Leq Eve	ning	Leq	Night		Ldn		NEL
	73.0		71.1		69.3		63.2		71.		72.
	66.5		65.0		58.7		57.1		65.		65.
	66.9		65.5		56.5		57.7	7	66.		66.
Vehicle Noise:	74.7		72.9		69.9		65.1	1	73.	6	74.
Centerline Distance to Noise	Conto	our (in feet,	)								
				70 dE			dBA	6	60 dBA		dBA
			Ldn:	122			63		567		222
			VFI :	131			83		609		313

	FHW	A-RD-77-108	HIGHW.	AY NO	OISE PR	EDICTIO	N MODEI	-		
Road Nam	o: OY + P e: MacArthur B t: w/o Redhill /					Project N Job Nun	ame: The nber: 122			
	SPECIFIC IN	PUT DATA						DEL INPUT	ſS	
Highway Data				S	Site Con	ditions (H		Soft = 15)		
Average Daily	raffic (Adt): 3	3,270 vehicles	6				Aut			
Peak Hour I	Percentage:	10%				lium Trucl	,	,		
		3,327 vehicles	5		Hea	vy Trucks	: (3+ Axle	s): 15		
	icle Speed:	50 mph		V	ehicle N	lix				
Near/Far Lar	e Distance:	106 feet			Vehi	cleType	Da	v Evening	Night	Daily
Site Data						Au	tos: 77.	5% 12.9%	9.6%	6 97.429
Bar	rier Heiaht:	0.0 feet			Me	dium Truc	ks: 84.	8% 4.9%	10.3%	6 1.849
Barrier Type (0-Wa	all, 1-Berm):	0.0			H	leavy Truc	ks: 86.	5% 2.7%	10.8%	6 0.749
Centerline Dis		70.0 feet		٨	loise So	urce Elev	ations (i	n feet)		
Centerline Dist. t		70.0 feet				Autos:	2.000	,		
Barrier Distance t		0.0 feet			Mediur	1 Trucks:	4.000			
Observer Height (/	,	5.0 feet			Heav	V Trucks:	8.006	Grade A	djustmen	t: 0.0
	d Elevation:	0.0 feet								
	d Elevation:	0.0 feet		L	ane Equ	ivalent D		,		
F	Road Grade:	0.0%				Autos:	45.826			
	Left View: Right View:	-90.0 degree 90.0 degree				n Trucks: v Trucks:	45.738 45.826			
FHWA Noise Mode	Calculations	-								
VehicleType		Traffic Flow	Distar	nce	Finite	Road	Fresnel	Barrier A	tten Be	erm Atten
Autos:	70.20	2.81		0.46	i	-1.20	-4.	36 0	.000	0.00
Medium Trucks:	81.00	-14.43		0.48		-1.20	-5.	0 00	.000	0.00
Heavy Trucks:	85.38	-18.38		0.46		-1.20	-5.2	28 0	.000	0.00
Unmitigated Noise										
<i>,</i> ,	Leq Peak Hour			eq Ev	~	Leq Ni	-	Ldn		CNEL
Autos:	72.3	-	70.4 64.3		68.6		62.6	71		71.
Medium Trucks:	65.	-			58.0		56.4	64		65.
Heavy Trucks:	66.	-	64.8		55.8		57.1	65		65.
Vehicle Noise:	74.	-	72.2		69.2		64.4	72	.9	73.
Centerline Distand	e to Noise Co	ntour (in feet)	)	70 d	DA I	65 dE	4	60 dBA	5	5 dBA
			🖵				~	510		.100
			Ldn: VFL :	11	-	237 255		510		.182

FHW	A-RD-77-108 H	IGHWAY	NOISE P	REDICT	ION MOI	DEL			
Scenario: OY + P				Project	Name:	The Bo	owery		
Road Name: MacArthur B	lvd.			Job N	umber:	12282			
Road Segment: e/o Redhill A	ve.								
SITE SPECIFIC INF	PUT DATA		0/4- 0-4					S	
Highway Data			Site Cor	nditions	•		,		
Average Daily Traffic (Adt): 29						Autos:	15		
Peak Hour Percentage:	10%			edium Tru			15		
	2,944 vehicles		He	eavy Truc	cks (3+ A	(xles):	15		
Vehicle Speed:	50 mph		Vehicle	Mix					
Near/Far Lane Distance:	106 feet		Veh	nicleType		Day	Evening	Night	Daily
Site Data					Autos:	77.5%	12.9%	9.6%	97.42%
Barrier Height:	0.0 feet		M	ledium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy T	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier:	70.0 feet		Noise S	ource E	levation	s (in fe	eet)		
Centerline Dist. to Observer:	70.0 feet			Auto		000	,		
Barrier Distance to Observer:	0.0 feet		Mediu	m Truck		000			
Observer Height (Above Pad):	5.0 feet		Hea	vy Truck	s: 8(	006	Grade Adj	ustment	: 0.0
Pad Elevation:	0.0 feet								
Road Elevation:	0.0 feet		Lane Eq				feet)		
Road Grade:	0.0%			Auto					
Left View:	-90.0 degrees			m Truck					
Right View:	90.0 degrees		Hea	vy Truck	s: 45.	326			
FHWA Noise Model Calculations			1						
	Traffic Flow	Distance		Road	Fresh	-	Barrier Atte		rm Atten
Autos: 70.20	2.28	-	.46	-1.20		-4.86	0.0		0.000
Medium Trucks: 81.00	-14.96	-	.48	-1.20		-5.00	0.0		0.000
Heavy Trucks: 85.38	-18.91	0	.46	-1.20		-5.28	0.0	00	0.000
Unmitigated Noise Levels (witho			,						
VehicleType Leq Peak Hour	Leq Day		Evening	,	Night		Ldn	-	NEL
Autos: 71.7		9.9	68.1		62.0		70.7		71.3
		3.8	57.5		55.9		64.4		64.6
Medium Trucks: 65.3					56.5		64.9		65.0
Heavy Trucks: 65.7	64	1.3	55.3						
Heavy Trucks: 65.7 Vehicle Noise: 73.4	64	1.3 1.7	55.3 68.6		63.9		72.4		72.9
Heavy Trucks: 65.7	64	1.7				)			
Heavy Trucks: 65.7 Vehicle Noise: 73.4	ntour (in feet)	1.7	68.6	65	63.9	)	72.4	55	72.9

Friday, November 15, 2019

Friday, November 15, 2019

	FHW	A-RD-77-108 HIG	HWAY N	IOISE PF	REDICTION	MODEL			
Road Nam	io: 2040 ie: Grand Ave. nt: s/o Warner A	we.				ame: The E hber: 1228			
SITE	SPECIFIC INF	PUT DATA			NO	ISE MOD	EL INPUTS	5	
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 20	0,010 vehicles				Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truck	s (2 Axles)	: 15		
Peak H	our Volume: 2	2,001 vehicles		Hei	avy Trucks	(3+ Axles)	: 15		
Vei	hicle Speed:	45 mph	-	Vehicle I	Mix				
Near/Far Lar	ne Distance:	88 feet	-		icleType	Day	Evening	Night	Daily
Site Data				10.11	Aut	,		9.6%	97.42%
Pa	rrier Heiaht:	0.0 feet		Me	edium Truc	ks: 84.8	6 4.9%	10.3%	1.84%
Barrier Type (0-W		0.0		ŀ	leavy Truc	ks: 86.59	6 2.7%	10.8%	0.74%
Centerline Dis		60.0 feet		Noine Cr	uree Elev	ations (in	fa a 4)		
Centerline Dist.	to Observer:	60.0 feet	-	NUISE SC	Autos:	2.000	eel)		
Barrier Distance	to Observer:	0.0 feet		Modiu	n Trucks:	4.000			
Observer Height (J	Above Pad):	5.0 feet			v Trucks:	4.000	Grade Adj	istment <sup>.</sup>	0.0
Pa	ad Elevation:	0.0 feet			,			aoumonia.	0.0
	ad Elevation:	0.0 feet		Lane Eq		istance (in	feet)		
1	Road Grade:	0.0%			Autos:	40.902			
	Left View:	-90.0 degrees			n Trucks:	40.804			
	Right View:	90.0 degrees		Heav	y Trucks:	40.903			
FHWA Noise Mode	el Calculations								
VehicleType	REMEL	Traffic Flow D	listance	Finite		Fresnel	Barrier Atte	en Beri	m Atten
Autos:	68.46	1.06	1.2	-	-1.20	-4.85			0.000
Medium Trucks:	79.45	-16.18	1.2	-	-1.20	-5.01			0.000
Heavy Trucks:	84.25	-20.13	1.2	0	-1.20	-5.34	0.0	00	0.000
Unmitigated Noise			rier atter	nuation)					
VehicleType	Leq Peak Hour		,	vening	Leq Nig		Ldn		VEL
Autos:	69.5			65.9		59.8	68.4		69.0
Medium Trucks:	63.3			55.4		53.9	62.3		62.6
Heavy Trucks:	64.1			53.7		54.9	63.3		63.4
Vehicle Noise:	71.4	00.0	1	66.5		61.8	70.3		70.8
Centerline Distant	ce to Noise Cor	ntour (in feet)						-	10.4
		l dn		dBA	65 dB	A	60 dBA		dBA
		CNEL:		i3 i8	136 146		293 315	-	32 78
		GNEL:	. 6	0	146		315	6	10

	FHW	/A-RD-77-108	HIGH	WAY N	OISE PR	REDICTI	ON MODE	-	
Scenar	io: 2040					Project	Name: The	Bowery	
Road Nam	e: Newport Av	e.				Job Ni	imber: 122	82	
Road Segmer	nt: n/o Valcenc	ia Ave.							
	SPECIFIC IN	PUT DATA						DEL INPUT	S
Highway Data				S	Site Con	ditions	'Hard = 10	Soft = 15)	
Average Daily	Traffic (Adt): 2	0,770 vehicles					Aut	os: 15	
Peak Hour	Percentage:	10%			Mee	dium Tru	cks (2 Axle	s): 15	
Peak H	our Volume:	2,077 vehicles			Hea	avy Truc	ks (3+ Axle	s): 15	
Ve	hicle Speed:	40 mph		1	/ehicle I	Mix			
Near/Far Lai	ne Distance:	88 feet				icleType	Da	y Evening	Night Da
Site Data					veni			5% 12.9%	9.6% 97.4
					Ma	edium Tr		8% 4.9%	10.3% 1.8
	rier Height:	0.0 feet				leavy Tr		5% 2.7%	10.3% 1.0
Barrier Type (0-W	. ,	0.0			,	leavy II	JUKS. 00	J/0 2.1/0	10.076 0.7
Centerline Dis		60.0 feet		٨	Voise Sc	ource Ele	evations (i	n feet)	
Centerline Dist.		60.0 feet				Autos	: 2.000		
Barrier Distance		0.0 feet			Mediur	n Trucks	: 4.000		
Observer Height (		5.0 feet			Heav	y Trucks	: 8.006	Grade Ad	iustment: 0.0
	ad Elevation:	0.0 feet			ana Ea	ulualant	Distance	(in feet)	
	ad Elevation:	0.0 feet		-	ane Equ	Autos			
	Road Grade:	0.0%			1 4 K	Autos n Trucks			
	Left View:	-90.0 degree							
	Right View:	90.0 degree	s		Heav	y Trucks	: 40.903		
FHWA Noise Mod	el Calculations								
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite		Fresnel	Barrier Att	en Berm Att
Autos:	66.51	1.73		1.20	)	-1.20	-4.	85 0.0	000 0.
Medium Trucks:	77.72	-15.50		1.22	-	-1.20	-5.		000 0.
Heavy Trucks:	82.99	-19.46		1.20	)	-1.20	-5.	34 0.0	000 0.
Unmitigated Noise									i.
VehicleType	Leq Peak Hou			Leq Ev	· ·	Leq I	0	Ldn	CNEL
Autos:	68.		6.4		64.6		58.5	67.2	
Medium Trucks:	62.		60.7		54.4		52.8	61.3	
Heavy Trucks:	63.	-	52.1		53.1		54.3	62.7	
Vehicle Noise:	70.		68.5		65.3		60.7	69.2	2 (
Centerline Distant	ce to Noise Co	ntour (in feet)		70	04	05	0.4	00 10 4	<i></i>
				70 d		65 0		60 dBA	55 dBA
			dest						
			Ldn: IFL :	53 57		11 12		248 265	534 572

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PR	REDICTIO	N MODE	EL			
Road Nam	io: 2040 e: Redhill Ave nt: n/o Walnut					Project N Job Nu	lame: Th nber: 12		wery		
	SPECIFIC IN	IPUT DATA							. INPUTS	;	
Highway Data				5	Site Con	ditions (I	lard = 1	0, Soi	ft = 15)		
Average Daily	Traffic (Adt):	29,470 vehicles	5				AL	itos:	15		
Peak Hour	Percentage:	10%				dium Truc	,		15		
Peak H	our Volume:	2,947 vehicles	6		Hea	avy Truck	s (3+ Ax	les):	15		
	hicle Speed:	40 mph		1	Vehicle I	Mix					
Near/Far La	ne Distance:	88 feet			Vehi	icleType	D	ay	Evening	Night	Daily
Site Data						AL	itos: 7	7.5%	12.9%	9.6%	97.42%
Bai	rier Height:	0.0 feet			Me	edium Tru	cks: 84	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			F	leavy Tru	cks: 86	6.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	60.0 feet		,	Noise Sc	ource Ele	vations	(in fo	of)		
Centerline Dist.	to Observer:	60.0 feet		<i>.</i>	10/30 00	Autos:			50		
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks:	4.00	-			
Observer Height (	Above Pad):	5.0 feet				v Trucks:			Grade Adju	ustment	: 0.0
	ad Elevation:	0.0 feet				,		-			
	ad Elevation:	0.0 feet		L	Lane Equ	uivalent l			eet)		
	Road Grade:	0.0%				Autos:		-			
	Left View:	-90.0 degree				n Trucks:					
	Right View:	90.0 degree	es		Heav	y Trucks:	40.90	3			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresnel		Barrier Atte		m Atten
Autos:	66.51	3.25		1.20	-	-1.20		1.85	0.0		0.000
Medium Trucks:	77.72	-13.98		1.22	-	-1.20		5.01	0.0		0.000
Heavy Trucks:	82.99	-17.94		1.20	)	-1.20	-5	5.34	0.0	00	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou			.eq Ev	/ening	Leq N	•		Ldn	C	NEL
Autos:	69		67.9		66.1		60.1		68.7		69.3
Medium Trucks:	63		62.2		55.9		54.3		62.8		63.0
Heavy Trucks:	65		63.6		54.6		55.9		64.2		64.3
Vehicle Noise:	71		70.0		66.8		62.2		70.8		71.2
		ntour (in foot	)								
Centerline Distan	ce to Noise Co	mour (in reel)	1	70 -	10.4	05 -1					
Centerline Distan	ce to Noise Co			70 a		65 dl			) dBA		dBA
Centerline Distant	ce to Noise Co		Ldn:	70 a 61 72	7	65 di 145	5		0 dBA 313 335	6	dBA 374 722

	FHW	A-RD-77-108 H	IIGHWA	AY NOI	SE PF	REDICT		DEL			i i
	o: 2040 e: Redhill Ave. nt: s/o Walnut A	lve.					Name: lumber:		owery		
	SPECIFIC IN	PUT DATA				ľ	IOISE N	IODE	L INPUT	s	
Highway Data				Sit	e Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 3	1,240 vehicles					,	Autos:	15		
Peak Hour	Percentage:	10%			Me	dium Tr	ucks (2 A	xles):	15		
Peak H	our Volume:	3,124 vehicles			He	avy Tru	cks (3+ A	xles):	15		
Vef	hicle Speed:	40 mph		Vo	hicle	Mix					
Near/Far Lar	ne Distance:	88 feet		ve		icleType		Day	Evening	Night	Daily
Site Data					ven			Day 77.5%	•	9.6%	
				_	14	ر edium T		77.5% 84.8%		9.0%	
	rier Height:	0.0 feet				Heavy T		86.5%		10.3%	
Barrier Type (0-Wa		0.0			'	ieavy i	lucks.	00.570	2.170	10.070	0.7470
Centerline Dis		60.0 feet		No	ise So	ource E	levations	s (in fe	eet)		
Centerline Dist. t		60.0 feet				Auto	s: 2.0	000			
Barrier Distance t		0.0 feet		1	Mediu	m Truck	s: 4.0	000			
Observer Height (/	,	5.0 feet			Heav	y Truck	s: 8.0	006	Grade Ad	justment	: 0.0
	d Elevation:	0.0 feet		1.0		uivelen	t Distand	o (in	fact)		
	d Elevation:	0.0 feet		Ldi	ne Eq				leel)		
F	Road Grade:	0.0%			Madiu	Auto m Truck					
	Left View:	-90.0 degree									
	Right View:	90.0 degree:	5		neav	ry Truck	8. 40.3	903			
FHWA Noise Mode	el Calculations										-
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresn	el	Barrier Att	en Be	rm Atten
Autos:	66.51	3.51		1.20		-1.20		-4.85	0.0	000	0.000
Medium Trucks:	77.72	-13.73		1.22		-1.20		-5.01	0.0	000	0.000
Heavy Trucks:	82.99	-17.69		1.20		-1.20		-5.34	0.0	000	0.000
Unmitigated Noise	e Levels (witho	ut Topo and b	arrier a	ttenua	tion)						-
VehicleType	Leq Peak Hour	Leq Day	Le	eq Ever	ning	Leq	Night		Ldn	C	NEL
Autos:	70.0	) 6	8.1		66.4		60.3		68.9	9	69.5
Medium Trucks:	64.0	) 6	2.5		56.1		54.6		63.1	1	63.3
Heavy Trucks:	65.3	36	3.9		54.9		56.1		64.5	5	64.6
Vehicle Noise:	72.0	) 7	0.3		67.0		62.5		71.0	0	71.5
Centerline Distance	e to Noise Co	ntour (in feet)									-
				70 dB/	4	65	dBA	6	60 dBA	55	ō dBA
		L	dn:	70		1	51		325	1	701
		CN	EL:	75		1	62		348	1	750

Friday, November 15, 2019

Friday, November 15, 2019

	FH\	WA-RD-77-108	HIGH	WAY NO	DISE PI	REDICT	ION MOI	DEL			
Road Nam	io: 2040 ne: Redhill Ave nt: n/o Valcen						t Name: Number:				
	SPECIFIC IN	NPUT DATA							L INPUTS		
Highway Data				S	ite Cor	ditions	: (Hard =	10, S	oft = 15)		
	Traffic (Adt): Percentage: lour Volume:	32,000 vehicle 10% 3.200 vehicle					ucks (2 A cks (3+ A		15		
	hicle Speed:	45 mph	3	_			010 (01 7	0000).	10		
Near/Far La		88 feet		V	ehicle						
	Diotaneo.	00 1000			Veh	icleTyp		Day	•	Night	Daily
Site Data								77.5%		9.6%	97.42%
Ba	rrier Height:	0.0 feet				edium 1		84.8%		10.3%	1.84%
Barrier Type (0-W	'all, 1-Berm):	0.0				Heavy 1	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	st. to Barrier:	60.0 feet		N	oise S	ource E	levation	s (in f	eet)		
Centerline Dist.	to Observer:	60.0 feet				Auto		000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck		000			
Observer Height (	Above Pad):	5.0 feet				v Truck		006	Grade Adju	stment:	0.0
Pa	ad Elevation:	0.0 feet				,			,		
Roa	ad Elevation:	0.0 feet		L	ane Eq		t Distand	ce (in	feet)		
	Road Grade:	0.0%				Auto		902			
	Left View:	-90.0 degre	es			m Truck					
	Right View:	90.0 degre	es		Hear	y Truck	ks: 40.9	903			
FHWA Noise Mod	el Calculation	is		- 1							
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el	Barrier Atte		n Atten
Autos:	68.46	3.10		1.20		-1.20		-4.85	0.00	00	0.000
Medium Trucks:	79.45			1.22		-1.20		-5.01	0.00		0.000
Heavy Trucks:	84.25	-18.09		1.20		-1.20		-5.34	0.00	00	0.000
Unmitigated Nois			barrie								
VehicleType	Leq Peak Ho			Leq Eve		Leq	Night		Ldn	CN	IEL
Autos:			69.7		67.9		61.8		70.5		71.1
Medium Trucks:			63.8		57.5		55.9		64.4		64.6
Heavy Trucks:	66	3.2	64.7		55.7		57.0		65.3		65.4
Vehicle Noise: 73.4 71.7					68.5		63.8		72.4		72.8
Centerline Distan	ce to Noise C	ontour (in feet	)								
				70 dl			dBA		60 dBA	55 0	
			Ldn:	86			86		401		64
		C	NEL:	93		2	200		430	92	27

	FHW	/A-RD-77-108 H	IIGHW.	AY NOIS	EPREDICT	ION MODE		
	o: 2040					Name: The		
	e: Redhill Ave.				Job N	umber: 122	82	
Road Segmer	nt: s/o Valcenc	ia Ave.						
	SPECIFIC IN	PUT DATA					del input	s
Highway Data				Site	Conditions	(Hard = 10	Soft = 15)	
Average Daily	Traffic (Adt): 3	0,940 vehicles				Aut	os: 15	
Peak Hour	Percentage:	10%			Medium Tr	ucks (2 Axle	s): 15	
Peak H	our Volume:	3,094 vehicles			Heavy Tru	cks (3+ Axle	es): 15	
Vel	hicle Speed:	50 mph		Voh	icle Mix			
Near/Far Lar	ne Distance:	88 feet		ven	VehicleType	Da	v Evening	Night Daily
Site Data							5% 12.9%	9.6% 97.42
				_	, Medium T		8% 4.9%	
	rier Height:	0.0 feet			Heavy T		5% 2.7%	
Barrier Type (0-W		0.0			Tieavy T	ucks. 00	370 2.170	10.070 0.74
Centerline Dis		60.0 feet		Noi	e Source E	levations (i	n feet)	
Centerline Dist.		60.0 feet			Auto	s: 2.000		
Barrier Distance		0.0 feet		N	edium Truck	s: 4.000		
Observer Height ()		5.0 feet			Heavy Truck	s: 8.006	Grade Ad	ljustment: 0.0
	d Elevation:	0.0 feet		1.00	- Faulualan	Distance	(in fact)	
	d Elevation:	0.0 feet		Lan	e Equivalen		,	
ŀ	Road Grade:	0.0%			Auto			
	Left View:	-90.0 degrees			edium Truck			
	Right View:	90.0 degrees	5		Heavy Truck	s: 40.903	•	
FHWA Noise Mode	el Calculations	5						
VehicleType	REMEL	Traffic Flow	Distar	nce F	inite Road	Fresnel	Barrier At	ten Berm Atter
Autos:	70.20	2.50		1.20	-1.20	-4.	85 0.	000 0.00
Medium Trucks:	81.00	-14.74		1.22	-1.20	-5.	01 0.	000 0.00
Heavy Trucks:	85.38	-18.70		1.20	-1.20	-5.	34 0.	000 0.00
Unmitigated Noise	e Levels (with	out Topo and b	arrier a	attenuat	on)			
VehicleType	Leq Peak Hou	r Leq Day	L	eq Eveni	ng Leq	Night	Ldn	CNEL
Autos:	72.	7 7	0.8		69.0	63.0	71.	6 72
Medium Trucks:	66.	3 6	4.8		58.4	56.9	65.	3 65
Heavy Trucks:	66.	7 6	5.3		56.2	57.5	65.	8 66
Vehicle Noise:	74.	4 7	2.6		69.6	64.8	73.	4 73
Contorlino Distan	e to Noise Co	ntour (in feet)						
Centernine Distant				70 dBA	65	dBA	60 dBA	55 dBA
Centernine Distant								
oenternine Distant		L	dn:	101	2	17	467	1,006

	FHW	/A-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIC	N MODE	L			
Scenario: Road Name:	Redhill Ave.						<i>lame:</i> Th mber: 12	e Bowery 282			
Road Segment:											
	PECIFIC IN	PUT DATA						DEL INF			
Highway Data					Site Con	ditions (I		), Soft = 1	,		
Average Daily Tra			6					tos: 15			
Peak Hour Pe		10%				dium Truc		,			
		3,845 vehicles	3		Hea	avy Truck	s (3+ Axl	es): 15			
	le Speed:	50 mph			Vehicle I	Nix					
Near/Far Lane	Distance:	88 feet		F	Vehi	cleType	Da	ay Ever	ing Ni	ght	Daily
Site Data						AL	itos: 77	.5% 12	.9%	9.6%	97.429
Barrie	er Height:	0.0 feet			Me	edium Tru	cks: 84	.8% 4	.9% 10	0.3%	1.849
Barrier Type (0-Wall	•	0.0			ŀ	leavy Tru	cks: 86	.5% 2	.7% 10	0.8%	0.749
Centerline Dist.	to Barrier:	60.0 feet		-	Noise So	urce Ele	vations (	in feet)			
Centerline Dist. to	Observer:	60.0 feet		E F		Autos		,			
Barrier Distance to	Observer:	0.0 feet			Modiur	n Trucks:		-			
Observer Height (Ab	ove Pad):	5.0 feet				y Trucks:			e Adjusti	ment:	0.0
Pad	Elevation:	0.0 feet						-			
Road	Elevation:	0.0 feet		1	Lane Equ	uivalent l					
	ad Grade:	0.0%				Autos:		-			
	Left View:	-90.0 degree	es			n Trucks:					
F	Right View:	90.0 degree	es		Heav	y Trucks:	40.90	3			
FHWA Noise Model	Calculations	6									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrie	er Atten	Bern	n Atten
Autos:	70.20	3.44		1.20	0	-1.20	-4	.85	0.000		0.00
Medium Trucks:	81.00	-13.80		1.2	-	-1.20		.01	0.000		0.00
Heavy Trucks:	85.38	-17.75		1.20	0	-1.20	-5	.34	0.000		0.00
Unmitigated Noise L					<b>(</b>						
	eq Peak Hou			Leg Ev	~	Leq N	•	Ldn		CN	
Autos:	73.	-	71.8		70.0		63.9		72.6		73.
Medium Trucks:	67.	-	65.7		59.4		57.8		66.3		66.
Heavy Trucks:	67.	-	66.2		57.2		58.4		66.8		66.
Vehicle Noise:	75.	3	73.6		70.5		65.8		74.3		74.
Centerline Distance	to Noise Co	ntour (in feet	)								
				70 c	dBA	65 di	BA	60 dBA	4	55 0	
			Ldn: VFI :	11		25° 269		540 580		1,1 1,2	

Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Height:         0.0         Centeline Dist. to Barrier:         60.0 feet         Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Diserver:         60.0 feet         Noise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source Ilevation:         0.0           Observer Height (Above Pad):         5.0 feet         Noise Source (in feet)         Noise Source Ilevation:         0.0           Road Elevation:         0.0 feet         Autos:         40.902         Medium Trucks:         40.902           Road Grade:         0.0%         Left View:         90.0 degrees         Medium Trucks:         40.902           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           Autos:         70.20         3.29         1.20         -1.20         -6.34         0.000         0.           Medium Trucks:         81.00         -13.95         1.22         -1.20         -6.34 <td< th=""><th></th><th>FHW</th><th>A-RD-77-108 I</th><th>IIGHWA</th><th>Y NO</th><th>OISE PR</th><th>EDICTIO</th><th>N MODE</th><th>L</th><th></th><th></th><th></th></td<>		FHW	A-RD-77-108 I	IIGHWA	Y NO	OISE PR	EDICTIO	N MODE	L			
Road Segment: n/o Carnegie Ave.           SITE SPECIFIC INPUT DATA         NOISE MODEL INPUTS           Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         37,150 vehicles         Autos::         15           Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         15           Vehicle Speed:         50 mph         Vehicle Mix           Near/Far Lane Distance:         88 feet         Vehicle Type         Day         Levning         Night           Barrier Theight:         0.0 feet         Autos::         10%           Barrier Theight:         0.0 feet         Medium Trucks:         86.5%         2.7%         10.8%         Might         Might         Might         Might         Notion:           Barrier Theight:         0.0 feet         Autos::         2.7%         1.0%         Might         Might         Might         Notice Trans         Noise Source Elevation:         Notice Mix:           Barrier Nation:         0.0 feet	Scenar	io: 2040					Project N	ame: Th	e Bowery			
SITE SPECIFIC INPUT DATA         NOISE MODEL INPUTS           Highway Data         Site Conditions (Hard = 10, Soft = 15)         Autos:: 15           Average Daily Traffic (Adt): 37,150 vehicles         Autos:: 15         Heavy Trucks (24 ke): 15           Peak Hour Poroning: 3,715 vehicles         Medium Trucks (24 ke): 15         Heavy Trucks (34 Axles): 15           Vehicle Speed: 50 mph         Noise Darier Height: 0.0 feet         Autos:: 77.5% 12.9% 9.6% 97.4           Barrier Height: 0.0 feet         Medium Trucks: 84.8% 4.9% 10.3% 1.8           Barrier Jype (O-Wall, 1-Berrn): 0.0         Centerline Dist. to Barrier: 60.0 feet         Heavy Trucks: 86.5% 2.7% 10.8% 0.7           Centerline Dist. to Observer: 0.0 feet         Moise Source Elevations (in feet)         Noise Source Elevations (in feet)           Pad Elevation: 0.0 feet         Natos: 4.000         Heavy Trucks: 4.000         Heavy Trucks: 4.000           Pad Elevation: 0.0 feet         Road Grade: 0.0%         Left View: -90.0 degrees         Medium Trucks: 4.000         Heavy Trucks: 4.000           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           VehicleType         Leq Day         Leq Night         Ldn         CNE         CNE           WehicleType         Leq Night	Road Nam	e: Redhill Ave.					Job Nur	nber: 12	282			
Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adi):         37,150 vehicles         Autos:         15           Peak Hour Porcentage:         10%         Medium Trucks: (24 Avles):         15           Peak Hour Volume:         3,715 vehicles         Medium Trucks: (24 Avles):         15           Vehicle Speed:         50 mph         Vehicle Mix         Vehicle Mix         Vehicle Mix           Site Data         Vehicle Mix         Vehicle Mix         Vehicle Mix         9,6%,97.4           Barrier Height:         0.0 feet         Autos:: 77.5%,12.9%,9.6%,97.4         0.3%,07.5         10.8%,07.4           Barrier Type (0-Wail, 1-Berm):         0.0         feet         Heavy Trucks: 84.8%, 4.9%,10.3%,1.8         10.3%,1.8           Barrier Distance to Observer:         60.0 feet         Medium Trucks: 2.000         Medium Trucks: 4.000         Heavy Trucks: 8.0.06         Grade Adjustment: 0.0           Pad Elevation:         0.0 feet         Road Grade:         0.0%         Heavy Trucks: 40.003         Heavy Trucks: 40.003           FHWA Noise Model Calculations         Vehicle Type         Laft View: -90.0 degrees         Heavy Trucks: 40.000         0.0           Medium Trucks:         81.00         -13.95         1.20         -1.20         -4.85         0.000	Road Segme	nt: n/o Carnegi	e Ave.									
Average Daily Traffic (Ad):         37,150 vehicles         Autos:         15           Peak Hour Percentage:         10%         Medium Trucks: (2 Axles):         15           Peak Hour Volume:         3,715 vehicles         Medium Trucks: (2 Axles):         15           Vehicle Speed:         50 mph         Heavy Trucks (3 Axles):         15           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Height:         0.0 feet         Medium Trucks:         48.4%         4.9%         10.3%         16           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Dasrver:         0.0 feet         Medium Trucks:         8.0%         2.7%         10.8%         0.7           Centerline Dist. to Deserver:         0.0 feet         Autos:         2.000         Medium Trucks:         8.006         Grade Adjustment:         0.0           Centerline Dist. to Observer:         0.0 feet         Autos:         2.00         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         Eet         Autos:         1.20         -1.20         -4.85         0.000         0.           Heavy Trucks:         8.100         -13.95         1.22		SPECIFIC IN	PUT DATA									
Break Hour Percentage         10%         Medium Trucks (2 Avles):         15           Peak Hour Volume:         3,715 vehicles         Heavy Trucks (3 Avles):         15           Vehicle Speed:         50 mph         Heavy Trucks (3 Avles):         15           Vehicle Speed:         50 mph         Vehicle Type         Day         Evening         Night         Das           Site Data	Highway Data				S	Site Con	ditions (H	lard = 10	, Soft = 1	5)		
Peak Hour Volume:         3,715 vehicles           Vehicle Speed:         50 mph           Near/Far Lane Distance:         88 feet         Vehicle Mix           Site Data         vehicle Type         Day         Evening         Night         Day           Barrier Height:         0.0 feet         Mautos:         77.5%         12.9%         9.6%         9.4%           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8%           Barrier Jype (0-Wall, 1-Berm):         0.0         feet         Heavy Trucks:         86.5%         2.7%         10.8%         0.3%         1.8%           Barrier Distance to Observer:         60.0 feet         Moise Source Elevations (in feet)         0.0%         Medium Trucks:         4.000         0.0%         Medium Trucks:         4.000         0.0%           Left View:         -90.0 degrees         Medium Trucks:         40.804         Heavy Trucks:         40.804           Heavy Trucks:         81.00         -13.95         1.20         -1.20         -4.85         0.000         0.0           Medium Trucks:         81.00         -13.95         1.22         -1.20         -6.01         0.000         0.0           Medium T	Average Daily	Traffic (Adt): 3	7,150 vehicles					Au	tos: 15			
Vehicle Speed:         50 mph Near/Far Lane Distance:         Vehicle Speed:         50 mph Near/Far Lane Distance:           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Height:         0.0 feet         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type (0-Wall, 1-Berm):         0.0         0         feet         Medium Trucks:         84.8%         4.9%         10.3%         18.           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Medium Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Dasrever:         0.0 feet         Moles Source Elevations (in feet)         Medium Trucks:         8.006         Grade Adjustment:         0.0           Barrier Jostance to Observer:         0.0 feet         Autos:         2.000         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Grade:         0.0%         E         Autos:         40.902         Heavy Trucks:         40.902           Left View:         90.0 degrees         Medium Trucks:         40.804         Heavy Trucks:         40.900         0.0           Medium Trucks:         81.00         -13.95         1.20         -1.20	Peak Hour	Percentage:	10%			Mee	dium Truc	ks (2 Axle	es): 15			
Near/Far Lane Distance:         B feet         Venicle Mix         Evening         Night         Day         Evening         Night         Day           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type (V-Walt, 1-Berm):         0.0         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type (V-Walt, 1-Berm):         0.0         Centerline Dist. to Barrier:         60.0 feet         Heavy Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Type (V-Walt, 1-Berm):         0.0         feet         Heavy Trucks:         80.6%         2.7%         10.8%         0.7           Centerline Dist. to Dasrver:         60.0 feet         Motise Source Elevation: (in feet)         Noise Source Elevation: 4.000         Medium Trucks: 4.000         Medium Trucks: 4.000         Medium Trucks: 40.902         Medium Trucks: 81.00         13.95         1.20         -1.20         -6.51         0.000         0.0           Heavy Trucks:         85.38         -17.90         1.20         -1.20         -5.34         0.000         0.0	Peak H	lour Volume:	3,715 vehicles			Hea	avy Truck	s (3+ Axle	es): 15			
Near/Far Lane Distance:         88 feet         VehicleType         Day         Evening         Night         Day           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         18.           Barrier Type (0-Wall, 1-Berm):         0.0 feet         Medium Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Doserver:         60.0 feet         Moles Source Elevations (in feet)         0.06         Medium Trucks:         8.006         Grade Adjustment:         0.0           Deserver Height (Nove Pad):         5.0 feet         Autos:         2.000         Medium Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         40.902         Heavy Trucks:         40.902           Left View:         90.0 degrees         Medium Trucks:         40.804         Heavy Trucks:         40.900         0.0           Medium Trucks:         81.00         -13.95         1.20         -1.20         -4.85         0.000         0.0           Medium Trucks:         85.38         -17.90         1.20         -1.20	Ve	hicle Speed:	50 mph		L.	/ohiclo I	Nix					
Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         15.8%           Barrier Height:         0.0         Centerine Dist. to Barrier:         60.0 feet         Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Centerine Dist. to Barrier:         60.0 feet         Noise Source Elevations (in feet)         Noise Source Elevations (in feet)         Noise Source Elevations         0.0         Noise Source Elevations         0.0         Noise Source Ilevations (in feet)         Noise Source Ilevations         Noise Source Ilevations         Noise Source Ilevations         0.0         Noise Source Ilevations         Noise Source Ilevations         Noise Source Ilevations         0.0         Noise Source Ilevations         Noise Ilevations         Noise Ilevations         Noise Ilevatis and alilevation and align and alilevatis and align and alileva	Near/Far La	ne Distance:	88 feet		F			De	av Even	ina Ni	aht	Daily
Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.8           Barrier Type (0-Wall, 1-Berm):         0.0         Feed State Stat	Site Data					1011			,	· ·	-	97.42%
Barrier Type (0-Wall, 1-Berm):         0.0         Heavy Trucks:         86.5%         2.7%         10.8%         0.7           Centerline Dist. to Desriver:         60.0 feet         Autos:         2.000         Autos:         40.000         Autos:         40.000         Autos:         40.000         Autos:         40.000         Autos:         40.000         Autos:         40.902         Autos:         40.902         Autos:         40.902         Autos:         40.902         Autos:         40.903         Autos: <td< td=""><td>Ba</td><td>rrier Height:</td><td>0.0 feet</td><td></td><td></td><td>Me</td><td>edium Tru</td><td>cks: 84</td><td></td><td></td><td></td><td>1.84%</td></td<>	Ba	rrier Height:	0.0 feet			Me	edium Tru	cks: 84				1.84%
Centerline Dist. to Diserver:         60.0 feet           Centerline Dist. to Observer:         60.0 feet           Disterver:         60.0 feet           Road Elevation:         0.0 feet           Road Grade:         0.0%           Left View:         90.0 degrees           Right View:         90.0 degrees           WehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Att           Autos:         70.20         3.29         1.20         -1.20         -6.34         0.000         0.0           Heavy Trucks:         81.00         -13.95         1.22         -1.20         -5.34         0.000         0.0           Heavy Trucks:         87.38         -17.90         Leq Right         Ldn         CNEL           VehicleType         Represend Deverter tervation         Leq Right         Conter         Conter           Medium Trucks:         81.00         -13.95         1.22         -1.20<		•				F	leavy Tru	cks: 86	.5% 2.	7% 10	).8%	0.74%
Centerline Dist. to Observer:         60.0 feet           Barrier Distance to Observer:         0.0 feet           Barrier Distance to Observer:         0.0 feet           Observer Height (Above Pad):         5.0 feet           Pad Elevation:         0.0 feet           Road Grade:         0.0 feet           Road Grade:         0.0 feet           Autos:         40.902           Left View:         -90.0 degrees           Right View:         90.0 degrees           VehicleType         REMEL           Traffic Flow         Distance           VehicleType         REMEL           Traffic Flow         Distance           VehicleType         Remet           Medium Trucks:         81.00           -13.95         1.22           -120         -6.01           Medium Trucks:         81.00           -13.95         1.22           -120         -5.34           0.000         0.           Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peak Hour         Leq Evening           Leq Evening         Leq Night         Ldn           Autos:         73.5         71.6         69.8						1-1 0-			(m. 6 4)			
Barrier Distance to Observer:         0.0 feet         Medium Trucks:         4.000           Observer Height (Above Pad):         5.0 feet         Medium Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Road Grade:         0.0%         Latt View:         4.000           Lett View:         -90.0 degrees         Medium Trucks:         4.000         Medium Trucks:         4.000           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           Autos:         T0.20         3.29         1.20         -1.20         -4.85         0.000         0.0           Medium Trucks:         81.00         -13.95         1.22         -1.20         -6.01         0.000         0.0           Heavy Trucks:         85.38         -17.90         1.20         -1.20         -6.01         0.000         0.0           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Paek Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         74         74	Centerline Dist.	to Observer:	60.0 feet		^	ioise so			,			
Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         40.902         Medium Trucks:         40.902           Left View:         90.0 degrees         Medium Trucks:         40.804         Heavy Trucks:         40.903           FHWA Noise Model Calculations         Distance         Friet Road         Fresnel         Barrier Atten         Berm Att           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           Medium Trucks:         81.90         -13.95         1.20         -1.20         -6.34         0.000         0.           Heavy Trucks:         85.38         -17.90         1.20         -1.20         -5.34         0.000         0.           Unmitigated Noise Levels (without Topo and barrier atternation)         VehicleNype         Eq Peak Hour         Leq Reving         Leq Night         Ldn         CNEL           Autos:         75.2         71.6	Barrier Distance	to Observer:										
Pad Elevation:         0.0 feet         Heavy Trucks:         8.00/s         Grade Adjustment.         0.0           Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Latrics:         40.902         Medium Trucks:         40.902           Left View:         -90.0 degrees         Medium Trucks:         40.902         Medium Trucks:         40.902           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           Autos:         70.20         3.29         1.20         -1.20         -6.01         0.000         0.           Medium Trucks:         81.00         -13.95         1.22         -1.20         -5.01         0.000         0.           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         7           Medium Trucks:         67.5         66.1         57.0         58.3         66.6         6           Vehicle Noise:         75.2	Observer Height (	Above Pad):	5.0 feet									
Road Grade:         0.0%         Autos:         40.902           Left View:         -90.0 degrees         Medium Trucks:         40.902           Heavy Trucks:         40.902         Medium Trucks:         40.903           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           Medium Trucks:         81.00         -13.95         1.22         -1.20         -6.01         0.000         0.           Heavy Trucks:         81.00         -13.95         1.22         -1.20         -5.34         0.000         0.           Unnitiggate Moise Levels (without Topo and barrier attenuation)         Vehicle Type         Leg Peak Hour         Leg Day         Leg Evening         Leg Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         7           Medium Trucks:         67.5         66.1         57.0         58.3         66.6         6           Vehicle Noise:         75.2         73.4		,	0.0 feet			Heav	y Trucks:	8.006	6 Grade	e Adjusti	nent: (	J.U
Left View:         -90.0 degrees         Medium Trucks:         40.804           Right View:         90.0 degrees         Heavy Trucks:         40.903           FHWA Noise Model Calculations         Emetal         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Att           Medium Trucks:         81.00         -13.95         1.20         -1.20         -4.85         0.000         0.           Medium Trucks:         85.38         -17.90         1.20         -1.20         -5.34         0.000         0.           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Deak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         74           Medium Trucks:         67.1         65.6         59.2         57.7         66.1         66           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         74           Centerline Distance to	Roa	ad Elevation:	0.0 feet		L	ane Equ	uivalent L	Distance	(in feet)			
Right View.         90.0 degrees         Heavy Trucks:         40.903           FHWA Noise Model Calculations         Heavy Trucks:         40.903           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Att           Autos:         70.20         3.29         1.20         -1.20         -6.01         0.000         0.           Medium Trucks:         81.00         -13.95         1.22         -1.20         -5.01         0.000         0.           Heavy Trucks:         85.38         -17.90         1.20         -5.34         0.000         0.           Ummitgated Noise Levels (without Topo and barrier attenuation)         Vehicle/pype         Leq Peak Hour         Leq Right         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         74           Medium Trucks:         67.1         65.6         57.0         58.3         66.6         66           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         74           Medium Trucks:         67.5         66.1         57.0         58.3         66.6         66		Road Grade:	0.0%				Autos:	40.90	2		-	-
Fill         Fill         Control         Cont         Cont         Cont		Left View:	-90.0 degree	s		Mediur	n Trucks:	40.804	4			
Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bern Att           Autos:         70.20         3.29         1.20         -1.20         -4.85         0.000         0.           Medium Trucks:         81.00         -13.95         1.22         -1.20         -6.01         0.000         0.           Heavy Trucks:         85.38         -17.90         1.20         -1.20         -5.34         0.000         0.           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         66.1		Right View:	90.0 degree	s		Heav	y Trucks:	40.90	3			
Autos:         70.20         3.29         1.20         -1.20         -4.85         0.000         0.           Medium Trucks:         81.00         -13.95         1.22         -1.20         -6.01         0.000         0.           Heavy Trucks:         85.38         -17.90         1.20         -1.20         -5.34         0.000         0.           Unmitigate Moise Levels (without Topo and barrie attenuation)         Leq Evening         Leq Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         7           Medium Trucks:         67.1         65.6         59.2         57.7         66.1         6           Heavy Trucks:         67.5         66.1         57.0         58.3         66.6         6           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         7           Centerline Distance to Noise Contour (in feet)         70.dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	FHWA Noise Mod	el Calculations	;									
Medium Trucks:         81.00         -13.95         1.22         -1.20         -5.01         0.000         0.           Heavy Trucks:         85.38         -17.90         1.20         -1.20         -5.34         0.000         0.           Umitigated Noise Levels (without Topo and barrier attenuation)         Use Reving         Leq Night         Ldn         CNEL           VehiceType         Leq Peak Hour         Leq Dev         Leq Reving         63.8         72.4         70           Medium Trucks:         67.1         65.6         59.2         57.7         66.1         66         60           Heavy Trucks:         67.1         65.6         74.2         70         65.6         74.2         70           Centerline Distance to Noise Contour (in feet)          70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresnel	Barrie	r Atten	Berm	Atten
Heavy Trucks:         85.38         -17.90         1.20         -1.20         -5.34         0.000         0.           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Mutoa:         73.5         71.6         69.8         63.8         72.4         CNEL           Medium Trucks:         67.5         66.1         59.2         57.7         66.1         66           Heavy Trucks:         67.5         66.1         57.0         58.3         66.6         66           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         74           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         74           Centerline Distance to Noise Contour (in feet)         To dBA         65 dBA         60 dBA         55 dBA         52.8         1,137	Autos:	70.20	3.29		1.20	Ì	-1.20	-4.	85	0.000		0.000
Vehicle Type         Leq Peak Hour         Topo and barrier attenuation)           Vehicle Type         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         T           Medium Trucks:         67.1         65.6         59.2         57.7         66.1         6           Heavy Trucks:         67.5         66.1         57.0         58.3         66.6         6           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         T           Centerline Distance to Noise Contour (in feet)          70.dBA         65.dBA         60.dBA         55.dBA           Ldn:         114         245         528         1,137	Medium Trucks:	81.00	-13.95		1.22	2	-1.20	-5.	01	0.000		0.000
VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         73.5         71.6         69.8         63.8         72.4         71           Medium Trucks:         67.1         65.6         59.2         57.7         66.1         66.6           Heavy Trucks:         67.5         66.1         57.0         58.3         66.6         66           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         71           Centerline Distance to Noise Contour (in feet)           10         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	Heavy Trucks:	85.38	-17.90		1.20	)	-1.20	-5.	34	0.000		0.000
Autos:         73.5         71.6         69.8         63.8         72.4         73.4           Medium Trucks:         67.1         65.6         59.2         57.7         66.1         66.1           Heavy Trucks:         67.5         66.1         57.0         58.3         66.6         66           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         76           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	Unmitigated Nois	e Levels (witho	out Topo and I	arrier a	ttenı	uation)						
Medium Trucks:         67.1         65.6         59.2         57.7         66.1         66.1           Heavy Trucks:         67.5         66.1         57.0         58.3         66.6         66.1           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         77.2           Centerline Distance to Noise Contour (in feet)         70.4BA         65.6BA         60.0BA         55.4BA           Ldn:         114         245         528         1,137	VehicleType	Leq Peak Hour	r Leq Day	Le	q Ev	ening	Leq N	ight	Ldn		CNE	EL
Heavy Trucks:         67.5         66.1         57.0         58.3         66.6         66.7           Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         76.2           Centerline Distance to Noise Contour (in feet)           270 dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	Autos:	73.	5 7	1.6		69.8		63.8		72.4		73.0
Vehicle Noise:         75.2         73.4         70.4         65.6         74.2         77           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	Medium Trucks:	67.	1 6	5.6		59.2		57.7		66.1		66.4
Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	· · ·	-		-								66.8
70 dBA         65 dBA         60 dBA         55 dBA           Ldn:         114         245         528         1,137	Vehicle Noise:	75.	2 7	3.4		70.4		65.6		74.2		74.6
Ldn: 114 245 528 1,137	Centerline Distan	ce to Noise Co	ntour (in feet)									
CNEL: 122 263 567 1,221												
			Ch	EL:	12	2	263	5	567		1,22	21

Friday, November 15, 2019

Friday, November 15, 2019

Friday, November 15, 2019

116

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PR	REDICT		-			
Scenario Road Name	o: 2040 e: Redhill Ave						Name: The lumber: 122		/		
Road Segmen						000 11	0111001. 122	02			
SITE S	SPECIFIC IN	IPUT DATA				I	IOISE MO	DEL IN	PUTS		
Highway Data				S	ite Cor	ditions	(Hard = 10	Soft =	15)		
Average Daily 1	Traffic (Adt):	37,530 vehicle	6				Aut	os: 18	5		
Peak Hour F	Percentage:	10%			Me	dium Tri	ucks (2 Axle	s): 15	5		
Peak Ho	our Volume:	3,753 vehicles	6		He	avy Tru	cks (3+ Axle	s): 15	5		
Veh	nicle Speed:	50 mph		v	ehicle	Mix					
Near/Far Lan	e Distance:	88 feet		-		icleType	e Da	y Eve	ning Ni	ight	Daily
Site Data						,	Autos: 77	5% 12	2.9% 9	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			М	edium T	rucks: 84	8% 4	1.9% 10	0.3%	1.84%
Barrier Type (0-Wa		0.0			I	leavy T	rucks: 86	5% 2	2.7% 10	0.8%	0.74%
Centerline Dis		60.0 feet		N	oise So	ource E	levations (i	n feet)			
Centerline Dist. t	o Observer:	60.0 feet				Auto	s: 2.000	í			
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck	s: 4.000				
Observer Height (A	,	5.0 feet			Heav	y Truck	s: 8.006	Grad	le Adjusti	ment:	0.0
	d Elevation:	0.0 feet			_						
	d Elevation:	0.0 feet		L	ane Eq		t Distance	,			
F	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree				m Truck					
	Right View:	90.0 degree	es		Heat	ry Truck	s: 40.903				
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista		Finite	Road	Fresnel		er Atten	Bern	n Atten
Autos:	70.20	3.34		1.20		-1.20	-4.		0.000		0.000
Medium Trucks:	81.00	-13.90		1.22		-1.20	-5.		0.000		0.000
Heavy Trucks:	85.38			1.20		-1.20	-5.	34	0.000		0.000
Unmitigated Noise											
	Leq Peak Hou			eq Eve		Leq	Night	Ldn	70.4	CN	
Autos:	73		71.6 65.6		69.9 59.2		63.8 57.7		72.4 66.2		73.1
Medium Trucks:			00.0 66.1				58.3		66.7		
Heavy Trucks: Vehicle Noise:	67	-	56.1 73.5		57.1 70.4		58.3 65.7		74.2		66.8 74.7
					70.4		05.7		74.2		74.1
Centerline Distanc	e lo noise C	oniour (in feet	,	70 dl	RA	65	dBA	60 dB	A	55 (	IRA
			I dn:	114			47	531		1.1	
			VEL:	123	-	-	-, 65	571		1.2	
		0.		120	·	2		571		1,2	

	FHW/	A-RD-77-108	HIGH	IWAY NO	DISE PF	REDICT	ION MC	DEL			
Scenario: 2040						Project	Name:	The B	owery		
Road Name: Redhill	Ave.					Job N	lumber:	12282			
Road Segment: n/o Bar	ranca	Pkwy.									
SITE SPECIFIC	C INP	UT DATA							L INPUT	s	
Highway Data				S	ite Con	ditions	(Hard =	= 10, Se	oft = 15)		
Average Daily Traffic (Ad	t): 40	,690 vehicles	s					Autos:	15		
Peak Hour Percentag	e:	10%			Me	dium Tr	ucks (2	Axles):	15		
Peak Hour Volum	e: 4	,069 vehicles	s		He	avy Tru	cks (3+	Axles):	15		
Vehicle Spee	d:	50 mph		V	ehicle l	Mix					
Near/Far Lane Distanc	e:	106 feet				icleType	-	Day	Evening	Night	Daily
Site Data		-			10/1		Autos:	77.5%	•	9.6%	
		0.0.6			Me	edium T		84.8%		10.3%	
Barrier Heigh Barrier Type (0-Wall, 1-Bern		0.0 feet					rucks:			10.8%	
Centerline Dist. to Barrie		70.0 feet									
Centerline Dist. to Observe		70.0 feet		N	oise So	ource E	levatio	ıs (in f	eet)		
Barrier Distance to Observe		0.0 feet				Auto	is: 2	.000			
Observer Height (Above Pac		5.0 feet			Mediur	n Truck	:s: 4	.000			
Pad Elevatio	· · · · ·	0.0 feet			Heav	y Truck	:s: 8	.006	Grade Adj	ustment.	0.0
Road Elevatio		0.0 feet		L	ane Ea	uivalen	t Distar	nce (in	feet)		
Road Grad		0.0%		-		Auto		.826	,		
l eft Vie		-90.0 degree			Mediu	n Truck		738			
Right Vie		90.0 degree			Heav	y Truck		.826			
FHWA Noise Model Calcula	tions										
VehicleType REMEL		Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos: 70	).20	3.69	-	0.46		-1.20		-4.86	0.0	000	0.00
Medium Trucks: 81	.00	-13.55		0.48		-1.20		-5.00	0.0	000	0.00
Heavy Trucks: 85	5.38	-17.51		0.46		-1.20		-5.28	0.0	000	0.00
Unmitigated Noise Levels (											
VehicleType Leq Peak				Leq Eve	·	Leq	Night		Ldn		NEL
Autos:	73.2		71.3		69.5		63.		72.1		72.
Medium Trucks:	66.7		65.2		58.9		57.		65.8		66.
Heavy Trucks:	67.1		65.7		56.7		57.	-	66.3		66.
Vehicle Noise:	74.9		73.1		70.1		65.	3	73.8	3	74
Centerline Distance to Nois	e Con	tour (in feet,	)	70.0			10.4	<b>.</b>			10.4
				70 di			dBA	0	60 dBA		dBA
			Ldn: VFI :	120 135			:71 :91		584 627		258 351

	FHW/	A-RD-77-108	HIGHW	AY NC	DISE PF	REDICTIO	ON MC	DEL			
Scenario: 20	40					Project I	Vame:	The Bo	wery		
Road Name: Re						Job Nu	mber:	12282			
Road Segment: s/c	Barranca	Pkwy.									
SITE SPEC	IFIC INP	UT DATA								S	
Highway Data				S	ite Con	ditions (	Hard =		,		
Average Daily Traffic	(Adt): 41	,110 vehicles	5					Autos:	15		
Peak Hour Perce		10%				dium Tru			15		
Peak Hour Vo		,111 vehicles	5		He	avy Trucl	ks (3+	Axles):	15		
Vehicle S		50 mph		V	ehicle l	Mix					
Near/Far Lane Dis	tance:	106 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	97.429
Barrier H	leiaht:	0.0 feet			Me	edium Tru	icks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-		0.0			ŀ	leavy Tru	icks:	86.5%	2.7%	10.8%	0.749
Centerline Dist. to E		70.0 feet		N	oise Sc	ource Ele	vatior	ns (in fe	et)		
Centerline Dist. to Obs		70.0 feet				Autos	: 2	.000	,		
Barrier Distance to Obs		0.0 feet			Mediur	n Trucks	. 4	.000			
Observer Height (Above	Pad):	5.0 feet				v Trucks		.006	Grade Ad	ustment:	0.0
Pad Ele		0.0 feet									
Road Ele		0.0 feet		La	ane Eq	uivalent			eet)		
	Grade:	0.0%				Autos		.826			
	t View:	-90.0 degree				n Trucks		.738			
Righ	t View:	90.0 degree	s		Heav	y Trucks	: 45	.826			
FHWA Noise Model Cal	culations										
, , .		Traffic Flow	Dista		Finite		Fres		Barrier Att		m Atten
Autos:	70.20	3.73		0.46		-1.20		-4.86		000	0.00
Medium Trucks:	81.00	-13.51		0.48		-1.20		-5.00		000	0.00
Heavy Trucks:	85.38	-17.46		0.46		-1.20		-5.28	0.0	000	0.00
Unmitigated Noise Leve			-					_			
	Peak Hour			.eq Eve	~	Leq N	· ·		Ldn		VEL
Autos:	73.2		71.3		69.5		63.	-	72.1		72.
Medium Trucks:	66.8		65.3		58.9		57.	-	65.8		66.
Heavy Trucks:	67.2		65.8		56.7		58.	-	66.3		66.
Vehicle Noise:	74.9		73.1		70.1		65.	3	73.9	)	74.
Centerline Distance to I	Noise Cor	tour (in feet)		70.10	_						
				70 dE	3A	65 a	BA	6	0 dBA	55	dBA
				4.67							
			Ldn: IFI :	127 136		27 29	-		588 632		266 361

	FHW	A-RD-77-108	HIGHW	AY N	OISE PR	EDICTI	ON MOI	DEL			
	io: 2040						Name:				
	e: Redhill Ave. nt: n/o MacArth					JOD IN	umber:	12282			
	SPECIFIC IN	PUT DATA				N	IOISE N	IODE		s	
Highway Data				5	Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt): 5	8,490 vehicles	5					Autos:	15		
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 A	xles):	15		
Peak H	lour Volume:	5,849 vehicles	6		Hea	avy Truc	:ks (3+ A	xles):	15		
Ve	hicle Speed:	50 mph			/ehicle l	Mix					
Near/Far La	ne Distance:	88 feet		-		cleType		Day	Evening	Night	Daily
Site Data					VCIII			77.5%	v		97.42%
					Me	, dium Tr		84.8%		10.3%	
	rrier Height:	0.0 feet				leavy Tr		86.5%		10.8%	
Barrier Type (0-W		0.0			,	icavy ii	uona.	00.07	2.170	10.070	0.7470
Centerline Di		60.0 feet		٨	Voise So	ource El	evation	s (in f	eet)		
Centerline Dist.		60.0 feet				Autos	s: 2.0	000			
Barrier Distance		0.0 feet			Mediur	n Trucks	s: 4.0	000			
Observer Height (	ad Elevation:	5.0 feet 0.0 feet			Heav	y Trucks	s: 8.0	006	Grade Adj	iustment	: 0.0
	ad Elevation: ad Elevation:	0.0 feet		,	ane Eq	uivalont	Dictory	o (in	foot)		
	ad Elevation: Road Grade:	0.0 feet		-	ane Ly	Auto			ieel)		
	Left View:				Madium	n Trucks					
	Right View:	-90.0 degree				y Trucks					
	Right view.	90.0 degree	:5		neav	y mucks	5. 40.	503			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresn		Barrier Att		m Atten
Autos:	70.20	5.26		1.20		-1.20		-4.85	0.0		0.000
Medium Trucks:	81.00	-11.98		1.22		-1.20		-5.01	0.0		0.000
Heavy Trucks:	85.38	-15.93		1.20		-1.20		-5.34	0.0	000	0.000
Unmitigated Nois			-								
VehicleType	Leq Peak Hou			.eq Ev	ening	Leq	Night		Ldn		NEL
Autos:	75.		73.6		71.8		65.8		74.4		75.0
Medium Trucks:	69.		67.5		61.2		59.6		68.1		68.3
Heavy Trucks:	69.	-	68.0		59.0		60.2		68.6		68.7
Vehicle Noise:	77.	2	75.4		72.4		67.6		76.1	1	76.6
Centerline Distan	ce to Noise Co	ntour (in feet	)					-			
				70 d			dBA	0	60 dBA		dBA
			Ldn:	15		33			714		539
		CI	VEL:	16	5	35	56		767	1,	653

Friday, November 15, 2019

Friday, November 15, 2019

Friday, November 15, 2019

117

	FHV	VA-RD-77-108	HIGH	WAY N	OISE PF	REDICT	ION MOD	ΞL			
Scenario Road Name Road Segment	Redhill Ave						Name: Ti lumber: 12		ery		
SITE S	PECIFIC IN	IPUT DATA					IOISE M				
Highway Data				S	Site Con	ditions	(Hard = 1	0, Soft	= 15)		
Average Daily Ti Peak Hour P Peak Ho	. ,	24,290 vehicle: 10% 2,429 vehicle:					Aı ucks (2 Ax cks (3+ Ax		15 15 15		
Vehi	cle Speed:	50 mph			/ehicle	Mise					
Near/Far Lane	Distance:	36 feet		,		viix icleType	<u>ь</u> Г	av E	vening Ni	ght	Daily
Site Data					Ven			ay 12 7.5%	•	9.6%	97.42%
Barr	ier Heiaht:	0.0 feet			M	edium T	rucks: 8	4.8%	4.9% 10	0.3%	1.84%
Barrier Type (0-Wai		0.0			I	Heavy T	rucks: 8	6.5%	2.7% 10	0.8%	0.74%
Centerline Dist.		40.0 feet		٨	loise So	ource E	levations	(in feet	t)		
Centerline Dist. to	Observer:	40.0 feet				Auto			/		
Barrier Distance to	Observer:	0.0 feet			Mediu	m Truck	s: 4.00	0			
Observer Height (A	,	5.0 feet				v Truck			rade Adjusti	ment:	0.0
	Elevation:	0.0 feet		_							
	Elevation:	0.0 feet		L	.ane Eq		t Distance		et)		
Re	oad Grade:	0.0%				Auto	00.0				
,	Left View: Right View:	-90.0 degree 90.0 degree				m Truck vy Truck					
FHWA Noise Model	•	•									
VehicleType	REMEL	S Traffic Flow	Dis	tance	Finite	Road	Fresne	I Ba	arrier Atten	Rerr	n Atten
Autos:	70.20	1.45	013	2.06		-1.20		1.83	0.000	Dem	0.000
Medium Trucks:	81.00	-15.79		2.08	3	-1.20	-{	5.08	0.000		0.000
Heavy Trucks:	85.38	-19.75		2.06	6	-1.20	-{	5.56	0.000		0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	er atteni	uation)						
VehicleType L	eq Peak Hou	r Leq Day	1	Leq Ev	rening	Leq	Night	L	dn	CN	IEL
Autos:	72		70.6		68.8		62.8		71.4		72.0
Medium Trucks:	66		64.6		58.2		56.7		65.1		65.4
Heavy Trucks:	66	-	65.1		56.0		57.3		65.6		65.8
Vehicle Noise:	74	.2	72.5		69.4		64.6		73.2	_	73.6
Centerline Distance	e to Noise Co	ontour (in feet	)				I				
				70 d			dBA		dBA	55 0	
			Ldn:	65			40		02	65	
		CI	NEL:	70	)	1	51	3	25	70	00

	FHV	/A-RD-77-108	HIGH	WAY N	OISE PR	REDICTI	ON MODEL			
	io: 2040						Name: The			
	ne: Valencia Av					Job N	umber: 1228	32		
Road Segme	nt: w/o Redhill	Ave.								
	SPECIFIC IN	PUT DATA						EL INPUT	s	
Highway Data				5	Site Con	ditions	(Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 1	5,320 vehicle	s				Auto	s: 15		
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 Axles	<i>:):</i> 15		
Peak H	lour Volume:	1,532 vehicle	s		Hea	avy Truc	ks (3+ Axles	;): 15		
Ve	hicle Speed:	45 mph		1	Vehicle I	Mix				
Near/Far La	ne Distance:	36 feet		F		icleType	Day	Evening	Night	Daily
Site Data							Autos: 77.5			97.429
Ba	rrier Height:	0.0 feet			Me	edium Ti	ucks: 84.8	4.9%	10.3%	1.849
Barrier Type (0-W		0.0			F	leavy Ti	ucks: 86.5	% 2.7%	10.8%	0.749
Centerline Di	. ,	40.0 feet			Vaiaa Ca	uree El	evations (in	fa a 4)		
Centerline Dist.	to Observer:	40.0 feet		'	voise Sc	Auto:		teet)		
Barrier Distance	to Observer:	0.0 feet			1 4 m - 15 m	n Truck				
Observer Height (	Above Pad):	5.0 feet						Out de Ad		0.0
	ad Elevation:	0.0 feet			Heav	y Truck	s: 8.006	Grade Adj	ustment	0.0
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalen	Distance (i	n feet)		
	Road Grade:	0.0%				Auto	s: 35.847			
	Left View:	-90.0 deare	es		Mediur	n Truck	s: 35.735			
	Right View:	90.0 degree	es		Heav	y Truck	s: 35.847			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	68.46	-0.10		2.06	3	-1.20	-4.8	3 0.0	000	0.00
Medium Trucks:	79.45	-17.34		2.08	3	-1.20	-5.0	8 0.0	000	0.00
Heavy Trucks:	84.25	-21.29		2.06	6	-1.20	-5.5	6 0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	r atten	uation)					
VehicleType	Leq Peak Hou	r Leq Day	'	Leq Ev	rening	Leq	Night	Ldn	CI	VEL
Autos:			67.3		65.6		59.5	68.1		68
Medium Trucks:	63		61.5		55.1		53.6	62.0	-	62
Heavy Trucks:	63	-	62.4		53.4		54.6	63.0	-	63
			69.3		66.2		61.5	70.0	)	70
Vehicle Noise:		ontour (in feet	)							
Vehicle Noise: Centerline Distan	ce to Noise Co				ND A	65	dBA	60 dBA	55	dBA
	ce to Noise Co		L	70 c						
	ce to Noise Co		Ldn: VFI :	70 c 4( 4)	D	8	7	187 200	4	02 31

		Y NOISE PREDICTION MODEL	
Scenario: 2040		Project Name: The Bowery	
Road Name: Valencia Ave.		Job Number: 12282	
Road Segment: e/o Redhill Ave.			
SITE SPECIFIC INPUT DA	TA	NOISE MODEL INPUTS	
Highway Data		Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Adt): 21,600 ve	hicles	Autos: 15	
Peak Hour Percentage: 10%		Medium Trucks (2 Axles): 15	
Peak Hour Volume: 2,160 ve	hicles	Heavy Trucks (3+ Axles): 15	
Vehicle Speed: 45 m	ph	Vehicle Mix	
Near/Far Lane Distance: 36 fe	et		Daily
Site Data			7.429
Barrier Height: 0.0 f	t	Medium Trucks: 84.8% 4.9% 10.3%	1.849
Barrier Type (0-Wall, 1-Berm): 0.0	eel	Heavy Trucks: 86.5% 2.7% 10.8% (	0.749
Centerline Dist. to Barrier: 40.0 f	eet		
Centerline Dist. to Observer: 40.0 f		Noise Source Elevations (in feet)	
Barrier Distance to Observer: 0.0 f		Autos: 2.000	
Observer Height (Above Pad): 5.0 f		Medium Trucks: 4.000	
Pad Elevation: 0.0 f	eet	Heavy Trucks: 8.006 Grade Adjustment: 0.	0
Road Elevation: 0.0 f	eet	Lane Equivalent Distance (in feet)	
Road Grade: 0.0%		Autos: 35.847	
Left View: -90.0 d	learees	Medium Trucks: 35.735	
Right View: 90.0 c	legrees	Heavy Trucks: 35.847	
FHWA Noise Model Calculations			
VehicleType REMEL Traffic F	flow Distance	e Finite Road Fresnel Barrier Atten Berm	Atten
Autos: 68.46		2.06 -1.20 -4.83 0.000	0.00
		2.08 -1.20 -5.08 0.000	0.00
Heavy Trucks: 84.25 -1	9.80 2	2.06 -1.20 -5.56 0.000	0.00
Unmitigated Noise Levels (without Topo	and barrier att		
, ,		Evening Leq Night Ldn CNEI	
	68.8	67.1 61.0 69.6	70.
Autos: 70.7	63.0	56.6 55.1 63.5	63.
Medium Trucks: 64.5			64.
Medium Trucks: 64.5 Heavy Trucks: 65.3	63.9	54.9 56.1 64.5	
Medium Trucks: 64.5		54.9         56.1         64.5           67.7         63.0         71.5	72.
Medium Trucks: 64.5 Heavy Trucks: 65.3	63.9 70.8	67.7 63.0 71.5	
Medium Trucks:     64.5       Heavy Trucks:     65.3       Vehicle Noise:     72.6	63.9 70.8 a feet)	67.7 63.0 71.5 70 dBA 65 dBA 60 dBA 55 dB	
Medium Trucks:     64.5       Heavy Trucks:     65.3       Vehicle Noise:     72.6	63.9 70.8	67.7 63.0 71.5	

FHWA-RD-77-108 HIGHV	AY NOISE PREDICTION MODEL
Scenario: 2040 Road Name: Warner Ave. Road Segment: wlo Grand Ave.	Project Name: The Bowery Job Number: 12282
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 27,580 vehicles	Autos: 15
Peak Hour Percentage: 10%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 2,758 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 45 mph	Vehicle Mix
Near/Far Lane Distance: 36 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 12.9% 9.6% 97.42
	Medium Trucks: 84.8% 4.9% 10.3% 1.84
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74
Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet	Noise Source Elevations (in feet)
Barrier Distance to Observer: 0.0 feet	Autos: 2.000
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 4.000
Pad Elevation: 0.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 35.847
Left View: -90.0 degrees	Medium Trucks: 35.735
Right View: 90.0 degrees	Heavy Trucks: 35.847
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Dist	nce Finite Road Fresnel Barrier Atten Berm Atten
Autos: 68.46 2.45	2.06 -1.20 -4.83 0.000 0.0
Medium Trucks: 79.45 -14.78	2.08 -1.20 -5.08 0.000 0.0
Heavy Trucks: 84.25 -18.74	2.06 -1.20 -5.56 0.000 0.0
Unmitigated Noise Levels (without Topo and barrier	
	eq Evening Leq Night Ldn CNEL
Autos: 71.8 69.9	68.1 62.1 70.7 71
Medium Trucks: 65.6 64.0	57.7 56.1 64.6 64
Heavy Trucks: 66.4 65.0	55.9 57.2 65.5 65
Vehicle Noise: 73.6 71.9	68.7 64.0 72.6 73
Centerline Distance to Noise Contour (in feet)	
L	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	60 128 276 595
CNEL:	64 138 296 638

Friday, November 15, 2019

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGH	IWAY NO	DISE PR	REDICTIO	N MOD	EL			
Scenario Road Name Road Segmen	e: Warner Av					Project N Job Nur			wery		
SITE S	SPECIFIC IN	IPUT DATA							INPUTS	5	
Highway Data				S	ite Con	ditions (H	lard = 1	0, Soi	ft = 15)		
Average Daily 1 Peak Hour F Peak Ho	, ,	32,140 vehicle 10% 3,214 vehicle				dium Truc avy Truck	ks (2 Ax		15 15 15		
Veh	icle Speed:	45 mph			ehicle l						
Near/Far Lan	e Distance:	36 feet		V				Dav	E	Market	Delle
Site Data					veni	icleType		7.5%	Evening 12.9%	Night 9.6%	Daily 97.42%
						Au dium Tru		7.5% 4.8%	4.9%	9.6%	97.42%
	rier Height:	0.0 feet				leavy Tru		4.0 <i>%</i>	2.7%	10.3%	0.74%
Barrier Type (0-Wa	. ,	0.0			, r	leavy IIu	UKS. O	0.3%	2.170	10.0%	0.74%
Centerline Dis		40.0 feet		N	oise So	ource Elev	vations	(in fe	et)		
Centerline Dist. to		40.0 feet				Autos:	2.00	00			
Barrier Distance to		0.0 feet			Mediur	m Trucks:	4.00	00			
Observer Height (A	,	5.0 feet			Heav	v Trucks:	8.00	06 (	Grade Adj	ustment	0.0
	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		L	ane Eq	uivalent L			eet)		
F	Road Grade:	0.0%				Autos:	35.84				
	Left View: Right View:	-90.0 degre 90.0 degre				m Trucks: vy Trucks:	35.73 35.84				
	0	ů	es		near	y mucho.	00.0				
FHWA Noise Mode		•			<b>F</b> 1 1		-				
VehicleType Autos:	REMEL 68.46	Traffic Flow 3.12		stance 2.06	Finite	-1.20	Fresne		Barrier Atte		m Atten 0.000
Medium Trucks:	08.40 79.45	-14.12		2.06		-1.20		4.83 5.08	0.0		0.000
Heavy Trucks:	79.45	-14.12		2.08		-1.20		5.56	0.0		0.000
Unmitigated Noise					ution)	-1.20		5.00	0.0	00	0.000
•	Leg Peak Hou			Leg Eve		Leg N	iaht		Ldn	0	VEL
Autos:	2007 Cak 1100 72		70.5	LOYLIN	68.8	Login	62.7		71.3	-	72.0
Medium Trucks:	66		64.7		58.3		56.8		65.3		65.5
Heavy Trucks:	67		65.6		56.6		57.8		66.2		66.3
Vehicle Noise:	74		72.5		69.4		64.7		73.3		73.7
Centerline Distanc	e to Noise Co	ontour (in feet	!)								
		-		70 dl	BA	65 dE	BA	60	) dBA	55	dBA
			Ldn:	66		142	2		306	. 6	59
		С	NEL:	71		152			328	7	07

		/A-RD-77-108	HIGH	TVAT N							
Scenario							Name: T		very		
	e: Warner Ave					Job N	umber: 1	2282			
Road Segmen	t: w/o Redhill	Ave.									
	SPECIFIC IN	PUT DATA					IOISE M			5	
Highway Data				s	lite Con	ditions	(Hard = 1	0, Sof	t = 15)		
Average Daily 1	Fraffic (Adt): 3	86,830 vehicles	s				A	utos:	15		
Peak Hour I	Percentage:	10%			Med	dium Tr	ucks (2 Ax	des):	15		
Peak Ho	our Volume:	3,683 vehicles	s		Hea	avy Tru	cks (3+ Ax	des):	15		
Vet	icle Speed:	45 mph		V	ehicle l	Niv					
Near/Far Lan	e Distance:	88 feet		-		cleType		Day I	Evening	Night	Daily
Site Data					veni			7.5%	12.9%	9.6%	
					Me	dium T		4.8%	4.9%	10.3%	1.849
	rier Height:	0.0 feet						6.5%	2.7%	10.8%	
Barrier Type (0-Wa	. ,	0.0								10.070	0.74
Centerline Dis		60.0 feet		٨	loise So	urce E	levations	(in fee	et)		
Centerline Dist. t		60.0 feet				Auto	s: 2.00	00			
Barrier Distance t		0.0 feet			Mediur	n Truck	s: 4.00	00			
Observer Height (A	,	5.0 feet			Heav	y Truck	s: 8.00	06 G	Grade Adji	ustment:	0.0
	d Elevation:	0.0 feet			ono Eau	dualan	t Distance	lin fo	of)		
	d Elevation:	0.0 feet		-	апе сц	Auto		· ·	el)		
F	Road Grade:	0.0%			Mediur						
	Left View:	-90.0 degree									
	Right View:	90.0 degree	es		Heav	y Truck	s: 40.9	13			
FHWA Noise Mode	Calculation	s	-								
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresne	l B	arrier Atte	en Ber	m Atter
Autos:	68.46	3.71		1.20		-1.20		4.85	0.0	00	0.00
Medium Trucks:	79.45	-13.53		1.22		-1.20		5.01	0.0	00	0.00
Heavy Trucks:	84.25	-17.48		1.20		-1.20	-	5.34	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and	barri	er attenu	uation)						
	Leq Peak Hou	1 1		Leq Ev	~	Leq	Night	L	.dn		VEL
Autos:	72	.2	70.3		68.5		62.5		71.1		71
Medium Trucks:	65	.9	64.4		58.1		56.5		65.0		65
Heavy Trucks:	66.	.8	65.4		56.3		57.6		65.9		66
Vehicle Noise:	74.	.0	72.3		69.1		64.4		73.0		73
Centerline Distanc	e to Noise Co	ontour (in feet	)								
				70 d	BA	65	dBA	60	dBA	55	dBA
			Ldn:	95	5	2	04	4	40	9	49
			NFI :	10					72		

		A-RD-77-108 H	IGHW	AT N	UISE PR						
Scenari						Project I			wery		
	e: Warner Ave					Job Nu	mber: 12	2282			
Road Segmen	t: e/o Redhill /	Ave.									
	SPECIFIC IN	PUT DATA							INPUTS		
Highway Data				S	Site Con	ditions (	Hard = 1	0, Soi	ft = 15)		
Average Daily	Traffic (Adt): 3	1,170 vehicles						utos:	15		
Peak Hour I	Percentage:	10%			Me	dium Truo	:ks (2 Ax	les):	15		
Peak He	our Volume:	3,117 vehicles			He	avy Truck	:s (3+ Ax	les):	15		
Vel	nicle Speed:	50 mph		1	/ehicle	Mix					
Near/Far Lar	e Distance:	88 feet		F		icleType	D	av	Evening	Night	Dailv
Site Data							utos: 7	7.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			Me	edium Tru	icks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			ŀ	leavy Tru	icks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		60.0 feet			laina Cr	ource Ele	votiono	lin fa	o.4)		
Centerline Dist. t	o Observer:	60.0 feet		,	voise sc				et)		
Barrier Distance t	o Observer:	0.0 feet				Autos.					
Observer Height (/	Above Pad):	5.0 feet				n Trucks. v Trucks.			Grade Adju	almont	0.0
Pa	d Elevation:	0.0 feet			neav	y mucks.	8.00	0, 0	Siaue Auju	sunem.	0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalent	Distance	e (in fe	eet)		
F	Road Grade:	0.0%				Autos.	40.90	)2			
	Left View:	-90.0 degrees			Mediur	n Trucks.	40.80	)4			
	Right View:	90.0 degrees			Heav	y Trucks.	40.90	03			
FHWA Noise Mode	al Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite		Fresne	I E	Barrier Atte	n Beri	m Atten
Autos:	70.20	2.53		1.20		-1.20		4.85	0.00		0.000
Medium Trucks:	81.00	-14.71		1.22		-1.20		5.01	0.00		0.00
Heavy Trucks:	85.38	-18.67		1.20	)	-1.20	-{	5.34	0.00	00	0.00
Unmitigated Noise											
	Leq Peak Hou			.eq Ev		Leq N			Ldn	CI	IEL
Autos:	72.		9.8		69.1		63.0		71.6		72.2
Medium Trucks:	66.		1.8		58.4		56.9		65.4		65.6
Heavy Trucks:	66.		5.3		56.3		57.5		65.9		66.
Vehicle Noise:	74.	4 7	2.7		69.6		64.9		73.4		73.
Centerline Distance	e to Noise Co	ntour (in feet)									
				70 d		65 d			) dBA		dBA
											)11
		L CN	dn:	10 10		21 23	-		469 504		086

					IOISE PR			EL			
	io: 2040					Project N			owery		
	e: Dyer Rd.					Job Nu	nber: 1	2282			
Road Segmer	nt: w/o Redhill	Ave.									
SITE	SPECIFIC IN	PUT DATA							L INPUTS	s	
Highway Data				3	Site Con	ditions (F	lard = 1	10, So	oft = 15)		
Average Daily	Traffic (Adt): 3	4,920 vehicle	s				A	utos:	15		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 A)	des):	15		
Peak H	lour Volume:	3,492 vehicle	s		Hea	avy Truck	s (3+ A)	des):	15		
Ve	hicle Speed:	40 mph			Vehicle I	<i>lix</i>					
Near/Far Lai	ne Distance:	88 feet		F		cleTvpe	1	Dav	Evening	Night	Daily
Site Data						AL	tos: 7	7.5%	v .	· ·	97.42%
Pa	rrier Height:	0.0 feet			Me	dium Tru		4.8%		10.3%	1.84%
Barrier Type (0-W		0.0			H	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dis		60.0 feet									
Centerline Dist.		60.0 feet		4	Noise So	urce Ele			eet)		
Barrier Distance	to Observer:	0.0 feet				Autos:	2.0				
Observer Height (		5.0 feet				n Trucks:			~		
0,1	ad Flevation:	0.0 feet			Heav	y Trucks:	8.0	06	Grade Adj	ustment	0.0
Roa	ad Elevation:	0.0 feet		1	Lane Equ	livalent L	Distanc	e (in :	feet)		
1	Road Grade:	0.0%			-	Autos:	40.9	02			
	Left View:	-90.0 degree	es		Mediur	n Trucks:	40.8	04			
	Right View:	90.0 degree	es		Heav	y Trucks:	40.9	03			
FHWA Noise Mod	-10-1-1-1-1-			_							
VehicleType	REMEL	Traffic Flow	Distar	се	Finite	Road	Fresne	:/	Barrier Atte	en Ber	m Atten
			Distar	nce 1.20		Road -1.20		el 4.85	Barrier Atte 0.0		
VehicleType	REMEL	Traffic Flow	Distar		0		-			000	0.00
VehicleType Autos:	REMEL 66.51	Traffic Flow 3.99	Distar	1.20	0	-1.20	-	4.85	0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	REMEL 66.51 77.72 82.99 e Levels (withe	<i>Traffic Flow</i> 3.99 -13.25 -17.20 <i>out Topo and</i>	barrier a	1.20 1.22 1.20	0 2 0 uation)	-1.20 -1.20 -1.20	-	4.85 5.01	0.0 0.0 0.0	000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	REMEL 66.51 77.72 82.99 e Levels (without Leg Peak Hout	Traffic Flow           3.99           -13.25           -17.20           Dut Topo and           r         Leq Day	barrier a	1.20 1.22 1.20	0 2 0 <b>uation)</b> vening	-1.20 -1.20	- - ight	4.85 5.01	0.0 0.0 0.0	000 000 000 C	0.000 0.000 0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	REMEL 66.51 77.72 82.99 e Levels (without Leq Peak Hout 70.	Traffic Flow           3.99           -13.25           -17.20           Dut Topo and           r         Leq Day           5	barrier a / Le	1.20 1.22 1.20	0 2 0 <i>wening</i> 66.8	-1.20 -1.20 -1.20	ight 60.8	4.85 5.01	0.0 0.0 0.0 <i>Ldn</i> 69.4	000 000 000 C	0.000 0.000 0.000 VEL 70.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks:	REMEL 66.51 77.72 82.99 e Levels (without Leg Peak Hout 70. 64.	Traffic Flow         3.99         -13.25         -17.20           out Topo and         Control of the provided of the pro	<i>barrier a</i> / Le 68.6 63.0	1.20 1.22 1.20	0 2 0 vening 66.8 56.6	-1.20 -1.20 -1.20	ight 60.8 55.1	4.85 5.01	0.0 0.0 0.0 <i>Ldn</i> 69.4 63.5	000 000 000 C	0.000 0.000 0.000 <u>VEL</u> 70.0 63.8
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	REMEL 66.51 77.72 82.99 e Levels (without Leq Peak Hout 70.	Traffic Flow         3.99         -13.25         -17.20           out Topo and         Control of the provided of the pro	barrier a / Le	1.20 1.22 1.20	0 2 0 <i>wening</i> 66.8	-1.20 -1.20 -1.20	ight 60.8	4.85 5.01	0.0 0.0 0.0 <i>Ldn</i> 69.4	000 000 000 C	0.000 0.000 0.000 <u>VEL</u> 70.0 63.8
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL         66.51           77.72         82.99           e Levels (with         Leq Peak Hou           70.         64.           65.         72.	Traffic Flow         3.99         -13.25         -17.20           Dut Topo and         r         Leq Day         5	barrier a 68.6 63.0 64.4 70.8	1.20 1.22 1.20	0 2 0 vening 66.8 56.6	-1.20 -1.20 -1.20	ight 60.8 55.1	4.85 5.01	0.0 0.0 0.0 <i>Ldn</i> 69.4 63.5	000 000 000 C	0.000 0.000 0.000 VEL 70.0 63.8 65.1
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL         66.51           77.72         82.99           e Levels (with         Leq Peak Hou           70.         64.           65.         72.	Traffic Flow         3.99         -13.25         -17.20           Dut Topo and         r         Leq Day         5	barrier a 68.6 63.0 64.4 70.8	1.20 1.22 1.20 atten eq E	0 2 0 <i>vening</i> 66.8 56.6 55.3 67.5	-1.20 -1.20 -1.20 <i>Leg N</i>	ight 60.8 55.1 56.6 63.0	4.85 5.01 5.34	0.0 0.0 0.0 69.4 63.5 64.9 71.5	000 000 000 Ci 4 5 9	0.000 0.000 0.000 VEL 70.0 63.8 65.7 71.9
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL         66.51           77.72         82.99           e Levels (with         Leq Peak Hou           70.         64.           65.         72.	Traffic Flow           3.99           -13.25           -17.20           Dut Topo and           r           Leq Day           5           8           5           ntour (in feet)	barrier a / Le 68.6 63.0 64.4 70.8	1.20 1.22 1.20 atten eq Ev	0 2 0 <i>wation)</i> <i>vening</i> 66.8 56.6 55.3 67.5	-1.20 -1.20 -1.20 <i>Leq N</i> 65 dt	ight 60.8 55.1 56.6 63.0 BA	4.85 5.01 5.34	0.0 0.0 0.0 69.4 63.5 64.9 71.5	000 000 000 C, F 5 5 5 5 5 5 5 5	0.000 0.000 NEL 70.0 63.8 65.7 71.9
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL         66.51           77.72         82.99           e Levels (with         Leq Peak Hou           70.         64.           65.         72.	Traffic Flow           3.99           -13.25           -17.20           Dut Topo and           r           Leq Day           5           5           ntour (in feet)	barrier a 68.6 63.0 64.4 70.8	1.20 1.22 1.20 atten eq E	0 2 0 <i>vening</i> 66.8 56.6 55.3 67.5 <i>dBA</i> 5	-1.20 -1.20 -1.20 <i>Leg N</i>	- 	4.85 5.01 5.34	0.0 0.0 0.0 69.4 63.5 64.9 71.5	000 000 000 000 000 000 000 000 000 00	0.000 0.000 0.000 VEL 70.0 63.8 65.1 71.9

Friday, November 15, 2019

Friday, November 15, 2019

Friday, November 15, 2019

119

	FHW	/A-RD-77-108	HIGHWA	Y NOISE P	REDICT	ION MODEL					
Scenario Road Name Road Segment	: Barranca Pl			Project Name: The Bowery Job Number: 12282							
SITE S	PECIFIC IN	PUT DATA			I	NOISE MOD	EL INPUTS				
Highway Data				Site Col	nditions	: (Hard = 10, S	oft = 15)				
Average Daily T Peak Hour P Peak Ho	ercentage:	9,340 vehicles 10% 3.934 vehicles				Autos ucks (2 Axles) cks (3+ Axles)	: 15				
	icle Speed:	50 mph									
Near/Far Lane		106 feet		Vehicle							
				Veł	nicleTyp	,		Vight Daily			
Site Data					ledium 1			9.6% 97.42% 10.3% 1.84%			
	ier Height:	0.0 feet						10.3% 1.84% 10.8% 0.74%			
Barrier Type (0-Wa		0.0			Heavy 7	TUCKS: 80.5	% Z.7%	10.8% 0.74%			
Centerline Dist.		70.0 feet		Noise S	ource E	levations (in	feet)				
Centerline Dist. to		70.0 feet			Auto	os: 2.000	-				
Barrier Distance to		0.0 feet		Mediu	m Truck	s: 4.000					
Observer Height (A	,	5.0 feet		Hea	vy Truck	s: 8.006	Grade Adjus	stment: 0.0			
	l Elevation:	0.0 feet			· · ·						
	Elevation:	0.0 feet		Lane Ec		nt Distance (in	feet)				
R	oad Grade:	0.0%			Auto	10.020					
	Left View: Right View:	-90.0 degree 90.0 degree			m Truck vy Truck	10.100					
FHWA Noise Model	Calculations	s		_							
VehicleType	REMEL	Traffic Flow	Distan	ce Finite	Road	Fresnel	Barrier Atter	Berm Atten			
Autos:	70.20	3.54		0.46	-1.20	-4.86	0.00	0.000			
Medium Trucks:	81.00	-13.70		0.48	-1.20	-5.00	0.00	D 0.000			
Heavy Trucks:	85.38	-17.65		0.46	-1.20	-5.28	0.00	0.000			
Unmitigated Noise	Levels (with	out Topo and I	barrier a	tenuation)							
VehicleType L	.eq Peak Hou	r Leq Day	Le	q Evening	Leq	Night	Ldn	CNEL			
Autos:	73.	.0	71.1	69.3		63.3	71.9	72.5			
Medium Trucks:	66.	.6 6	65.1	58.7		57.2	65.6	65.9			
Heavy Trucks:	67.	.0 6	65.6	56.5		57.8	66.1	66.3			
Vehicle Noise:	74.	.7	73.0	69.9		65.1	73.7	74.			
Centerline Distance	e to Noise Co	ontour (in feet)	1								
				70 dBA	65	dBA	60 dBA	55 dBA			
			Ldn:	123	2	265	571	1,230			
		Ch	IEL:	132	2	285	613	1,321			

	FHW	/A-RD-77-108	HIGH	IWAY NC	ISE PREDI		IODEL							
Scenario: 204 Road Name: Bar Road Segment: w/o	ranca Pl				Project Name: The Bowery Job Number: 12282									
SITE SPEC	IFIC IN	PUT DATA			NOISE MODEL INPUTS									
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic	(Adt): 4	1.820 vehicle	s				Autos:	15						
Peak Hour Percer	• •	10%			Medium	Trucks (	2 Axles):	15						
Peak Hour Vo	lume:	4.182 vehicle	s		Heavy 7	rucks (3	+ Axles):	15						
Vehicle S	peed:	50 mph												
Near/Far Lane Dist		106 feet		V	ehicle Mix		Davis	Guardian	h E andre d	Daily				
Site Data					VehicleType Day Evening Night									
					Ma dia m	Autos:			9.6%					
Barrier H		0.0 feet				Trucks: Trucks:			10.3% 10.8%					
Barrier Type (0-Wall, 1-E		0.0			Heav	Trucks:	80.5%	5 2.7%	10.8%	0.74%				
Centerline Dist. to B		70.0 feet		N	oise Source	Elevati	ons (in f	eet)						
Centerline Dist. to Obs		70.0 feet			A	itos:	2.000							
Barrier Distance to Obs		0.0 feet			Medium Tru	cks:	4.000							
Observer Height (Above		5.0 feet			Heavy Tru	cks:	8.006	Grade Ad	iustment.	0.0				
Pad Elev		0.0 feet		-	,									
Road Elev		0.0 feet		Li	ane Equival			feet)						
Road C		0.0%					5.826							
	View:	-90.0 degre			Medium Tru		5.738							
Right	View:	90.0 degre	es		Heavy Tru	cks: 4	5.826							
FHWA Noise Model Cald	ulations	6		1										
VehicleType REI	MEL	Traffic Flow	Dis	stance	Finite Road	I Fre	esnel	Barrier Att	en Ber	m Atten				
Autos:	70.20	3.81		0.46	-1.2	20	-4.86	0.0	000	0.00				
Medium Trucks:	81.00	-13.43		0.48	-1.2		-5.00	0.0	000	0.00				
Heavy Trucks:	85.38	-17.39		0.46	-1.2	20	-5.28	0.0	000	0.00				
Unmitigated Noise Leve														
, ,	eak Hou			Leq Eve	ů.	eq Night		Ldn		NEL				
Autos:	73.	-	71.4		69.6		3.6	72.3		72.				
Medium Trucks:	66.		65.3		59.0		7.4	65.9	-	66.				
Heavy Trucks:	67.	-	65.8		56.8	-	8.0	66.4		66.				
Vehicle Noise:	75.	-	73.2		70.2	6	5.4	73.	9	74.				
Centerline Distance to N	loise Co	ntour (in feet	)	_										
			L	70 dE		65 dBA	6	60 dBA		dBA				
			Ldn: NFL:	128 138		276 296		595 639		281				
										376				

FHWA-RD-77-108 F	IIGHWA	Y NOISE P	REDICTIO	ом мо	DEL						
Scenario: 2040 Road Name: MacArthur Blvd. Road Segment: w/o Redhill Ave.		Project Name: The Bowery Job Number: 12282									
SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS									
Highway Data		Site Col	nditions (	(Hard =	= 10, So	oft = 15)					
Average Daily Traffic (Adt): 38,740 vehicles					Autos:	15					
Peak Hour Percentage: 10%		Me	dium Tru	cks (2	Axles):	15					
Peak Hour Volume: 3,874 vehicles		He	avy Truc	ks (3+	Axles):	15					
Vehicle Speed: 50 mph		Vehicle	Mix								
Near/Far Lane Distance: 106 feet			nicleType	1	Dav	Evening	Night	Daily			
Site Data				utos:	77.5%	•	~	97.429			
Barrier Height: 0.0 feet		N	ledium Tr	ucks:	84.8%	4.9%	10.3%	1.849			
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Tr	ucks:	86.5%	2.7%	10.8%	0.749			
Centerline Dist. to Barrier: 70.0 feet		Noise S	ource Ele	evatio	ns (in fe	et)					
Centerline Dist. to Observer: 70.0 feet			Autos		.000	.00					
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks		.000						
Observer Height (Above Pad): 5.0 feet			vy Trucks			Grade Ad	iustment:	0.0			
Pad Elevation: 0.0 feet											
Road Elevation: 0.0 feet		Lane Ec	uivalent			eet)					
Road Grade: 0.0%			Autos		.826						
Left View: -90.0 degrees Right View: 90.0 degrees			m Trucks vy Trucks		.738						
FHWA Noise Model Calculations											
VehicleType REMEL Traffic Flow	Distanc	e Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten			
Autos: 70.20 3.47	-	0.46	-1.20		-4.86	0.0	000	0.00			
Medium Trucks: 81.00 -13.77		0.48	-1.20		-5.00	0.0	000	0.00			
Heavy Trucks: 85.38 -17.72		0.46	-1.20		-5.28	0.0	000	0.00			
Unmitigated Noise Levels (without Topo and b	arrier at	tenuation)									
VehicleType Leq Peak Hour Leq Day		Evening	Leq I			Ldn		VEL			
	1.0	69.3		63.	-	71.8	-	72.			
	5.0	58.6		57.		65.6	-	65.			
	5.5	56.5		57.		66.1		66.			
	2.9	69.8		65.	.1	73.6	3	74.			
Centerline Distance to Noise Contour (in feet)					_						
		70 dBA	65 0		6	0 dBA		dBA			
L CN	dn:	122 131	26 28	-		565 607		217 308			
						100		200			

FHWA-RD-77	-108 HIGHV	VAY NO	DISE PF	REDICTIO		EL					
Scenario: 2040 Road Name: MacArthur Blvd. Road Segment: e/o Redhill Ave.			Project Name: The Bowery Job Number: 12282								
SITE SPECIFIC INPUT DA	ТА							s			
Highway Data		S	ite Con	ditions (	Hard = '	10, So	ft = 15)				
Average Daily Traffic (Adt): 31,220 ve	nicles				A	lutos:	15				
Peak Hour Percentage: 10%				dium Truo			15				
Peak Hour Volume: 3,122 ve	nicles		He	avy Truck	(3+ A.	xles):	15				
Vehicle Speed: 50 mp		V	ehicle l	Mix							
Near/Far Lane Distance: 106 fee	et		Veh	icleType	1	Day	Evening	Night	Daily		
Site Data				A	utos: T	77.5%	12.9%	9.6%	97.429		
Barrier Height: 0.0 fe	et		M	edium Tru	icks: 8	34.8%	4.9%	10.3%	1.849		
Barrier Type (0-Wall, 1-Berm): 0.0			ŀ	leavy Tru	icks: 8	86.5%	2.7%	10.8%	0.749		
Centerline Dist. to Barrier: 70.0 fe		N	loise So	ource Ele	vations	(in fe	et)				
Centerline Dist. to Observer: 70.0 fe				Autos.	: 2.0	00					
Barrier Distance to Observer: 0.0 fe			Mediu	n Trucks.	4.0	00					
Observer Height (Above Pad): 5.0 fe			Heav	y Trucks.	8.0	06	Grade Ad	iustment.	0.0		
Pad Elevation: 0.0 fe Road Elevation: 0.0 fe		1	ono Fa	uivalent	Distanc	o (in f	0.041				
Road Elevation: 0.016 Road Grade: 0.0%	et	-	апе сч	Autos			eer)				
Left View: -90.0 d	aroos		Modiu	n Trucks.							
Right View: 90.0 d	5			y Trucks.							
FHWA Noise Model Calculations											
VehicleType REMEL Traffic Fi	ow Dista	ance	Finite	Road	Fresne	el I	Barrier Att	en Ber	m Atten		
	2.54	0.46		-1.20		4.86		000	0.00		
	4.70	0.48		-1.20		5.00		000	0.00		
Heavy Trucks: 85.38 -1	3.66	0.46		-1.20	-	5.28	0.0	000	0.00		
Unmitigated Noise Levels (without Topo											
		Leq Eve	•	Leq N	v		Ldn		VEL		
Autos: 72.0 Medium Trucks: 65.6	70.1 64.1		68.3 57.7		62.3 56.2		70.9 64.6	-	71. 64.		
Medium Trucks: 65.6 Heavy Trucks: 66.0	64.1 64.6		57.7		56.2		64.0		64. 65.		
Vehicle Noise: 73.7	71.9		55.5 68.9		50.8 64.1		72.7		73		
			00.9		04.1		12.		13.		
Centerline Distance to Noise Contour (in	reet)	70 dł	RA	65 d	R4	6	0 dBA	55	dBA		
	I dn:	105		22			489		054		
	CNFL:	113	-	24			526		133		

Friday, November 15, 2019

Friday, November 15, 2019

	FHW	4-RD-77-108 HIG	HWAY N	IOISE PF	REDICTION	MODEL			
Road Nam	io: 2040 + P le: Grand Ave. nt: s/o Warner A	we.				nme: The E hber: 1228			
SITE	SPECIFIC INF	PUT DATA			NO	ISE MOD	EL INPUTS	5	
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 20	0,080 vehicles				Autos	: 15		
Peak Hour	Percentage:	10%		Me	dium Truck	s (2 Axles)	: 15		
Peak H	our Volume: 2	2,008 vehicles		Hei	avy Trucks	(3+ Axles)	: 15		
Ve	hicle Speed:	45 mph	-	Vehicle I	Miy				
Near/Far La	ne Distance:	88 feet	ŀ		icleType	Day	Evening	Night	Daily
Site Data				ven	Aut	,		9.6%	97.42%
				14	adium Truc			10.3%	1.84%
	rrier Height:	0.0 feet			leavy Truc			10.3%	0.74%
Barrier Type (0-W		0.0		,	leavy IIuu	ns. 00.5	2.170	10.070	0.7470
Centerline Dis		60.0 feet		Noise Sc	ource Elev	ations (in	feet)		
Centerline Dist.		60.0 feet			Autos:	2.000			
Barrier Distance		0.0 feet		Mediur	m Trucks:	4.000			
Observer Height (		5.0 feet		Heav	y Trucks:	8.006	Grade Adju	ustment:	0.0
	ad Elevation: ad Elevation:	0.0 feet 0.0 feet	-	l ano Fra	uivalent D	istance (in	foot)		
	Road Grade:	0.0 Teet	-	Lune Ly	Autos:	40.902	leely		
	Left View:	-90.0 degrees		Modiu	m Trucks:	40.902			
	Right View:	90.0 degrees			ry Trucks:	40.903			
FHWA Noise Mod	el Calculations								
VehicleType	REMEL	Traffic Flow L	Distance	Finite	Road	Fresnel	Barrier Atte	en Berr	n Atten
Autos:	68.46	1.08	1.2	0	-1.20	-4.85	0.0	00	0.000
Medium Trucks:	79.45	-16.16	1.2	-	-1.20	-5.01			0.000
Heavy Trucks:	84.25	-20.12	1.2	· · · · ·	-1.20	-5.34	0.0	00	0.000
Unmitigated Nois			-						
VehicleType	Leq Peak Hour	. ,		vening	Leq Nig		Ldn		IEL
Autos:	69.5			65.9		59.8	68.4		69.1
Medium Trucks:	63.3			55.4		53.9	62.4		62.6
Heavy Trucks:	64.1			53.7		54.9	63.3		63.4
Vehicle Noise:	71.4	00.0	6	66.5		61.8	70.4		70.8
Centerline Distant	ce to Noise Cor	ntour (in feet)	70	dBA	65 dB	4	60 dBA	55 (	d D A
		l dn		ав <i>а</i> і3	05 dB 136	~	294	55 0	
		CNEL		13 18	136		294 315	67	
		CNEL		10	140		313	0/	э

		A-RD-77-108 H	IGHW/	NOISE				
	o: 2040 + P					Name: The		
	e: Newport Ave				Job N	umber: 122	82	
Road Segmer	nt: n/o Valcenci	ia Ave.						
	SPECIFIC IN	PUT DATA					DEL INPUTS	S
Highway Data				Site C	onditions	(Hard = 10,	Soft = 15)	
Average Daily	Traffic (Adt): 2	1,010 vehicles				Aut		
Peak Hour	Percentage:	10%		/	1edium Tru	icks (2 Axle	s): 15	
Peak H	our Volume:	2,101 vehicles		1	leavy Truc	ks (3+ Axle	s): 15	
Vel	nicle Speed:	40 mph		Vehic	o Mix			
Near/Far Lar	e Distance:	88 feet			ehicleType	Da	y Evening	Night Daily
Site Data						utos: 77.		9.6% 97.42
		0.0 feet		-	, Medium Tr			10.3% 1.849
	rier Height:				Heavy Tr		5% 2.7%	10.8% 0.749
Barrier Type (0-Wa Centerline Dis	. ,	0.0 60.0 feet						
Centerline Dis Centerline Dist. t		60.0 feet		Noise	Source El	evations (i	n feet)	
Barrier Distance t		0.0 feet			Autos	s: 2.000		
				Med	ium Trucks	s: 4.000		
Observer Height (/		5.0 feet		He	avy Trucks	8: 8.006	Grade Adj	iustment: 0.0
	d Elevation: d Elevation:	0.0 feet 0.0 feet		Lano	quivalant	Distance (	(in foot)	
	a Elevation: Road Grade:			Lane	Auto		,	
r	l eft View:	0.0%		Mag	ium Trucks			
		-90.0 degrees			avy Trucks			
	Right View:	90.0 degrees		пе	avy mucks	6. 40.903		
FHWA Noise Mode	el Calculations	1						
VehicleType	REMEL	Traffic Flow	Distan	ce Fini	te Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	66.51	1.78		1.20	-1.20	-4.8	35 0.0	0.00
Medium Trucks:	77.72	-15.45		1.22	-1.20	-5.0	0.0	0.00
Heavy Trucks:	82.99	-19.41		1.20	-1.20	-5.3	34 0.0	00.00
Unmitigated Noise	Levels (witho	out Topo and b	arrier a	ttenuation	l)			
VehicleType	Leq Peak Hour	r Leq Day	Le	eq Evening	Leq	Night	Ldn	CNEL
Autos:	68.	3 66	6.4	64	.6	58.6	67.2	2 67.
Medium Trucks:	62.	3 60	8.0	54	.4	52.9	61.3	3 61.
Heavy Trucks:	63.	6 62	2.2	53	.1	54.4	62.7	62.
Vehicle Noise:	70.	3 68	3.6	65	.3	60.8	69.3	3 69
Centerline Distand	e to Noise Co	ntour (in feet)						
				70 dBA	65	:/BA	60 dBA	55 dBA
		1.	in:	54	1.	16	250	538
		CNE		0.		-		

	FHV	VA-RD-77-108	HIGHW	VAY N		EDICTIO	N MODE	L	_	_	
Road Nan	io: 2040 + P ne: Redhill Ave nt: n/o Walnut					Project N Job Nui	ame: Th nber: 12		ry		
	SPECIFIC IN	IPUT DATA					ISE MC			;	
Highway Data				4	Site Con	ditions (H	lard = 10	), Soft =	= 15)		
Average Daily	Traffic (Adt):	29,570 vehicle	s						15		
Peak Hour	Percentage:	10%				dium Truc	·		15		
	lour Volume:	2,957 vehicle	s		Hea	avy Truck	s (3+ Axl	es):	15		
	hicle Speed:	40 mph			Vehicle I	Nix					
Near/Far La	ne Distance:	88 feet		-	Vehi	cleType	Da	ay Ev	ening	Night	Daily
Site Data						AL	tos: 77	.5%	12.9%	9.6%	97.42%
Ba	rrier Height:	0.0 feet			Me	edium Tru	cks: 84	.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			F	leavy Tru	cks: 86	6.5%	2.7%	10.8%	0.74%
Centerline Di	st. to Barrier:	60.0 feet		-	Noise So	urce Ele	vations (	in feet)			
Centerline Dist.	to Observer:	60.0 feet		-		Autos:	2.00	,			
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	4.00	-			
Observer Height (	Above Pad):	5.0 feet				y Trucks:	8.00		ade Adiu	istment:	0.0
	ad Elevation:	0.0 feet						-			
	ad Elevation:	0.0 feet		-	Lane Equ	uivalent L			t)		
	Road Grade:	0.0%				Autos:	40.90	-			
	Left View:	-90.0 degree				n Trucks:	40.80				
	Right View:	90.0 degree	es		Heav	y Trucks:	40.90	3			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresnel		rier Atte		m Atten
Autos:	66.51	3.27		1.20	-	-1.20		.85	0.0		0.000
Medium Trucks:	77.72	-13.97		1.22	-	-1.20		.01	0.0		0.000
Heavy Trucks:	82.99	-17.93		1.20	0	-1.20	-5	.34	0.0	00	0.000
Unmitigated Nois					<b>(</b>						
		Ir Leg Day	′ [	Leq E	vening	Leq N	•	Ld		CI	VEL
VehicleType	Leq Peak Hou						60.1		68.7		69.3
Autos:	. 69	1.8	67.9		66.1						
Autos: Medium Trucks:	69	1.8 1.8	62.3		55.9		54.4		62.8		
Autos: Medium Trucks: Heavy Trucks:	, 69 63 65	1.8 1.8 1.1	62.3 63.7		55.9 54.6		54.4 55.9		62.8 64.2		64.3
Autos: Medium Trucks:	69	1.8 1.8 1.1	62.3		55.9		54.4		62.8		64.3
Autos: Medium Trucks: Heavy Trucks:	69 63 65 71	0.8 0.8 0.1 .8	62.3 63.7 70.1		55.9 54.6 66.8		54.4 55.9 62.2		62.8 64.2 70.8		64.3 71.2
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	69 63 65 71	1.8 1.8 1.1 1.8 Dontour (in feet	62.3 63.7 70.1		55.9 54.6 66.8 dBA	65 dł	54.4 55.9 62.2	60 d	62.8 64.2 70.8	55	64.3 71.2 dBA
Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	69 63 65 71	9.8 9.8 9.1 9.8 9.1 9.8 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0	62.3 63.7 70.1	70 0	55.9 54.6 66.8 dBA 8	65 db 146 156	54.4 55.9 62.2 BA	60 d 31	62.8 64.2 70.8 /BA 4	55 6	63.0 64.3 71.2 dBA 76 23

	FHWA	A-RD-77-108 HIG	HWAY I	NOISE PF	REDICT	ION MOD	DEL			
Road Nam	o: 2040 + P e: Redhill Ave. nt: s/o Walnut A	ve.				Name: 1 lumber: 1				
SITES	SPECIFIC INP	UT DATA						L INPUTS	S	
Highway Data				Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily	Traffic (Adt): 31	,340 vehicles					Autos:	15		
Peak Hour	Percentage:	10%		Me	dium Tr	ucks (2 A	xles):	15		
Peak H	our Volume: 3	,134 vehicles		He	avy Tru	cks (3+ A	xles):	15		
Vel	hicle Speed:	40 mph	ŀ	Vehicle	Mix					
Near/Far Lar	ne Distance:	88 feet	ŀ		icleType		Day	Evening	Night	Daily
Site Data				ven			Day 77.5%	•	9.6%	,
				14	ر edium T		77.5% 84.8%		9.6%	97.42%
	rier Height:	0.0 feet			Heavy T		64.6% 86.5%		10.3%	0.74%
Barrier Type (0-Wa		0.0		,	ieavy i	iuchs.	50.57	0 2.170	10.070	0.7470
Centerline Dis		60.0 feet	Ī	Noise So	ource E	levations	s (in f	eet)		
Centerline Dist. t		60.0 feet	Ī		Auto	s: 2.0	000			
Barrier Distance t		0.0 feet		Mediu	m Truck	s: 4.0	000			
Observer Height (/	,	5.0 feet		Heav	y Truck	s: 8.0	006	Grade Adj	ustment.	0.0
	d Elevation:	0.0 feet	-	1 5		Distant		641		
	d Elevation:	0.0 feet	-	Lane Eq			- · -	reet)		
F	Road Grade:	0.0%		Ma dia	Auto					
		-90.0 degrees			m Truck					
	Right View:	90.0 degrees		Heav	ry Truck	s: 40.9	103			
FHWA Noise Mode	el Calculations									
VehicleType	REMEL	Traffic Flow D	istance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	66.51	3.52	1.2	20	-1.20		-4.85	0.0	000	0.000
Medium Trucks:	77.72	-13.72	1.2	22	-1.20		-5.01	0.0	000	0.000
Heavy Trucks:	82.99	-17.67	1.2	20	-1.20		-5.34	0.0	000	0.000
Unmitigated Noise	e Levels (withou	It Topo and barr	ier atter	nuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn	CI	VEL
Autos:	70.0	68.1		66.4		60.3		68.9		69.5
Medium Trucks:	64.0	62.5		56.1		54.6		63.1		63.3
Heavy Trucks:	65.3	63.9		54.9		56.1		64.5	5	64.6
Vehicle Noise:	72.0	70.3		67.0		62.5		71.0	)	71.5
Centerline Distance	e to Noise Con	tour (in feet)								
				dBA		dBA	1	60 dBA		dBA
		Ldn:		70		51		326		02
		CNEL:	7	75	1	62		349	7	52

Friday, November 15, 2019

Friday, November 15, 2019

	FHW	A-RD-77-108	HIGH	WAY NO	OISE PF	REDICT	ION MODEL						
Scenario	: 2040 + P					Project	Name: The I	Bowery					
	: Redhill Ave.					Job N	lumber: 1228	2					
Road Segment	n/o Valcenci	ia Ave.											
	PECIFIC IN	PUT DATA					OISE MOD		rs				
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Tr	raffic (Adt): 3	2,190 vehicles	5				Auto						
Peak Hour P	ercentage:	10%					ucks (2 Axles						
Peak Ho	ur Volume:	3,219 vehicles	5		He	avy Tru	cks (3+ Axles	): 15					
Vehi	icle Speed:	45 mph		v	ehicle l	Mix							
Near/Far Lane	e Distance:	88 feet		F		icleType	e Day	Evening	Nig	ht	Daily		
Site Data							Autos: 77.5	% 12.9%	9	.6%	97.42%		
Barr	ier Heiaht:	0.0 feet			Me	edium T	rucks: 84.8	% 4.9%	10	.3%	1.84%		
Barrier Type (0-Wai		0.0			ŀ	leavy T	rucks: 86.5	% 2.7%	10	.8%	0.74%		
Centerline Dist.	to Barrier:	60.0 feet		٨	loise So	ource E	levations (in	feet)					
Centerline Dist. to		60.0 feet				Auto							
Barrier Distance to	Observer:	0.0 feet			Mediu	m Truck	s: 4 000						
Observer Height (A	,	5.0 feet			Heav	v Truck	s: 8.006	Grade A	djustn	nent:	0.0		
	l Elevation:	0.0 feet		-									
	Elevation:	0.0 feet		L	ane Eq		t Distance (ii	n feet)					
Re	oad Grade:	0.0%				Auto	10.002						
	Left View:	-90.0 degree				m Truck	10.001						
	Right View:	90.0 degree	s		Heav	ry Truck	s: 40.903						
FHWA Noise Model	Calculations	1											
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite		Fresnel	Barrier A		Bern	n Atten		
Autos:	68.46	3.13		1.20		-1.20	-4.85		.000		0.000		
Medium Trucks:	79.45	-14.11		1.22		-1.20	-5.0		.000		0.000		
Heavy Trucks:	84.25	-18.07		1.20		-1.20	-5.34	4 0	.000		0.000		
Unmitigated Noise					,								
	eq Peak Hour			Leq Ev	·	Leq	Night	Ldn		CN			
Autos:	71.	-	59.7		67.9		61.9	70			71.1		
Medium Trucks:	65.		53.8		57.5		55.9	64			64.6		
Heavy Trucks:	66.		54.8		55.7		57.0	65			65.5		
Vehicle Noise:	73.		71.7		68.5		63.9	72	.4		72.9		
Centerline Distance	e to Noise Co	ntour (in feet)	1	70 -	04	05	-10.4	00-104	1		04		
			dn:	70 d			dBA	60 dBA		55 0			
			Lan: IFL :	87 93			87 00	403 432		86 93			
		Cr	IEL:	93	5	2	00	432		93	0		

	FHW	/A-RD-77-108	HIGH	IWAY NO	DISE PF	REDICT	ON MO	DEL			
Scenario: 2040	+ P					Project	Name:	The Bo	owery		
Road Name: Redr	ill Ave.					Job N	umber:	12282			
Road Segment: s/o V	alcenc	ia Ave.									
SITE SPECIF	IC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (A	( <i>dt</i> ): 3	1,520 vehicles	;					Autos:	15		
Peak Hour Percente	age:	10%			Me	dium Tru	icks (2 A	(xles):	15		
Peak Hour Volu	me:	3,152 vehicles	;		He	avy Truc	ks (3+ A	(xles):	15		
Vehicle Spe	eed:	50 mph		V	ehicle l	Wix					
Near/Far Lane Dista	nce:	88 feet		v		icleType		Dav	Evening	Night	Daily
Site Data					ven			77.5%		9.6%	
						, dium T		84.8%		10.3%	1.849
Barrier Hei		0.0 feet				leavy T		86.5%		10.3%	0.749
Barrier Type (0-Wall, 1-Be		0.0			r	leavy I	UCKS:	80.5%	2.1%	10.8%	0.745
Centerline Dist. to Bar		60.0 feet		N	oise So	ource E	evation	s (in fe	eet)		
Centerline Dist. to Obser		60.0 feet				Auto	s: 2.0	000			
Barrier Distance to Obser		0.0 feet			Mediur	n Truck	s: 4.0	000			
Observer Height (Above P		5.0 feet			Heav	y Truck	s: 8.0	006	Grade Adj	ustment:	0.0
Pad Eleva		0.0 feet				,					
Road Eleva		0.0 feet		L	ane Eq		Distan		feet)		
Road Gr		0.0%				Auto					
Left V	ïew:	-90.0 degree	s			n Truck					
Right V	iew:	90.0 degree	s		Heav	y Truck	s: 40.	903			
FHWA Noise Model Calcu	lations										
VehicleType REM		Traffic Flow	Dis	stance	Finite	Road	Fresr	el	Barrier Att	en Ber	m Atten
	70.20	2.58		1.20		-1.20		-4.85	0.0	000	0.00
	81.00	-14.66		1.22		-1.20		-5.01		000	0.00
Heavy Trucks:	85.38	-18.62		1.20		-1.20		-5.34	0.0	000	0.00
Unmitigated Noise Levels											
VehicleType Leq Pea				Leq Eve	•	Leq	Night		Ldn		VEL
Autos:	72.		70.9		69.1		63.1		71.7		72.
Medium Trucks:	66.		64.9		58.5		56.9		65.4		65.
Heavy Trucks:	66.		65.3		56.3		57.6		65.9		66.
Vehicle Noise:	74.	5 7	72.7		69.7		64.9	)	73.4	1	73
Centerline Distance to No	ise Co	ntour (in feet)									
			l	70 di			dBA	6	60 dBA		dBA
		1	Ldn:	102	2	2	20		473	1,0	019
			JEL :	109			36		508		095

FHWA-RD-77-108 H							
Scenario: 2040 + P					ne Bowery		
Road Name: Redhill Ave.			Job Nu	mber: 12	2282		
Road Segment: s/o Warner Ave.							
SITE SPECIFIC INPUT DATA Highway Data		Site Ce	NC nditions (F		DDEL INP		
• •		Sile Co	nunuons (r			5)	
Average Daily Traffic (Adt): 40,160 vehicles					utos: 15		
Peak Hour Percentage: 10%			edium Truc		,		
Peak Hour Volume: 4,016 vehicles		н	eavy Truck	s (3+ Ax	<i>les):</i> 15		
Vehicle Speed: 50 mph		Vehicle	Mix				
Near/Far Lane Distance: 88 feet		Ve	hicleType	D	ay Even	ing Ni	ght Daily
Site Data			AL	itos: 7	7.5% 12.	9% 9	9.6% 97.42
Barrier Height: 0.0 feet		/	Aedium Tru	cks: 8	4.8% 4.	9% 10	0.3% 1.84
Barrier Type (0-Wall, 1-Berm): 0.0			Heavy Tru	cks: 8	8.5% 2.	7% 10	0.8% 0.74
Centerline Dist. to Barrier: 60.0 feet		Noine	Source Ele	vationa	(in fact)		
Centerline Dist. to Observer: 60.0 feet		NOISe			· /		
Barrier Distance to Observer: 0.0 feet			Autos:		-		
Observer Height (Above Pad): 5.0 feet			um Trucks:			Adiuch	manti 0.0
Pad Elevation: 0.0 feet		Hea	avy Trucks:	8.00	6 Grade	+ Aujusii	ment: 0.0
Road Elevation: 0.0 feet		Lane E	quivalent L	Distance	(in feet)		
Road Grade: 0.0%			Autos:	40.90	)2		
Left View: -90.0 degree	5	Medi	um Trucks:	40.80	)4		
Right View: 90.0 degree	5	Hea	avy Trucks:	40.90	03		
FHWA Noise Model Calculations		-					
VehicleType REMEL Traffic Flow	Distan	ce Finit	e Road	Fresne	Barrie	r Atten	Berm Atter
Autos: 70.20 3.63		1.20	-1.20		4.85	0.000	0.00
Medium Trucks: 81.00 -13.61		1.22	-1.20		5.01	0.000	0.00
Heavy Trucks: 85.38 -17.56		1.20	-1.20	-{	5.34	0.000	0.00
Unmitigated Noise Levels (without Topo and B VehicleType Leg Peak Hour Leg Day		ttenuation, g Evening	Leg N	iaht	l dn		CNFL
	1.9	70.		64.1	Lull	72.7	73
	5.9	59	-	58.0		66.5	66
	5.5 6.4	57	-	58.6		67.0	67
11cuvy 11ucks. 01.0 0	3.8	70.		66.0		74.5	75
Vehicle Noise: 75.5 7						-	
Vehicle Noise: 75.5 7 Centerline Distance to Noise Contour (in feet)		70 dBA	65 dl	BA	60 dBA		55 dBA
Centerline Distance to Noise Contour (in feet)	dn:	70 dBA 120	65 dl		60 dBA 556	l	55 dBA 1,197

	FHW.	A-RD-77-108	HIGHV	VAY N	OISE PF	REDICTIO	ON MOD	EL			
	io: 2040 + P					Project I			wery		
	e: Redhill Ave.					Job NL	imber: 1	2282			
Road Segmer	nt: n/o Carnegie	Ave.									
	SPECIFIC INF	PUT DATA								6	
Highway Data				5	Site Con	ditions (	'Hard = '	10, So	ft = 15)		
Average Daily	Traffic (Adt): 40	0,090 vehicles					A	utos:	15		
Peak Hour	Percentage:	10%			Me	dium Tru	cks (2 A	xles):	15		
Peak H	lour Volume:	1,009 vehicles			He	avy Truc	ks (3+ A.	xles):	15		
Ve	hicle Speed:	50 mph		1	/ehicle	Mix					
Near/Far La	ne Distance:	88 feet		H		icleType		Day	Evening	Night	Daily
Site Data								7.5%	12.9%		97.42%
Bai	rrier Height:	0.0 feet			M	edium Tri	ucks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			ŀ	Heavy Tr	ucks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dis		60.0 feet			laise C	ource Ele	wationa	lin fa	<b>c</b> .4)		
Centerline Dist.	to Observer:	60.0 feet		-	voise so				el)		
Barrier Distance	to Observer:	0.0 feet				Autos m Trucks					
Observer Height (.	Above Pad):	5.0 feet				m Trucks vy Trucks			Grade Adj	ustmont	0.0
Pa	ad Elevation:	0.0 feet			neav	y mucks	. 8.0	00	Graue Auj	usunen.	0.0
Roa	ad Elevation:	0.0 feet		L	.ane Eq	uivalent	Distanc	e (in f	eet)		
1	Road Grade:	0.0%				Autos	: 40.9	02			
	Left View:	-90.0 degree	s		Mediu	m Trucks	: 40.8	04			
	Right View:	90.0 degree	s		Heav	ry Trucks	: 40.9	03			
FHWA Noise Mod	el Calculations										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresne	el i	Barrier Atte	en Ber	m Atten
Autos:	70.20	3.62		1.20	)	-1.20	-	4.85	0.0	00	0.000
Medium Trucks:	81.00	-13.62		1.22	2	-1.20	-	5.01	0.0	00	0.000
Heavy Trucks:	85.38	-17.57		1.20	)	-1.20	-	5.34	0.0	00	0.000
Unmitigated Noise			barrier	r atteni	uation)						
	Leq Peak Hour			Leq Ev	•	Leq I	v		Ldn		NEL
Autos:	73.8		71.9		70.2		64.1		72.7		73.3
Medium Trucks:	67.4		65.9		59.5		58.0		66.5		66.7
Heavy Trucks:	67.8		6.4		57.4		58.6		67.0		67.1
Vehicle Noise:	75.5	5	73.8		70.7		65.9		74.5		75.0
Centerline Distant	ce to Noise Cor	ntour (in feet)			_				-		
				70 a		65 0		6	0 dBA		dBA
			.dn:	12		25			555		196
		CI	IEL:	12	8	27	7		596	1,	285

Friday, November 15, 2019

Friday, November 15, 2019

FHWA-RD-77-108 HIGHW	VAY NOIS	E PREDICI	ION MODEL		
Scenario: 2040 + P Road Name: Redhill Ave.			t Name: The E Number: 12282		
Road Segment: s/o Carnegie Ave.					
SITE SPECIFIC INPUT DATA			NOISE MOD		
Highway Data	Site	Conditions	s (Hard = 10, S		
Average Daily Traffic (Adt): 40,470 vehicles			Autos		
Peak Hour Percentage: 10%			rucks (2 Axles)		
Peak Hour Volume: 4,047 vehicles		Heavy Tr.	icks (3+ Axles)	: 15	
Vehicle Speed: 50 mph	Veh	icle Mix			
Near/Far Lane Distance: 88 feet		VehicleTyp	e Day	Evening I	Vight Daily
Site Data			Autos: 77.59	% 12.9%	9.6% 97.42%
Barrier Height: 0.0 feet		Medium	Frucks: 84.89	% 4.9%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy	Trucks: 86.59	% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier: 60.0 feet	Nois	e Source F	levations (in	feet)	
Centerline Dist. to Observer: 60.0 feet		Aut			
Barrier Distance to Observer: 0.0 feet	M	edium Truc			
Observer Height (Above Pad): 5.0 feet		Heavy Truc	ks: 8.006	Grade Adjus	stment: 0.0
Pad Elevation: 0.0 feet					
Road Elevation: 0.0 feet	Lan	e Equivalei Auti	nt Distance (in	i feet)	
Road Grade: 0.0%		Auti edium Truci	10.002		
Left View: -90.0 degrees Right View: 90.0 degrees		Heavy Truc			
FHWA Noise Model Calculations					
VehicleType REMEL Traffic Flow Dista	ance F	inite Road	Fresnel	Barrier Atter	Berm Atten
Autos: 70.20 3.66	1.20	-1.20	-4.85	5 0.00	0.00
Medium Trucks: 81.00 -13.58	1.22	-1.20	-5.01	0.00	0.000
Heavy Trucks: 85.38 -17.53	1.20	-1.20	-5.34	0.00	0 0.000
Unmitigated Noise Levels (without Topo and barrier					
	Leq Eveni		Night	Ldn	CNEL
Autos: 73.9 72.0 Medium Trucks: 67.4 65.9		70.2	64.2	72.8	73.4
Medium Trucks: 67.4 65.9 Heavy Trucks: 67.9 66.4		59.6 57.4	58.0 58.6	66.5 67.0	66.1 67.1
Vehicle Noise: 75.6 73.8		57.4 70.8	58.6	74.5	75.0
Centerline Distance to Noise Contour (in feet)			00.0		70.5
	70 dBA	65	dBA	60 dBA	55 dBA
Ldn:	120	:	259	559	1,204

	HWA-RI	D-77-108 H	GHWA	Y NO	ISE PR	EDICT	ION MO	DEL			
Scenario: 2040 + Road Name: Redhill Road Segment: n/o Bar	Ave.	vy.					t Name: lumber:				
SITE SPECIFIC	INPUT	DATA				ſ	NOISE I	<b>IODE</b>	L INPUT	s	
Highway Data				Si	te Conc		(Hard =				
Average Daily Traffic (Adt	): 43,630	) vehicles						Autos:	15		
Peak Hour Percentage	e: 10	0%			Med	lium Tr	ucks (2 /	(xles):	15		
Peak Hour Volum	e: 4,363	3 vehicles			Hea	vy Tru	cks (3+ /	Axles):	15		
Vehicle Speed	1: 50	) mph		Ve	ehicle N	liv					
Near/Far Lane Distance	e: 106	6 feet		Ve		leTvp	2	Dav	Evening	Night	Dailv
Site Data				-	venie		Autos:	77.5%		9.6%	
				_	Me		rucks:	84.8%		10.3%	
Barrier Heigh Barrier Type (0-Wall, 1-Berm		.0 feet						86.5%		10.8%	
Centerline Dist. to Barrie		.0 0 feet								10.070	0.7 17
Centerline Dist. to Observe		.0 feet		No	oise So	urce E	levation	s (in fe	eet)		
Barrier Distance to Observe		.0 feet				Auto		000			
Observer Height (Above Pad		0 feet			Medium			000			
Pad Elevatio		0 feet			Heavy	/ Truck	(s: 8.	006	Grade Ad	justment	: 0.0
Road Elevatio		.0 feet		La	ne Equ	ivalen	t Distan	ce (in	feet)		
Road Grad		.0%				Auto		826	,		
Left Viel		.0 degrees			Medium	n Truck	(s: 45.	738			
Right View		.0 degrees			Heavy	/ Truck	(s: 45.	826			
FHWA Noise Model Calculat	ions										
VehicleType REMEL		fic Flow	Distan		Finite F		Fresr		Barrier Att		m Atten
	.20	3.99		0.46		-1.20		-4.86		000	0.00
	.00	-13.25		0.48		-1.20		-5.00		000	0.00
Heavy Trucks: 85	.38	-17.20		0.46		-1.20		-5.28	0.0	000	0.00
Unmitigated Noise Levels (v					,			1			
VehicleType Leq Peak		Leq Day		q Eve	v .	Leq	Night		Ldn	-	NEL
Autos:	73.5	71			69.8		63.7		72.4		73.
Medium Trucks: Heavy Trucks:	67.0 67.4	65 66			59.2 57.0		57.6 58.2	-	66. 66.		66. 66
Vehicle Noise:	75.2	73			70.4		58.4 65.6		74.	-	74
			.4		70.4		65.6	)	74.	1	74
Centerline Distance to Noise	e Contou	r (in teet)		70 dB		65	dBA	6	60 dBA	55	dBA
		Lo		132			06A		612		318
							+		U12		010

Friday, November 15, 2019

	FHV	/A-RD-77-108	HIGH	NAY N	IOISE PR	EDICTIO	N MOE	EL			
Road Nam	io: 2040 + P e: Redhill Ave nt: s/o Barranc					Project N Job Nur			owery		
	SPECIFIC IN	PUT DATA								S	
Highway Data					Site Con	ditions (H			,		
Average Daily	. ,		s					lutos:	15		
	Percentage:	10%				dium Truc			15		
		4,269 vehicle	s		Hea	avy Truck	s (3+ A	xles):	15		
	hicle Speed:	50 mph		Ē	Vehicle I	Nix					
Near/Far Lar	ne Distance:	106 feet		Ē	Vehi	cleType	1	Day	Evening	Night	Daily
Site Data						Au	tos:	77.5%	12.9%	9.6%	97.42%
Bai	rier Height:	0.0 feet			Me	dium Tru	cks: 8	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks: 8	36.5%	2.7%	10.8%	0.74%
Centerline Dis		70.0 feet			Noise So	urce Ele	ations	in fe	et)		
Centerline Dist.		70.0 feet		F		Autos:	2.0	00	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	4.0	00			
Observer Height (	,	5.0 feet			Heav	v Trucks:	8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation:	0.0 feet		F							
	ad Elevation:	0.0 feet		-	Lane Equ	uivalent L			'eet)		
1	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degre				n Trucks:	45.7				
	Right View:	90.0 degre	es		Heav	y Trucks:	45.8	26			
FHWA Noise Mod		-									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite		Fresn		Barrier Atte		rm Atten
Autos:	70.20	3.89		0.4	-	-1.20		4.86	0.0		0.000
Medium Trucks:	81.00	-13.34		0.4	-	-1.20		5.00		000	0.000
				0.4	6	-1.20	-	5.28	0.0	000	0.000
Heavy Trucks:	85.38	-17.30									
Heavy Trucks: Unmitigated Noise	e Levels (with	out Topo and			<b>(</b>					-	
Heavy Trucks: Unmitigated Noise VehicleType	e Levels (with Leq Peak Hou	r Leq Day	/		vening	Leq Ni	<u> </u>		Ldn	-	NEL
Heavy Trucks: Unmitigated Noise VehicleType Autos:	e Levels (with Leq Peak Hou 73.	r Leq Day	/ 71.5		vening 69.7	Leq N	63.6		72.3	3	72.9
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 73 66	put Topo and r Leq Day 4	/ 71.5 65.4		vening 69.7 59.1	Leq Ni	63.6 57.5		72.3	3	72.9 66.2
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 73 66 67	out Topo and r Leq Day 4 9 3	/ 71.5 65.4 65.9		vening 69.7 59.1 56.9	Leq Ni	63.6 57.5 58.1		72.3 66.0 66.5	3	72.9 66.2 66.6
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 73 66 67 75	out Topo and r Leq Day 4 9 3 1	71.5 65.4 65.9 73.3		vening 69.7 59.1	Leq Ni	63.6 57.5		72.3	3	72.9 66.2 66.6
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 73 66 67 75	out Topo and r Leq Day 4 9 3 1	71.5 65.4 65.9 73.3	Leq E	vening 69.7 59.1 56.9 70.3		63.6 57.5 58.1 65.5		72.3 66.0 66.5 74.0	3 ) )	72.9 66.2 66.6 74.9
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 73 66 67 75	out Topo and r Leq Day 4 9 3 1	/ 71.5 65.4 65.9 73.3	Leq E	vening 69.7 59.1 56.9 70.3 dBA	65 dE	63.6 57.5 58.1 65.5 3A	6	72.3 66.0 66.5 74.0	3 ) ) 555	72.9 66.2 66.6 74.5
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leq Peak Hou 73 66 67 75	Dut Topo and r Leg Day 4 9 3 1 0 ntour (in feet	71.5 65.4 65.9 73.3	Leq E 70 ( 1)	vening 69.7 59.1 56.9 70.3		63.6 57.5 58.1 65.5 3A	6	72.3 66.0 66.5 74.0	3 ) ; ) 55 1	72.9 66.2 66.6 74.5

	FHV	VA-RD-77-108	HIGHV	VAY N	OISE PR	REDICTIO	N MO	DEL			
Scenario: Road Name: Road Segment:	Redhill Ave					Project N Job Nur			wery		
	PECIFIC IN	IPUT DATA								S	
Highway Data				5	Site Con	ditions (H	lard =	10, So	ft = 15)		
Average Daily Tra	affic (Adt): 8	59,290 vehicle	s					Autos:	15		
Peak Hour Pe	ercentage:	10%				dium Truc			15		
Peak Hou	r Volume:	5,929 vehicle	s		Hea	avy Truck	s (3+ A	(xles)	15		
Vehic	le Speed:	50 mph		1	/ehicle	Mix					
Near/Far Lane	Distance:	88 feet		F	Vehi	icleType		Dav	Evening	Night	Dailv
Site Data						Au	tos:	77.5%	12.9%	9.6%	97.429
Barrie	er Height:	0.0 feet			Me	edium Tru	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall,	, 1-Berm):	0.0			ŀ	leavy Tru	cks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. t		60.0 feet		٨	Voise Sc	ource Ele	vation	s (in fe	et)		
Centerline Dist. to (		60.0 feet				Autos:	2.	000			
Barrier Distance to (		0.0 feet			Mediur	n Trucks:	4.	000			
Observer Height (Ab	,	5.0 feet			Heav	y Trucks:	8.	006	Grade Adj	ustment:	0.0
	Elevation:	0.0 feet			ana Fa	uivelent l	Victor		(a a 4)		
	Elevation: ad Grade:	0.0 feet 0.0%		-	ane Equ	uivalent E Autos:	40		eel)		
	ad Grade: Left View:	-90.0 deare			Madium	n Trucks:	40.				
	light View:	90.0 degre				y Trucks:	40.				
FHWA Noise Model (	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresr	nel i	Barrier Att	en Ber	m Atten
Autos:	70.20	5.32		1.20	)	-1.20		-4.85	0.0	000	0.00
Medium Trucks:	81.00	-11.92		1.22	2	-1.20		-5.01	0.0	000	0.00
Heavy Trucks:	85.38	-15.87		1.20	-	-1.20		-5.34	0.0	000	0.00
Unmitigated Noise L											
	eq Peak Hou			Leq Ev	· ·	Leq N	× –		Ldn		VEL
Autos:	75		73.6		71.9		65.8		74.4	-	75.
Medium Trucks:	69		67.6		61.2		59.7		68.2	-	68.
Heavy Trucks:	69		68.1		59.1		60.3		68.7		68.
		.2	75.5		72.4		67.6	)	76.2	<u> </u>	76.
Vehicle Noise:											
Vehicle Noise:		ontour (in feet	)	70 0	ID A	65 d	24	6	0 dBA	55	dBA
		ontour (in feet	Ĺ	70 d		65 dE		6	0 dBA		dBA
			) Ldn: NFL:	70 a 15 16	5	65 dE 334 359		6	0 dBA 721 774	1,	dBA 553 668

Friday, November 15, 2019

Friday, November 15, 2019

123

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PR	REDICT	ION MOD	EL			
	o: 2040 + P e: Redhill Ave t: s/o MacArth						Name: T lumber: 1		owery		
SITE S	PECIFIC IN	IPUT DATA				D	IOISE M	ODE	L INPUTS	5	
Highway Data				S	ite Cor		(Hard = 1				
Average Daily T Peak Hour F Peak Ho	. ,	24,650 vehicle: 10% 2,465 vehicle:					A ucks (2 Ax cks (3+ Ax	,	15 15 15		
Veh	icle Speed:	50 mph		V	ehicle	Mix					
Near/Far Lan	e Distance:	36 feet		-		icleType	e [	Dav	Evening	Night	Dailv
Site Data					1011			7.5%	•	9.6%	
Par	rier Height:	0.0 feet			М	edium T	rucks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			I	leavy T	rucks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dist		40.0 feet		N	oise Se	ource E	levations	(in fe	eet)		
	o Observer: Noove Pad): d Elevation:	40.0 feet 0.0 feet 5.0 feet 0.0 feet			Heav	Auto m Truck ry Truck	s: 4.00 s: 8.00	00 06	Grade Adji	ustment	: 0.0
	d Elevation:	0.0 feet		L	ane Eq		t Distance		feet)		
R	oad Grade:	0.0%				Auto					
	Left View: Right View:	-90.0 degree 90.0 degree				m Truck ry Truck					
FHWA Noise Mode	l Calculation:	s									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite	Road	Fresne	e/	Barrier Atte	en Bei	rm Atten
Autos:	70.20	1.51		2.06		-1.20	-	4.83	0.0	00	0.000
Medium Trucks:	81.00	-15.73		2.08		-1.20	-	5.08	0.0	00	0.000
Heavy Trucks:	85.38	-19.68		2.06		-1.20	-	5.56	0.0	00	0.000
Unmitigated Noise											
	Leq Peak Hou			eq Eve		Leq	Night		Ldn		NEL
Autos:	72		70.7		68.9		62.9		71.5		72.1
Medium Trucks:	66		64.6		58.3		56.7		65.2		65.4
Heavy Trucks:	66		65.1		56.1		57.3		65.7		65.8
Vehicle Noise:	74	.3	72.5		69.5		64.7		73.2		73.
Centerline Distance	e to Noise Co	ontour (in feet	)								
			L	70 dl			dBA	6	i0 dBA		dBA
			Ldn:	66			42		305		558
		CI	VEL:	71		1	52		328	7	707

	FHW	/A-RD-77-108	HIGH	WAY N	OISE PR	EDICTI	ON MODE	-		
Scenar	<i>io:</i> 2040 + P					Project	Name: The	Bowery		
Road Nam	ne: Valencia Av	/e.				Job N	umber: 122	82		
Road Segme	nt: w/o Redhill	Ave.								
	SPECIFIC IN	PUT DATA						DEL INPUT	s	
Highway Data				5	Site Con	ditions	(Hard = 10,	Soft = 15)		
Average Daily	Traffic (Adt): 1	5,630 vehicle	s				Aut	os: 15		
Peak Hour	Percentage:	10%			Med	dium Tru	icks (2 Axle	s): 15		
Peak H	lour Volume:	1,563 vehicle	s		Hea	avy Truc	cks (3+ Axle	s): 15		
Ve	hicle Speed:	45 mph		1	Vehicle I	Nix				
Near/Far La	ne Distance:	36 feet		H		cleType	Da	v Evening	Night	Daily
Site Data								5% 12.9%	9.6%	97.42
Pa	rrier Height:	0.0 feet			Me	dium Ti	rucks: 84.	8% 4.9%	10.3%	1.84
Barrier Type (0-W		0.0			H	leavy Ti	rucks: 86.	5% 2.7%	10.8%	0.74
Centerline Di	. ,	40.0 feet		-	Vaias Ca	urac El	evations (i	n faat)		
Centerline Dist.	to Observer:	40.0 feet		'	voise 30	Auto				
Barrier Distance	to Observer:	0.0 feet			Marthur	Auto: n Truck:				
Observer Height (	Above Pad):	5.0 feet							i colmonte	0.0
P	ad Elevation:	0.0 feet			Heav	y Truck	5. 8.006	Grade Ad	usunem.	0.0
Roa	ad Elevation:	0.0 feet		L	ane Equ	ivalen	Distance (	'in feet)		
	Road Grade:	0.0%				Auto	s: 35.847			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 35.735			
	Right View:	90.0 degree	es		Heav	y Truck	s: 35.847			
FHWA Noise Mod	el Calculation	s								
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresnel	Barrier Att	en Berr	n Atter
Autos:	68.46	-0.01		2.06	3	-1.20	-4.	33 0.0	000	0.00
Medium Trucks:	79.45	-17.25		2.08	3	-1.20	-5.	0.0 80	000	0.00
Heavy Trucks:	84.25	-21.21		2.06	3	-1.20	-5.	56 0.0	000	0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	er atten	uation)					
VehicleType	Leq Peak Hou			Leq Ev	v	Leq	Night	Ldn		IEL
Autos:	69.		67.4		65.6		59.6	68.2		68
Medium Trucks:	63.		61.6		55.2		53.7	62.1		62
Heavy Trucks:	63.		62.5		53.5		54.7	63.1		63
Vehicle Noise:		-	69.4		66.3		61.6	70.1	1	70
Centerline Distan	ce to Noise Co	ontour (in feet	)	70	104	05	10.4	00 10 4		-10.4
			I dn:	70 c			dBA	60 dBA		dBA
			Lan:	4	1	8	8	189	40	38
		~	NFI :	44			4	203		37

Friday, November 15, 2019

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIO	N MOD	DEL			
Scenari	o: 2040 + P					Project N	ame: T	The Bo	owery		
	e: Valencia Av					Job Nu	nber: 1	2282			
Road Segmer	nt: e/o Redhill	Ave.									
	SPECIFIC IN	IPUT DATA							L INPUTS	S	
Highway Data					Site Con	ditions (F	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	21,680 vehicle	s					Autos:			
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 A	xles):	15		
Peak H	our Volume:	2,168 vehicle	s		Hea	avy Truck	s (3+ A	xles):	15		
Vei	hicle Speed:	45 mph			Vehicle I	Nix					
Near/Far Lar	ne Distance:	36 feet			Vehi	cleType	1	Day	Evening	Night	Daily
Site Data						AL	tos:	77.5%	12.9%	9.6%	97.42%
Bai	rier Height:	0.0 feet			Me	edium Tru	cks: 8	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	•	0.0			F	leavy Tru	cks: 8	86.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	40.0 feet		-	Noise So	urce Ele	vations	: (in fe	et)		
Centerline Dist.	o Observer:	40.0 feet		F		Autos:					
Barrier Distance	o Observer:	0.0 feet			Modiur	n Trucks:	4.0				
Observer Height (J	Above Pad):	5.0 feet				y Trucks:	8.0		Grade Adj	ustment:	0.0
Pa	d Elevation:	0.0 feet									
	d Elevation:	0.0 feet		1	Lane Equ	uivalent L			feet)		
1	Road Grade:	0.0%				Autos:	35.8				
	Left View:	-90.0 degre				n Trucks:	35.7				
	Right View:	90.0 degre	es		Heav	y Trucks:	35.8	347			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow		tance	Finite		Fresn	-	Barrier Atte		m Atten
Autos:	68.46	1.41		2.06	-	-1.20		4.83	0.0		0.00
Medium Trucks:	79.45	-15.83		2.08	-	-1.20		-5.08	0.0		0.00
Heavy Trucks:	84.25	-19.78		2.00	6	-1.20	-	-5.56	0.0	00	0.00
Unmitigated Noise											
VehicleType	Leq Peak Hou			Leg Ev	~	Leq N	<u> </u>		Ldn		VEL
Autos:	70		68.8		67.1		61.0		69.6		70.3
Medium Trucks:	64		63.0		56.6		55.1		63.6		63.
Heavy Trucks:	65		63.9		54.9		56.1		64.5		64.
Vehicle Noise:	72	.6	70.8		67.7		63.0		71.5	5	72.
Centerline Distant	e to Noise Co	ontour (in fee	t)								
				70 c	dBA	65 dł	BA	6	60 dBA		dBA
			Ldn: NFL:	5		109			235 252		07 44

	FHW	A-RD-77-108 HIG	HWAY	NOISE PI	REDICTI	ON MOD	EL			
Road Nam	io: 2040 + P e: Warner Ave nt: w/o Grand A					Name: T umber: 1		owery		
SITE	SPECIFIC IN	PUT DATA						L INPUTS	5	
Highway Data				Site Con	ditions	(Hard = 1	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	7,710 vehicles				A	utos:	15		
Peak Hour	Percentage:	10%		Me	dium Tru	icks (2 A)	xles):	15		
Peak H	our Volume:	2,771 vehicles		He	avy Truc	:ks (3+ A)	xles):	15		
Ve	hicle Speed:	45 mph		Vehicle	Mix					
Near/Far Lai	ne Distance:	36 feet			icleType		Day	Evening	Night	Daily
Site Data				Ven			7.5%	•	•	97.42%
					ر edium Tr		34.8%		10.3%	1.84%
	rier Height:	0.0 feet			Heavy Tr		36.5%		10.8%	
Barrier Type (0-W		0.0			icavy ii	uono. c	0.070	2.170	10.070	0.7470
Centerline Dis		40.0 feet		Noise Se	ource El	evations	(in fe	eet)		
Centerline Dist.		40.0 feet			Autos	s: 2.0	00			
Barrier Distance		0.0 feet		Mediu	m Trucks	s: 4.0	00			
Observer Height (	,	5.0 feet		Heav	y Trucks	s: 8.0	06	Grade Adji	ustment:	0.0
	ad Elevation:	0.0 feet		Lane Eq	uivelent	Distance	o (in i	[0.0.4]		
	ad Elevation:	0.0 feet		Lane Eq				eel)		
	Road Grade:	0.0%		Madiu	Autos m Trucks					
	Left View:	-90.0 degrees								
	Right View:	90.0 degrees		nea	y Trucks	5. 30.0	47			
FHWA Noise Mode	el Calculations	;								
VehicleType	REMEL		Distance	Finite	Road	Fresne		Barrier Atte	en Ber	m Atten
Autos:	68.46	2.48	2.	06	-1.20	-	4.83	0.0	00	0.000
Medium Trucks:	79.45	-14.76	2.	08	-1.20	-	5.08	0.0	00	0.000
Heavy Trucks:	84.25	-18.72	2.	06	-1.20	-	5.56	0.0	00	0.000
Unmitigated Noise	e Levels (witho	out Topo and bar	rier atte	nuation)						
VehicleType	Leq Peak Hou	r Leq Day	Leq I	Evening	Leq	Night		Ldn		VEL
Autos:	71.	8 69.9	9	68.1		62.1		70.7		71.3
Medium Trucks:	65.	6 64.1	1	57.7		56.2		64.6		64.9
Heavy Trucks:	66.	4 65.0	)	55.9		57.2		65.5		65.7
Vehicle Noise:	73.	6 71.9	9	68.7		64.1		72.6		73.1
Centerline Distant	ce to Noise Co	ntour (in feet)								
				dBA		dBA	6	0 dBA		dBA
		Ldn		60		29		277	-	97
		CNEL	2	64	13	38		297	6	40

Friday, November 15, 2019

Friday, November 15, 2019

\_\_\_\_\_

	FHW	/A-RD-77-108	HIGH	WAY N	OISE PR	EDICTI	ON MOD	DEL			
Road Nam	io: 2040 + P e: Warner Ave nt: e/o Grand A						Name: 1 umber: 1		owery		
SITE S	SPECIFIC IN	PUT DATA				N	IOISE N	IODE	L INPUTS	5	
Highway Data				5	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Peak Hour	Traffic (Adt): 3 Percentage:	2,850 vehicle 10%	s		Med	dium Tru	ıcks (2 A	Autos: xles);	15 15		
		3.285 vehicle	s		Hea	avy Truc	ks (3+ A	xles):	15		
Vel	hicle Speed:	45 mph			(- h-) - l - 1		•				
Near/Far Lar	ne Distance:	36 feet		,	/ehicle I	nix cleType		Dav	Evening	Night	Dailu
Site Data					veni			Day 77.5%	•	9.6%	Daily 97.42%
					1.40	ر dium Ti		84.8%		9.0%	97.42%
Bar Barrier Type (0-Wa	rier Height: all, 1-Berm):	0.0 feet 0.0				leavy Ti		86.5%		10.3%	0.74%
Centerline Dis	t. to Barrier:	40.0 feet			laise Sa	urco El	evations	in fe	of)		
Centerline Dist. t	to Observer:	40.0 feet		-	10/30 00	Auto:					
Barrier Distance t	to Observer:	0.0 feet			Mediur	n Truck					
Observer Height (/	,	5.0 feet				y Truck			Grade Adj	ustment	0.0
	d Elevation:	0.0 feet					Distanc				
	ad Elevation:	0.0 feet		1	ane Equ	Auto:			eet)		
F	Road Grade: Left View:	0.0%			Mar allow	n Truck:					
	Right View:	-90.0 degre 90.0 degre				y Truck					
FHWA Noise Mode	el Calculations	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el .	Barrier Atte	en Ber	m Atten
Autos:	68.46	3.21		2.06	6	-1.20		-4.83	0.0	00	0.000
Medium Trucks:	79.45	-14.02		2.08		-1.20		-5.08	0.0		0.000
Heavy Trucks:	84.25	-17.98		2.06		-1.20		-5.56	0.0	00	0.000
Unmitigated Noise										1	
,,	Leq Peak Hou			Leq Ev	•	Leq	Night		Ldn	-	NEL
Autos:	72.	-	70.6		68.9		62.8		71.4		72.0
Medium Trucks:	66. 67	-	64.8 65.7		58.4 56.7		56.9 57.9		65.4 66.3		65.6
Heavy Trucks: Vehicle Noise:	67.		65.7 72.6		56.7 69.5		57.9 64.8		73.3		66.4 73.8
Centerline Distance					05.5		04.0		10.0	,	13.0
Contenine Distant	le to moise Co	mour (in leet	/	70 d	IBA	65	dBA	6	0 dBA	55	dBA
			Ldn:	67	7	14	44		310	6	69
		C	NEL:	72	2	1	55		333	7	17

		/A-RD-77-108	HIGH	VAY NO	DISE PR				
	io: 2040 + P						Name: The		
	e: Warner Ave					Job N	umber: 122	282	
Road Segme	nt: w/o Redhill	Ave.							
	SPECIFIC IN	PUT DATA						DEL INPUTS	5
Highway Data				s	Site Con	ditions	(Hard = 10	, Soft = 15)	
Average Daily	Traffic (Adt): 3	9,840 vehicles	5				Aut	os: 15	
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 Axle	es): 15	
Peak H	lour Volume:	3,984 vehicles	5		Hea	avy Truc	ks (3+ Axle	es): 15	
Ve	hicle Speed:	45 mph		L.	/ehicle l	Mix			
Near/Far La	ne Distance:	88 feet		-		icleType	Da	y Evening	Night Daily
Site Data					VCIII			.5% 12.9%	9.6% 97.42%
		0.0 feet			Me	edium Tr		8% 4.9%	10.3% 1.84%
Barrier Type (0-W	rrier Height:	0.0 feet				leavy Tr		.5% 2.7%	10.8% 0.74%
Centerline Dis	. ,	0.0 60.0 feet		L					
Centerline Dis Centerline Dist.		60.0 feet		٨	loise Sc		evations (i		
Barrier Distance		0.0 feet				Autos			
Observer Height (		5.0 feet			Mediur	n Trucks	s: 4.000		
	ad Elevation:	0.0 feet			Heav	y Trucks	s: 8.006	Grade Adj	ustment: 0.0
	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distance	(in feet)	
	Road Grade:	0.0%		-		Auto		, ,	
	Left View:	-90.0 degree			Mediur	n Trucks			
	Right View:	90.0 degree				v Trucks			
	rught non.	50.0 degree	.5			,			
FHWA Noise Mod	el Calculation	5							
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos:	68.46	4.05		1.20		-1.20	-4.	85 0.0	0.00
Medium Trucks:	79.45	-13.19		1.22		-1.20	-5.		
Heavy Trucks:	84.25	-17.14		1.20		-1.20	-5.	34 0.0	00 0.00
Unmitigated Nois	e Levels (with	out Topo and	barrie	r attenu	uation)				
VehicleType	Leq Peak Hou			Leq Ev	•	Leq	Night	Ldn	CNEL
Autos:	72.	-	70.6		68.9		62.8	71.4	
Medium Trucks:	66.	-	64.8		58.4		56.9	65.3	
Heavy Trucks:	67.		65.7		56.7		57.9	66.3	
Vehicle Noise:	74.	.4	72.6		69.5		64.8	73.3	73.
	ce to Noise Co	ontour (in feet,	)						r
Centerline Distan				70 d	BA	65 (	dBA	60 dBA	55 dBA
Centerline Distan									
Centerline Distan			Ldn:	100 101			15 31	464 498	1,000 1.072

FHWA-RD-77-108 HIG	SHWAY	NOISE PF	REDICTION	MODEL			
Scenario: 2040 + P			Project Nar				
Road Name: Warner Ave.			Job Numb	er: 12282	2		
Road Segment: e/o Redhill Ave.							
SITE SPECIFIC INPUT DATA					EL INPUTS	S	
Highway Data		Site Con	ditions (Ha	rd = 10, S	oft = 15)		
Average Daily Traffic (Adt): 32,620 vehicles				Autos			
Peak Hour Percentage: 10%			dium Trucks	· · · ·			
Peak Hour Volume: 3,262 vehicles		He	avy Trucks (	3+ Axles)	: 15		
Vehicle Speed: 50 mph		Vehicle I	Mix				
Near/Far Lane Distance: 88 feet		Veh	icleType	Day	Evening	Night	Daily
Site Data			Auto	s: 77.5%	6 12.9%	9.6%	97.429
Barrier Height: 0.0 feet		Me	edium Truck	s: 84.8%	6 4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm): 0.0		F	leavy Truck	s: 86.5%	6 2.7%	10.8%	0.749
Centerline Dist. to Barrier: 60.0 feet		Noise Sc	ource Eleva	tions (in	feet)		
Centerline Dist. to Observer: 60.0 feet			Autos:	2.000	000		
Barrier Distance to Observer: 0.0 feet		Mediu	m Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet			v Trucks:	8.006	Grade Adj	iustment.	: 0.0
Pad Elevation: 0.0 feet							
Road Elevation: 0.0 feet		Lane Eq	uivalent Dis		teet)		
Road Grade: 0.0%		A da alla a	Autos: m Trucks:	40.902			
Left View: -90.0 degrees Riaht View: 90.0 degrees			n Trucks: vy Trucks:	40.804			
Right View: 90.0 degrees		Tieav	y mucks.	40.903			
FHWA Noise Model Calculations							
	Distance			resnel	Barrier Att		m Atten
Autos: 70.20 2.73		20	-1.20	-4.85		000	0.00
Medium Trucks: 81.00 -14.51		22	-1.20	-5.01		000	0.00
Heavy Trucks: 85.38 -18.47	1.:	20	-1.20	-5.34	0.0	000	0.00
Unmitigated Noise Levels (without Topo and bar	rier atte	enuation)					
VehicleType Leg Peak Hour Leg Day	Leq E	Evening	Leq Nigl	ıt	Ldn		NEL
Pointer Pointe		69.3		63.2	71.8	-	72.
Autos: 72.9 71.0	-			57.1	65.6	-	65.
Autos:         72.9         71.0           Medium Trucks:         66.5         65.0	0	58.6				1	66
Autos:         72.9         71.0           Medium Trucks:         66.5         65.0           Heavy Trucks:         66.9         65.5	- D 5	58.6 56.5		57.7	66.1		
Autos:         72.9         71.0           Medium Trucks:         66.5         65.0	- D 5			57.7 65.0	66.1 73.6		
Autos:         72.9         71.0           Medium Trucks:         66.5         65.0           Heavy Trucks:         66.9         65.5           Vehicle Noise:         74.6         72.9	- 0 5 9	56.5 69.8					
Autos:         72.9         71.0           Medium Trucks:         66.5         65.1           Heavy Trucks:         66.9         65.5           Vehicle Noise:         74.6         72.9           Centerline Distance to Noise Contour (in feet)         74.6         72.9	0 5 9 70	56.5 69.8 0 dBA	65 dBA	65.0	73.6 60 dBA	55	74. dBA
Autos:         72.9         71.0           Medium Trucks:         66.5         65.0           Heavy Trucks:         66.9         65.5	0 5 9 70	56.5 69.8		65.0	73.6	55	74.

Scenario:     2040 + P     Project Name:     The Bowery       Road Name:     Dyer Rd.     Job Number:     12282       Road Segment:     Wo Redhill Ave.     NOISE MODEL INPUTS       SITE SPECIFIC INPUT DATA     NOISE MODEL INPUTS       Highway Data     Site Conditions (Hard = 10, Soft = 15)       Average Daily Traffic (Adt):     35,350 vehicles     Autos:       Peak Hour Procentage:     10%     Medium Trucks (2 Autes):       Vehicle Speed:     40 mph     Vehicle Mix       Near/Far.Lane Distance:     86 tet     Vehicle Mix	
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt): 35,350 vehicles         Autos: 15           Peak Hour Percentage: 10%         Medium Trucks (2 Axles): 15           Peak Hour Volume: 3,535 vehicles         Heavy Trucks (3 + Axles): 15           Vehicle Speed: 40 mph         Vehicle Mix	
Average Daily Traffic (Ad):     35,350 vehicles     Autos:     15       Peak Hour Percentage:     10%     Medium Trucks (2 Axles):     15       Peak Hour Volume:     3,535 vehicles     Heavy Trucks (3+ Axles):     15       Vehicle Speed:     40 mph     Vehicle Mix	
Preak Hour Percentage:     10%     Medium Trucks (2 Axles):     15       Peak Hour Volume:     3,535 vehicles     Heavy Trucks (3+ Axles):     15       Vehicle Speed:     40 mph     Vehicle Mix	
Peak Hour Volume: 3,535 vehicles Vehicle Speed: 40 mph Ventice I and Diction 85 feat	
Vehicle Speed: 40 mph New/Exclana Distance: 98 feet	
Venicie Mix	
Near/Earl and Distance: 88 feet	
	Daily
VehicleType         Day         Evening         Night           Site Data         Autos:         77.5%         12.9%         9.6%	97.42%
	1.84%
Barrier Height: 0.0 feet	0.74%
Damer Type (o-waii, 1-Dem). 0.0	0.747
Centerline Dist. to Barrier: 60.0 feet Noise Source Elevations (in feet)	
Centerline Dist. to Observer: 60.0 feet Autos: 2.000	
Barrier Distance to Observer: 0.0 feet Medium Trucks: 4.000	
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.006 Grade Adjustment:	0.0
Pad Elevation: 0.0 feet	
Road Elevation: 0.0 feet Lane Equivalent Distance (in feet)	
Road Grade: 0.0% Autos: 40.902	
Left View: -90.0 degrees Medium Trucks: 40.804	
Right View: 90.0 degrees Heavy Trucks: 40.903	
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrier	Atten
Autos: 66.51 4.04 1.20 -1.20 -4.85 0.000	0.000
Medium Trucks: 77.72 -13.19 1.22 -1.20 -5.01 0.000	0.000
Heavy Trucks: 82.99 -17.15 1.20 -1.20 -5.34 0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)	
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNI	
Autos: 70.6 68.7 66.9 60.8 69.5	70.1
Medium Trucks: 64.5 63.0 56.7 55.1 63.6	63.8
Heavy Trucks: 65.8 64.4 55.4 56.6 65.0	65.1
Vehicle Noise: 72.6 70.8 67.6 63.0 71.5	72.0
Centerline Distance to Noise Contour (in feet)	
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 d	
Centerline Distance to Noise Contour (in feet)	

Friday, November 15, 2019

Friday, November 15, 2019

	FH\	NA-RD-77-108	HIGHWA	AY NO	ISE PF	REDICT	ION MO	DEL			
	o: 2040 + P e: Barranca F it: e/o Redhill						t Name: lumber:				
SITE S	SPECIFIC IN	IPUT DATA				ſ	NOISE N	NODE	L INPUT	S	
Highway Data				Si	te Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily 1	Traffic (Adt):	40,270 vehicle	s					Autos.	15		
Peak Hour F	Percentage:	10%			Me	dium Tr	ucks (2 /	Axles):	15		
Peak Ho	our Volume:	4,027 vehicle	s		He	avy Tru	cks (3+ A	(xles	15		
	nicle Speed:	50 mph		Ve	ehicle I	Mix					
Near/Far Lan	e Distance:	106 feet			Veh	icleType	э	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	6 12.9%	9.6%	6 97.42%
Bar	rier Heiaht:	0.0 feet			Me	edium T	rucks:	84.8%	6 4.9%	10.3%	5 1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0			ŀ	leavy 1	rucks:	86.5%	6 2.7%	10.8%	6 0.74%
Centerline Dis	t. to Barrier:	70.0 feet		N	nise Sr	urce F	levation	s (in f	eet)		
Centerline Dist. t	o Observer:	70.0 feet				Auto		000	000		
Barrier Distance t	o Observer:	0.0 feet			Mediu	n Truck		000			
Observer Height (A	,	5.0 feet			Heav	v Truck		006	Grade Adj	ustmen	t: 0.0
	d Elevation:	0.0 feet					1 Distan	//	, (		
	d Elevation:	0.0 feet		Là	ine Eq	Auto	t Distan		teet)		
F	Road Grade: Left View:	0.0%			Mar alle a	Auto n Truck		826 738			
	Right View:	-90.0 degree 90.0 degree				y Truck		738 826			
FHWA Noise Mode	el Calculation	S									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresr	nel	Barrier Att	en Be	rm Atten
Autos:	70.20	3.64		0.46		-1.20		-4.86	0.0	000	0.000
Medium Trucks:	81.00			0.48		-1.20		-5.00	0.0		0.000
Heavy Trucks:	85.38			0.46		-1.20		-5.28	0.0	000	0.000
Unmitigated Noise					,						
	Leq Peak Ho			eq Eve		Leq	Night		Ldn		NEL
Autos:			71.2		69.4		63.4		72.0		72.6
Medium Trucks:			65.2		58.8		57.3		65.7		66.0
Heavy Trucks:	-		65.7		56.6		57.9		66.2	-	66.4
Vehicle Noise:			73.1		70.0		65.2	<u> </u>	73.8	5	74.2
Centerline Distanc	e to Noise C	ontour (in feet	,	70 dE	24	PE	dBA	1	60 dBA	5	5 dBA
			I dn:	125			69	- ·	580		.249
			NEL:	125		_	89		623		,249 .342
		0,		104		4			020		,042

	FHW	A-RD-77-108 H	IGHW	AY NO	SE PR	EDICTI		EL			
Scenari	o: 2040 + P					Project	Name: TI	he Bow	/ery		
Road Nam	e: Barranca Pk	wy.				Job N	umber: 12	2282			
Road Segmer	nt: w/o Tustin F	Ranch Rd.									
	SPECIFIC IN	PUT DATA	-						INPUTS	;	
Highway Data				Sit	e Con	ditions	(Hard = 1	0, Soft	t = 15)		
Average Daily	Traffic (Adt): 4	2,540 vehicles					A	utos:	15		
Peak Hour	Percentage:	10%			Mee	dium Tru	icks (2 Ax	des):	15		
Peak H	our Volume:	4,254 vehicles			Hea	avy Truc	ks (3+ Ax	des):	15		
Vel	hicle Speed:	50 mph		Vo	hicle I	<i>Niv</i>					
Near/Far Lar	ne Distance:	106 feet		ve		cleType		Dav E	vening	Night	Daily
Site Data					ven			7.5%	12.9%	9.6%	97.429
					M	r dium Tr		4.8%	4.9%	10.3%	1.849
	rier Height:	0.0 feet				leavy Tr		4.0% 6.5%	2.7%	10.3%	0.74
Barrier Type (0-Wa	. ,	0.0			, r	leavy II	UCKS. O	0.3%	2.170	10.0%	0.74
Centerline Dis		70.0 feet		No	ise So	urce El	evations	(in fee	t)		
Centerline Dist. t		70.0 feet				Autos	s: 2.00	00			
Barrier Distance t		0.0 feet			Mediur	n Trucks	a: 4.00	00			
Observer Height (/	,	5.0 feet			Heav	y Trucks	8: 8.00	06 G	rade Adju	istment:	0.0
	d Elevation:	0.0 feet			_						
	d Elevation:	0.0 feet		La	ne Eqi		Distance		et)		
F	Road Grade:	0.0%				Autos					
	Left View:	-90.0 degrees		,		n Trucks					
	Right View:	90.0 degrees			Heav	y Trucks	3: 45.82	26			
FHWA Noise Mode	el Calculations	:									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	l Bi	arrier Atte	en Berr	n Atter
Autos:	70.20	3.88		0.46		-1.20	-4	4.86	0.0	00	0.00
Medium Trucks:	81.00	-13.36		0.48		-1.20		5.00	0.0		0.00
Heavy Trucks:	85.38	-17.31		0.46		-1.20	-{	5.28	0.0	00	0.00
Unmitigated Noise											
,1	Leq Peak Hour			eq Ever	·	Leq I	Vight	L	.dn		IEL
Autos:	73.		1.4		69.7		63.6		72.3		72.
Medium Trucks:	66.		5.4		59.0		57.5		66.0		66.
Heavy Trucks:	67.		5.9		56.9		58.1		66.5		66.
Vehicle Noise:	75.		3.3		70.2		65.5		74.0		74
Centerline Distanc	e to Noise Co	ntour (in feet)		70.00		07	10.4		-/0.4		-10.4
		,		70 dB.	4	65 0			dBA		dBA
		L	dn:	130		27	9	6	01	1,2	296
		CN	-1.	139		30		-	46		392

	FHW	A-RD-77-108	HIGI	HWAY	NOISE PI	REDICT	ION MO	ODEL			
Scenario: 2040 +								The Bo	owery		
Road Name: MacArt	hur E	Blvd.				Job N	lumber	: 12282			
Road Segment: w/o Re	dhill	Ave.									
SITE SPECIFIC	C IN	PUT DATA			0.11					s	
Highway Data					Site Cor	ditions	(Hard				
Average Daily Traffic (Ad			s					Autos:	15		
Peak Hour Percentag	e:	10%				dium Tr			15		
Peak Hour Volum		3,882 vehicles	s		He	avy Tru	cks (3+	Axles):	15		
Vehicle Spee	d:	50 mph			Vehicle	Mix					
Near/Far Lane Distanc	e:	106 feet			Veh	icleType	;	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.6%	97.429
Barrier Heigh	t.	0.0 feet			M	edium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Bern		0.0				Heavy T	rucks:	86.5%	2.7%	10.8%	0.749
Centerline Dist. to Barrie	r:	70.0 feet			Noise S	ource E	levatio	ns (in fe	et)		
Centerline Dist. to Observe	r:	70.0 feet				Auto		2.000	.,		
Barrier Distance to Observe	r:	0.0 feet			Mediu	m Truck		1.000			
Observer Height (Above Pac	D:	5.0 feet				/y Truck		3.006	Grade Ad	iustment:	0.0
Pad Elevatio	n:	0.0 feet									
Road Elevatio	n:	0.0 feet			Lane Eq				'eet)		
Road Grad		0.0%				Auto		5.826			
Left Vie	W:	-90.0 degree	es			m Truck		5.738			
Right Vie	W.:	90.0 degree	es		Hea	/y Truck	s: 4	5.826			
FHWA Noise Model Calcula	-										
VehicleType REMEL		Traffic Flow	Di	istance		Road	Fres		Barrier Att		m Atten
	.20	3.48		0.4		-1.20		-4.86		000	0.00
	.00	-13.76		0.4		-1.20		-5.00		000	0.00
Heavy Trucks: 85	.38	-17.71		0.4	46	-1.20		-5.28	0.0	000	0.00
Unmitigated Noise Levels (											
VehicleType Leq Peak		. ,		Leq E	vening	,	Night		Ldn		VEL
Autos:	73.	-	71.1		69.3		63		71.9	-	72.
Medium Trucks:	66.	-	65.0		58.7		57		65.6	-	65.
Heavy Trucks:	66.		65.5		56.5		57		66.1	-	66.
Vehicle Noise:	74.	6	72.9		69.8		65	.1	73.6	3	74.
Centerline Distance to Nois	e Co	ntour (in feet	)		10.4	-		-			
			!		dBA		dBA	6	0 dBA		dBA
			Ldn:		22	2	63		566	1,	219
			VFI :		31		82		608		310

	FHV	VA-RD-77-108	HIGHWA	Y N		EDICT	ION MC	DEL			
Road Nan	rio: 2040 + P ne: MacArthur nt: e/o Redhill					Project Job N	Name: lumber:				
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data					Site Con	ditions	(Hard :		,		
Average Daily	Traffic (Adt): 3	31,580 vehicles						Autos			
Peak Hour	Percentage:	10%				dium Tru					
Peak H	lour Volume:	3,158 vehicles	;		Hea	avy Truc	cks (3+	Axles)	15		
Ve	hicle Speed:	50 mph		ŀ	Vehicle I	Mix					
Near/Far La	ne Distance:	106 feet		ŀ		cleType		Day	Evening	Night	Daily
Site Data							Autos:	77.5%	0	9.6	
	rrier Height:	0.0 feet			Me	dium T	rucks:	84.89	6 4.9%	10.3	
Barrier Type (0-W		0.0			F	leavy T	rucks:	86.5%	6 2.7%	10.8	% 0.74%
Centerline Di		70.0 feet		ŀ		·					
Centerline Dist.		70.0 feet		ŀ	Noise So				eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height		5.0 feet				n Truck		.000			
	ad Flevation:	0.0 feet			Heav	y Truck	s: 8	.006	Grade Ad	ustme	nt: 0.0
Ro	ad Elevation:	0.0 feet		F	Lane Eq	uivalen	t Distar	nce (in	feet)		
	Road Grade:	0.0%		F	,	Auto	s: 45	.826	,		
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 45	.738			
	Right View:	90.0 degree			Heav	y Truck	s: 45	.826			
FHWA Noise Mod	lel Calculation										
VehicleType	REMEL	Traffic Flow	Distan		Finite		Fres		Barrier Att		lerm Atten
Autos:	70.20	2.59		0.4	6	-1.20		-4.86	0.0	000	0.000
Medium Trucks:	81.00	-14.65		0.4	8	-1.20		-5.00	0.0	000	0.000
Heavy Trucks:	85.38	-18.61		0.4	6	-1.20		-5.28	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	tter	nuation)						
VehicleType	Leq Peak Hou	ır Leq Day	Le	q E	vening	Leq	Night		Ldn		CNEL
Autos:	72	.1 1	70.2		68.4		62	.3	71.0	)	71.6
Medium Trucks:	65	.6 6	64.1		57.8		56	.2	64.7	7	64.9
Heavy Trucks:	66	.0 0	64.6		55.6		56	.8	65.2	2	65.3
Vehicle Noise:	73	.7	72.0		69.0		64	.2	72.	7	73.2
Centerline Distan	ce to Noise Co	ontour (in feet)									
					dBA		dBA		60 dBA		55 dBA
			dn:		06	-	29		493		1,062
		CI	IEL:	1	14	2	46		530		1,141

Friday, November 15, 2019

Friday, November 15, 2019

APPENDIX 8.1:

# **ON-SITE OUTDOOR COMMON AREA TRAFFIC NOISE LEVEL CALCULATIONS**



This page intentionally left blank



Scenario: Outdoor Common Areas Road Name: Warner Ave. Lot No: Bldg. A Project Name: The Bowery Job Number: 12282 Analyst: B. Lawson

SITE	SPECIFIC INP	UT DATA		NOISE MODEL INPUTS							
Highway Data				Site Conditions (Hard = 10, Soft = 15)							
Average Daily	Traffic (Adt): 39	,800 vehicles				Autos	: 10				
Peak Hour	<sup>r</sup> Percentage:	10%		Med	lium Truc	ks (2 Axles)	: 10				
Peak H	Hour Volume: 3	,980 vehicles		Hea	vy Truck	s (3+ Axles)	: 10				
Ve	ehicle Speed:	45 mph		Vehicle M	lix						
Near/Far La	ane Distance:	60 feet	-		cleType	Day	Evening	Night Daily			
Site Data						itos: 77.5%	-	9.6% 97.42%			
Ba	rrier Height:	6.0 feet		Me	dium Tru	cks: 84.89	% 4.9%	10.3% 1.84%			
Barrier Type (0-V	-	0.0		Н	leavy Tru	cks: 86.5%	% 2.7%	10.8% 0.74%			
••••	,	110.0 feet	_	Naina Ca	uras Fla	etiono (in f	[a a 4]				
Centerline Dist.		120.0 feet		NOISE SO		vations (in f	eet)				
Barrier Distance	to Observer:	10.0 feet		Madium	Autos:						
Observer Height	(Above Pad):	5.0 feet			n Trucks:		Grada Adiu	stment: 0.0			
-	ad Elevation:	60.0 feet		Heavy	/ Trucks:	8.006	Graue Aujt	Sumerit. 0.0			
Ro	ad Elevation:	0.0 feet		Lane Equ	ivalent D	Distance (in	feet)				
Barr	rier Elevation:	0.0 feet			Autos:	165.747					
	Road Grade:	0.0%		Medium	n Trucks:	165.690					
				Heavy	/ Trucks:	165.691					
FHWA Noise Mod		Traffia Flaur D	intonan	<b>Finita</b> I	Dood	Francel	Dorrior Atto	n Dorm Atton			
VehicleType			istance	Finite F		Fresnel	Barrier Atte				
Autos: Medium Trucks:		4.05	-5.2		0.00	33.64					
		-13.19	-5.2 -5.2		0.00 0.00	34.48 36.21					
Heavy Trucks:	02.14	-17.15	-5.2	1	0.00	30.21	-10.92	-21.924			
Unmitigated Nois	-	-		-							
VehicleType	Leq Peak Hour	Leq Day	•	vening	Leq Ni	-	Ldn	CNEL			
Autos:		66.2		64.5		58.4	67.0	67.6			
Medium Trucks:		57.7		51.3		49.7	58.2	58.4			
Heavy Trucks:	59.7	58.3		49.3		50.5	58.9	59.0			
Vehicle Noise:	69.2	67.4		64.8		59.5	68.1	68.0			
Mitigated Noise L	evels (with Topo	and barrier atte	enuation	1)							
VehicleType	Leq Peak Hour	Leq Day	1	vening	Leq Ni	ight	Ldn	CNEL			
Autos:	49.2	47.3	-	45.6	-	39.5	48.1	48.8			
Medium Trucks:	40.3	38.8		32.4		30.9	39.3	39.			
Heavy Trucks:	40.8	39.4		30.3		31.6	39.9	40.1			
	50.3	48.5		45.9		40.7	49.2	49.			
Vehicle Noise:											
Venicle Noise: Centerline Distan	ce to Noise Con	tour (in feet)	70	dBA	65 dE	BA	60 dBA	55 dBA			

Scenario: Outdoor Common Areas Road Name: Redhill Ave. Lot No: Bldg. B Project Name: The Bowery Job Number: 12282 Analyst: B. Lawson

SITE	SPECIFIC INPU	Γ DATA		NOISE MODEL INPUTS							
Highway Data			,	Site Conditions (Hard = 10, Soft = 15)							
Average Daily	Traffic (Adt): 40,20	00 vehicles				Autos	s: 10				
Peak Hou	r Percentage:	10%		Med	lium Trucl	ks (2 Axles	): 10				
Peak I	Hour Volume: 4,02	20 vehicles		Hea	wy Trucks	s (3+ Axles	): 10				
Ve	ehicle Speed:	50 mph	-	Vehicle M	lix						
Near/Far La	ane Distance: 6	60 feet	-		cleType	Day	Evening	Night Da	ailv		
Site Data				Vonic		tos: 77.5	-	9.6% 97.4			
Ba	arrier Height:	6.0 feet		Me	dium Truc	cks: 84.8	% 4.9%	10.3% 1.8	84%		
Barrier Type (0-V	v	0.0		Н	leavy Truc	cks: 86.5	% 2.7%	10.8% 0.1	74%		
		0.0 feet	_								
Centerline Dist.		0.0 feet		Noise Sol		ations (in	feet)				
Barrier Distance		0.0 feet			Autos:	2.000					
Observer Height		5.0 feet			n Trucks:	4.000					
-	, ,	0.0 feet		Heavy	/ Trucks:	8.006	Grade Adj	ustment: 0.0			
		0.0 feet		Lane Equ	ivalent D	istance (ir	feet)				
		0.0 feet	-		Autos:	488.812					
		0.0%		Medium	n Trucks:	488.798					
					/ Trucks:						
				,							
FHWA Noise Mod	lel Calculations										
VehicleType		ffic Flow Dis	stance	Finite F	Road	Fresnel	Barrier Atte	en Berm Att	ten		
Autos:	71.12	3.63	-9.9	7	0.00	44.39	9 -19.0	88 -22	.088		
Medium Trucks:	78.79	-13.60	-9.9	7	0.00	44.65	5 -19.0	93 -22	.093		
Heavy Trucks:	83.02	-17.56	-9.9	7	0.00	45.17	-19.1	03 -22	.103		
Unmitigated Nois	e Levels (without	Topo and barri	ier atten	uation)							
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq Nig	ght	Ldn	CNEL			
Autos:	64.8	62.9		61.1		55.1	63.7		64.3		
Medium Trucks:	55.2	53.7		47.3		45.8	54.3		54.		
Heavy Trucks:	55.5	54.1		45.0		46.3	54.6		54.8		
Vehicle Noise:	65.7	63.9		61.4		56.0	64.6		65.´		
Mitigated Noise L	evels (with Topo a	nd barrier atte	nuation	1)							
VehicleType	Leq Peak Hour	Leq Day		vening	Leq Nig	ght	Ldn	CNEL			
Autos:	45.7	43.8		42.0		36.0	44.6		45.2		
Medium Trucks:	36.1	34.6		28.3		26.7	35.2		35.4		
Heavy Trucks:	36.4	35.0		25.9		27.2	35.5	ı	35.		
Vehicle Noise:	46.6	44.8		42.3		36.9	45.5	1	46.		
								1			
Centerline Distan	ce to Noise Conto	ur (in feet)	70 (	dBA	65 dB	A	60 dBA	55 dBA			

Scenario: Outdoor Common Areas Road Name: Redhill Ave. Lot No: Bldg. C Project Name: The Bowery Job Number: 12282 Analyst: B. Lawson

SITE	SPECIFIC INPU	T DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)							
Highway Data											
Average Daily	r Traffic (Adt): 40,20	00 vehicles				Autos	s: 10				
Peak Hou	r Percentage:	10%		Mea	lium Trucl	ks (2 Axles	): 10				
Peak l	Hour Volume: 4,02	20 vehicles		Hea	wy Trucks	s (3+ Axles	): 10				
Ve	ehicle Speed:	50 mph		Vehicle M	lix						
Near/Far La	ane Distance:	60 feet			cleType	Day	Evening	Night	Daily		
Site Data				Vonic		tos: 77.5	-	9.6%			
Ba	arrier Height:	6.0 feet		Me	dium Truc			10.3%	1.84%		
Barrier Type (0-V	•	0.0		Н	leavy Truc			10.8%	0.74%		
••••		0.0 feet									
Centerline Dist.		0.0 feet	1	Noise Sol		ations (in	feet)				
Barrier Distance		0.0 feet			Autos:	2.000					
Observer Height		5.0 feet			n Trucks:	4.000					
-	,	0.0 feet		Heavy	/ Trucks:	8.006	Grade Adj	ustment:	0.0		
		0.0 feet		Lane Equ	ivalent D	istance (in	feet)				
		0.0 feet			Autos:	609.037					
		0.0%		Medium	n Trucks:	609.026					
					/ Trucks:						
				, , ,							
FHWA Noise Mod	lel Calculations										
VehicleType	REMEL Tra	ffic Flow Dis	stance	Finite F	Road	Fresnel	Barrier Atte	en Berl	m Atten		
Autos.	; 71.12	3.63	-10.9	3	0.00	45.32	-19.1	06	-22.106		
Medium Trucks.	: 78.79	-13.60	-10.9	3	0.00	45.53	3 -19.1	11	-22.11		
Heavy Trucks.	83.02	-17.56	-10.9	3	0.00	45.94	4 -19.1	19	-22.11		
Unmitigated Nois	e Levels (without	Topo and barri	er atten	uation)							
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq Nig	ght	Ldn	CN	NEL		
Autos.	63.8	61.9		60.2		54.1	62.7	,	63.3		
Medium Trucks.	54.3	52.8		46.4		44.8	53.3		53.		
Heavy Trucks.	54.5	53.1		44.1		45.3	53.7		53.8		
Vehicle Noise.	64.7	62.9		60.4		55.1	63.7		64.2		
Mitigated Noise L	evels (with Topo a	nd barrier atte	nuation	1)							
VehicleType	Leq Peak Hour	Leq Day		vening	Leq Nig	ght	Ldn	CN	VEL		
Autos.	44.7	42.8		41.1		35.0	43.6	i	44.2		
Medium Trucks.	35.2	33.6		27.3		25.7	34.2	2	34.4		
Heavy Trucks.	35.4	34.0		25.0		26.2	34.6	i	34.		
Vehicle Noise.	45.6	43.8		41.3		36.0	44.6	;	45.		
venicie noise.											
	ce to Noise Conto	ur (in feet)	70 (	dBA	65 dB	A	60 dBA	55	dBA		

Scenario: Outdoor Common Areas Road Name: Warner Ave. Lot No: Bldg. D Project Name: The Bowery Job Number: 12282 Analyst: B. Lawson

	_										
SITE Highway Data	SPECIFIC INP	UT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)							
Average Daily	Traffic (Adt): 39	,800 vehicles				Autos	s: 10				
Peak Hour	Percentage:	10%		Med	dium Truck	ks (2 Axles)	) <i>:</i> 10				
Peak H	lour Volume: 3	,980 vehicles		Hea	avy Trucks	s (3+ Axles,	): 10				
Ve	hicle Speed:	45 mph	-	Vehicle N	lix						
Near/Far La	ne Distance:	60 feet	_		cleType	Day	Evening	Night Dai			
Site Data				Vern		tos: 77.5	-	9.6% 97.4			
Ba	rrier Height:	6.0 feet		Me	edium Truc	ks: 84.8	% 4.9%	10.3% 1.8			
Barrier Type (0-V	-	0.0		H	leavy Truc	ks: 86.5	% 2.7%	10.8% 0.7			
••••	,	570.0 feet	_	No ' 0 -			(				
Centerline Dist.		580.0 feet		Noise So		ations (in	teet)				
Barrier Distance		10.0 feet			Autos:	2.000					
Observer Height		5.0 feet			n Trucks:	4.000	Oursels Ast				
-	ad Elevation:	0.0 feet		Heavy	y Trucks:	8.006	Grade Adj	ustment: 0.0			
	ad Elevation:	0.0 feet		Lane Equ	ivalent D	istance (in	feet)				
	ier Elevation:	0.0 feet			Autos:	579.274					
	Road Grade:	0.0%		Mediun	n Trucks:	579.263					
				Heav	y Trucks:	579.263					
FHWA Noise Mod		Traffic Flow Di	istance	Finite	Pood	Fresnel	Barrier Atte	en Berm Atte			
VehicleType Autos:		4.05	-10.7		0.00	0.05					
Medium Trucks:		-13.19	-10.7		0.00	0.05					
Heavy Trucks:		-17.15	-10.7		0.00	0.00					
-					0.00	0.04	-0.4	-0			
Unmitigated Nois				-							
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq Nig	-	Ldn	CNEL			
Autos:		60.8		59.0		53.0	61.6				
Medium Trucks:				45.9		44.3	52.8				
Heavy Trucks:				43.8		45.1	53.4				
Vehicle Noise:				59.3		54.1	62.7	6			
Mitigated Noise L	· · ·			<i>,</i>				r			
VehicleType	Leq Peak Hour	Leq Day		vening	Leq Nig	ght	Ldn	CNEL			
Autos:				53.5		47.5	56.1	5			
Medium Trucks:				40.4		38.8	47.3				
Heavy Trucks:		47.5		38.4		39.7	48.0	4			
Vabiala Naiaa	58.2	56.4		53.9		48.6	57.2	5			
Vehicle Noise:											
Centerline Distan	ce to Noise Con	tour (in feet)	70	dBA	65 dB	A	60 dBA	55 dBA			

APPENDIX 8.2:

# **ON-SITE BUILDING FAÇADE TRAFFIC NOISE LEVEL CALCULATIONS**



This page intentionally left blank



Scenario: First Floor With Wall Road Name: Warner Ave. Lot No: Bldg. A

SITE	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS								
Highway Data				Si	Site Conditions (Hard = 10, Soft = 15)							
Average Daily	Traffic (Adt):	39,800 vehicles	6					Autos:	10			
Peak Hour	Percentage:	10%			Me	dium Tr	ucks (2 )	Axles):	10			
Peak H	lour Volume:	3,980 vehicles	6		Hea	avy Tru	cks (3+ )	Axles):	10			
Ve	hicle Speed:	45 mph		Ve	ehicle N	lix						
Near/Far La	ne Distance:	60 feet				cleType	9	Day	Evening	Night	Daily	
Site Data							Autos:	77.5%	-		5 97.42%	
	rrier Height:	0.0 feet			Me	edium T		84.8%		10.3%		
Barrier Type (0-W	-	0.0 leet			F	leavy T	rucks:	86.5%	5 2.7%	10.8%	6 0.74%	
Centerline Di		65.0 feet				····· <b>·</b>		- /: f	4)			
Centerline Dist.		65.0 feet		/\(	oise So		levation	•	et)			
Barrier Distance	to Observer:	0.0 feet			N //:	Auto		2.000				
Observer Height (	Above Pad):	5.0 feet			Mediur			4.000 3.006	Grade Ad	liustmon	+· 0 0	
Pa	ad Elevation:	0.0 feet			neav	y Truck	S. (	5.006	Graue Au	justinen	. 0.0	
Roa	ad Elevation:	0.0 feet		La	ne Equ	ıivalen	t Distan	ce (in i	feet)			
Barn	er Elevation:	0.0 feet				Auto	s: 57.	741				
	Road Grade:	0.0%			Mediur	n Truck	s: 57.	671				
					Heav	y Truck	s: 57.	741				
FHWA Noise Mod	el Calculation	\$										
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresi	nel	Barrier At	en Be	rm Atten	
Autos:	69.34	4.05		-0.69		0.00		-4.85	0.	000	0.00	
Medium Trucks:	77.62	-13.19		-0.69		0.00		-5.00	0.	000	0.00	
Heavy Trucks:	82.14	-17.15	-	-0.69		0.00		-5.30	0.	000	0.00	
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenu	ation)							
VehicleType	Leq Peak Hou	-		q Eve	,	Leq	Night		Ldn	C	NEL	
Autos:	72	.7	70.8		69.0		63.0	)	71.	6	72.2	
Medium Trucks:	63	.7	62.2		55.9		54.3	3	62.	8	63.	
Heavy Trucks:	64	.3	62.9		53.8		55.	1	63.	4	63.	
Vehicle Noise:	73	.7	71.9		69.4		64.	1	72.	7	73.2	
Mitigated Noise Lo	evels (with To	po and barrier	r attenua	tion)								
VehicleType	Leq Peak Hou	r Leq Day	Le	q Eve	ening	Leq	Night		Ldn	C	NEL	
Autos:	72	.7	70.8		69.0		63.0	)	71.	6	72.	
Medium Trucks:	63	.7	62.2		55.9		54.3	3	62.	8	63.0	
Heavy Trucks:	64	.3	62.9		53.8		55.1	1	63.	4	63.6	
Vehicle Noise:	73		71.9					1	72.		73.2	

Scenario: First Floor With Wall Road Name: Warner Ave. Lot No: Bldg. D

SITE	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS							
Highway Data				Site Conditions (Hard = 10, Soft = 15)							
Average Dailv	Traffic (Adt): 3	9.800 vehicles					Autos:	10			
• •	Percentage:	10%		Me	dium Tr	ucks (2 .					
	-	3,980 vehicles				cks (3+ )	,				
	hicle Speed:	45 mph		Vehicle I	-	•	,				
	ne Distance:	60 feet				_	Dav	Evening	Niaht	Daily	
Site Data				Ven	icleType	+ Autos:	Day 77.5%	Evening	Night	Daily 97.429	
					edium T		84.8%		9.0 <i>%</i> 10.3%		
	rrier Height:	0.0 feet			Heavy T		86.5%		10.3 %		
Barrier Type (0-W	,	0.0		,	ieavy i	rucks.	00.37	2.170	10.076	0.74	
	st. to Barrier:	65.0 feet		Noise Sc	ource E	levation	s (in fe	et)			
Centerline Dist.		65.0 feet			Auto	s: 2	2.000				
Barrier Distance		0.0 feet		Mediui	m Truck	s: 4	4.000				
Observer Height	(Above Pad): ad Elevation:	5.0 feet		Heav	y Truck	s: a	3.006	Grade Ad	justment.	: 0.0	
	ad Elevation. ad Elevation:	0.0 feet		Lane Eq	uivələn	t Distan	co (in i	foot)			
	ier Elevation:	0.0 feet 0.0 feet		Lanc Ly	Auto		.741				
	Road Grade:	0.0 Teet 0.0%		Modiu	m Truck		.671				
	Noau Graue.	0.0 %			y Truck		.741				
				11001	y muon	0. 01	7 4 1				
FHWA Noise Mod	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten	
Autos:	69.34	4.05	-0	.69	0.00		-4.85	0.0	000	0.00	
Medium Trucks:	77.62	-13.19	-0	.69	0.00		-5.00	0.0	000	0.00	
Heavy Trucks:	82.14	-17.15	-0	.69	0.00		-5.30	0.0	000	0.00	
Unmitigated Nois	e Levels (with	out Topo and ba	arrier atte	enuation)							
VehicleType	Leq Peak Hou	-		Evening	Leq	Night		Ldn	Cl	NEL	
Autos:	72.	7 70	).8	69.0		63.0	C	71.6	5	72	
Medium Trucks:	63.	7 62	2.2	55.9		54.3	3	62.8	3	63	
Heavy Trucks:	64.	3 62	2.9	53.8		55.	1	63.4	1	63	
Vehicle Noise:	73.	7 71	.9	69.4		64.	1	72.7	7	73	
venicie noise.		a and harriar a	ttenuatio	<i>ח</i> ר)							
	ovols (with To		uchadi	,		Night		Ldn		NEL	
Mitigated Noise L	• •		-	Evenina	lea	1 1 1 1 1 1					
<b>Mitigated Noise L</b> VehicleType	Leq Peak Hou	r Leq Day	Leq	Evening 69.0	Leq	•	า				
<b>Mitigated Noise L</b> VehicleType Autos:	Leq Peak Hou 72	r Leq Day 7 70	<i>Leq</i> ).8	69.0	Leq	63.0		71.6	6	72	
<b>Mitigated Noise L</b> VehicleType	Leq Peak Hou 72. 63.	r Leq Day 7 70 7 62	Leq 0.8 2.2	-	Leq	•	3		5 3	72. 63. 63.	

Scenario: First Floor With Wall Road Name: Warner Ave. Lot No: Retail

SITE	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS							
Highway Data				Site Conditions (Hard = 10, Soft = 15)							
Average Daily	Traffic (Adt):	39,800 vehicles	3			Autos	: 10				
	Percentage:	10%			Medium Tru	ıcks (2 Axles	): 10				
Peak H	lour Volume:	3,980 vehicles	6		Heavy Truc	ks (3+ Axles)	): 10				
Ve	hicle Speed:	45 mph		Vehic	o Mix						
Near/Far La	ne Distance:	60 feet			ehicleType	Day	Evening	Night	Daily		
Site Data						Autos: 77.5	-	-	97.42%		
	wier Usiaht.	0.0 feet			Medium Ti			10.3%	1.84%		
ва Barrier Type (0-W	rrier Height:	0.0 leet 0.0			Heavy Ti			10.8%	0.74%		
Centerline Di	,	66.0 feet			-						
Centerline Dist.		66.0 feet		Noise		evations (in	feet)				
Barrier Distance		0.0 feet			Autos						
Observer Height (		5.0 feet			lium Trucks		0 1 1 "				
	ad Elevation:	0.0 feet		He	avy Trucks	s: 8.006	Grade Adju	istment:	0.0		
Roa	ad Elevation:	0.0 feet		Lane	Equivalent	Distance (in	feet)				
Barn	ier Elevation:	0.0 feet			Autos	s: 58.864					
	Road Grade:	0.0%		Med	lium Trucks	s: 58.796					
				He	avy Trucks	58.865					
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distand	e Fin	ite Road	Fresnel	Barrier Atte	n Beri	m Atten		
Autos:	69.34	4.05	-	0.78	0.00	-4.86	0.00	00	0.00		
Medium Trucks:	77.62	-13.19		0.77	0.00	-5.00			0.00		
Heavy Trucks:	82.14	-17.15	-	0.78	0.00	-5.30	0.00	00	0.00		
Unmitigated Noise			barrier at	tenuatio	n)		T				
VehicleType	Leq Peak Hou			q Evening	-	Night	Ldn	CN	IEL		
Autos:	72		70.7	68		62.9	71.5		72.		
Medium Trucks:	63		62.2	55		54.2	62.7		62.9		
Heavy Trucks:	64	.2	62.8	53	5.8	55.0	63.4		63.		
Vehicle Noise:	73	5.7	71.9	69	0.3	64.0	72.6		73.1		
Mitigated Noise L		-		,	1		1				
VehicleType	Leq Peak Hou			q Evening		Night	Ldn	CN	IEL		
Autos:	72		70.7	68		62.9	71.5		72.		
Medium Trucks:	63		62.2	55		54.2	62.7		62.9		
Heavy Trucks:	64		62.8	53		55.0	63.4		63.5		
Vehicle Noise:	73		71.9	69	-	64.0	72.6		73.1		

Scenario: First Floor With Wall Road Name: Redhill Ave. Lot No: Retail

SITE	SPECIFIC INP	UT DATA		NOISE MODEL INPUTS							
Highway Data			,	Site Conditions (Hard = 10, Soft = 15)							
Average Daily	Traffic (Adt): 40,	200 vehicles				Autos	: 10				
Peak Hour	Percentage:	10%		Mee	dium Truc	ks (2 Axles)	): 10				
Peak H	lour Volume: 4,	020 vehicles		Hea	avy Truck	s (3+ Axles)	): 10				
Ve	hicle Speed:	50 mph	_	Vehicle N	lix						
Near/Far La	ne Distance:	60 feet	_		cleType	Day	Evening	Night	Daily		
Site Data						itos: 77.5	-	-	97.42		
Ba	rrier Height:	0.0 feet		Me	edium Tru			10.3%	1.849		
Barrier Type (0-W	-	0.0		F	leavy Tru	cks: 86.5°	% 2.7%	10.8%	0.74		
Centerline Dis	,	91.0 feet	_	No. 10 0 0			( 1)				
Centerline Dist.		91.0 feet		Noise So		vations (in	reet)				
Barrier Distance		0.0 feet			Autos:						
Observer Height (		5.0 feet			n Trucks:		Crada Adi	intmont	0.0		
• •	ad Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Adjı	JSIMENI.	0.0		
Roa	ad Elevation:	0.0 feet		Lane Equ	livalent 🛛	Distance (in	feet)				
Barri	ier Elevation:	0.0 feet			Autos:	85.965					
	Road Grade:	0.0%		Mediur	n Trucks:	85.919					
				Heav	y Trucks:	85.965					
FHWA Noise Mode	ol Calculations										
VehicleType		raffic Flow Di	istance	Finite	Road	Fresnel	Barrier Atte	n Ber	m Atten		
Autos:	71.12	3.63	-2.4		0.00	-4.87			0.00		
Medium Trucks:	78.79	-13.60	-2.4	2	0.00	-4.97	0.0	00	0.00		
Heavy Trucks:	83.02	-17.56	-2.4	2	0.00	-5.19	0.0	00	0.00		
Unmitigated Noise	e Levels (withou	t Topo and barr	ier atten	uation)							
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq N	ight	Ldn	Cl	VEL		
Autos:	72.3	70.4		68.7		62.6	71.2		71		
Medium Trucks:	62.8	61.3		54.9		53.4	61.8		62		
Heavy Trucks:	63.0	61.6		52.6		53.8	62.2		62		
Vehicle Noise:	73.2	71.4		68.9		63.6	72.2		72		
Mitigated Noise Le	evels (with Topo	and barrier atte	enuation	<i>I</i> )							
VehicleType	Leq Peak Hour	Leq Day	Leq E	vening	Leq N	ight	Ldn	Cl	VEL		
Autos:	72.3	70.4		68.7		62.6	71.2		71		
Medium Trucks:	62.8	61.3		54.9		53.4	61.8		62		
		04.0		<b>50 0</b>		E2 0	60.0		60		
Heavy Trucks:	63.0	61.6		52.6		53.8	62.2		62.		

Scenario: Second Floor With Wall Road Name: Warner Ave. Lot No: Bldg. A

LOUT	io. Diug. A				/	inalysi. D. La	w3011				
SITE	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS							
Highway Data				Site Con	ditions	(Hard = 10, S	oft = 15)				
Average Daily	Traffic (Adt):	39,800 vehicles				Autos	: 10				
Peak Hour	Percentage:	10%		Me	dium Tru	ucks (2 Axles)	: 10				
Peak F	lour Volume:	3,980 vehicles		He	avy Truc	cks (3+ Axles)	: 10				
Ve	hicle Speed:	45 mph		Vehicle I	Mix						
Near/Far La	ne Distance:	60 feet			icleType	Day	Evening	Night	Daily		
Site Data						Autos: 77.59	-	9.6%			
	rrier Height:	0.0 feet		M	edium Ti			10.3%			
Barrier Type (0-W	-	0.0 Teet		ŀ	leavy T	rucks: 86.59	% 2.7%	10.8%	0.749		
Centerline Di		65.0 feet									
Centerline Dist.		65.0 feet		Noise Sc		evations (in f	reet)				
Barrier Distance		0.0 feet			Autos						
Observer Height	(Above Pad):	14.0 feet			n Truck		Crista Adi				
	ad Elevation:	0.0 feet		Heav	y Truck	s: 8.006	Grade Adju	istment.	0.0		
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in	feet)				
Barr	ier Elevation:	0.0 feet			Autos	s: 58.898					
	Road Grade:	0.0%		Mediur	n Truck	s: 58.523					
				Heav	y Truck	s: 57.974					
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	n Ber	m Atten		
Autos:	69.34	4.05	-(	).78	0.00	-12.65	0.00	00	0.00		
Medium Trucks:	77.62	-13.19	-0	).75	0.00	-13.07	0.00	00	0.00		
Heavy Trucks:	82.14	-17.15	-0	).71	0.00	-13.91	0.00	00	0.00		
Unmitigated Noise	e Levels (with	out Topo and b									
VehicleType	Leq Peak Hou		-	Evening	Leq	Night	Ldn	Cl	VEL		
Autos:	72		0.7	68.9		62.9	71.5		72.		
Medium Trucks:	63		2.2	55.8		54.3	62.7		63.		
Heavy Trucks:	64	.3 6	2.9	53.8		55.1	63.4		63.		
Vehicle Noise:	73	8.7 7	1.9	69.3		64.0	72.6		73.		
Mitigated Noise L	•	•	attenuati	on)							
VehicleType	Leq Peak Hou			Evening	Leq	Night	Ldn	Cl	VEL		
Autos:			0.7	68.9		62.9	71.5		72.		
Medium Trucks:	63		2.2	55.8		54.3	62.7		63.		
Heavy Trucks:			2.9	53.8		55.1	63.4		63.		
Vehicle Noise:	73		1.9	69.3		64.0	72.6		73.		

Scenario: Second Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. A

SITE	SPECIFIC IN	NPUT DATA				N	OISE	MODE	L INPUT	S		
Highway Data				Si	te Cona	litions (	'Hard =	: 10, So	oft = 15)			
Average Daily	Traffic (Adt):	40,200 vehicle	s					Autos:	10			
Peak Hour	r Percentage:	10%			Med	lium Tru	cks (2	Axles):	10			
Peak F	Hour Volume:	4,020 vehicles	S		Hea	vy Truc	ks (3+ .	Axles):	10			
Ve	ehicle Speed:	50 mph		Ve	ehicle M	lix						
Near/Far La	ane Distance:	60 feet				leType		Day	Evening	Night	Daily	
Site Data					, on the		utos:	77.5%	_	9.6%	-	
	nrier Height:	0.0 feet			Me	dium Tr		84.8%		10.3%		
ва Barrier Type (0-И	•	0.0 Teel 0.0				eavy Tr		86.5%		10.8%		
	ist. to Barrier:	138.0 feet				-						
Centerline Dist.		138.0 feet		NO	oise Sol				eet)			
Barrier Distance		0.0 feet				Autos		2.000				
Observer Height		14.0 feet			Medium			4.000	<u> </u>			
•	Pad Elevation:	0.0 feet			Heavy	rrucks	: 8	3.006	Grade Ad	lustment	: 0.0	
	ad Elevation:	0.0 feet		La	ane Equ	ivalent	Distan	ce (in	n feet)			
	rier Elevation:	0.0 feet				Autos	: 135	233	-			
	Road Grade:	0.0%			Medium	n Trucks	: 135.	070				
					Heavy	/ Trucks						
FHWA Noise Mod												
VehicleType	REMEL	Traffic Flow	Distan	се	Finite F	Road	Fresi	nel	Barrier Atte	en Ber	m Atten	
Autos:	71.12	3.63		-4.39		0 00						
						0.00		13.20	0.0			
Medium Trucks:				-4.38		0.00	-	13.40	0.0	000	0.00	
Medium Trucks: Heavy Trucks:				-4.38 -4.38			-		0.0		0.00 0.00 0.00	
	83.02	-17.56		-4.38	ation)	0.00	-	13.40	0.0	000	0.00	
Heavy Trucks:	83.02	-17.56 out Topo and	barrier a	-4.38		0.00	-	13.40	0.0	000	0.00	
Heavy Trucks: Unmitigated Nois	83.02 <b>e Levels (with</b> Leq Peak Hou	-17.56 <b>out Topo and</b> ur Leq Day	barrier a	-4.38 <b>ttenu</b> a		0.00 0.00	-	13.40 13.80	0.0 0.0	000 000 <i>Cl</i>	0.00 0.00 VEL	
Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	83.02 e Levels (with Leq Peak Hou 70	-17.56 <b>out Topo and</b> ur Leq Day ).4	<b>barrier a</b> ⁄ Le	-4.38 <b>ttenu</b> a	ening	0.00 0.00	Night	-13.40 -13.80	0.0 0.0 <i>Ldn</i>	000 000 C/	0.00 0.00 <u>VEL</u> 69.	
Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos:	e Levels (with Leq Peak Hou 70	-17.56 out Topo and ur Leq Day 0.4 0.8	<i>barrier a</i> ⁄ Le 68.5	-4.38 <b>ttenu</b> a	ening 66.7	0.00 0.00		-13.40 -13.80 	0.0 0.0 <i>Ldn</i> 69.3	000 000 <i>Cl</i> 3	0.00	
Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos: Medium Trucks:	83.02 e Levels (with Leq Peak Hou 70 60	-17.56 out Topo and ur Leq Day ).4 ).8 .1	<i>barrier a</i> ⁄ <i>Le</i> 68.5 59.3	-4.38 <b>ttenu</b> a	ening 66.7 52.9	0.00 0.00	Night 60.0 51.4	-13.40 -13.80 	0.0 0.0 <i>Ldn</i> 69.3 59.9	000 000 <i>Cl</i> 3 2	0.00 0.00 <u>VEL</u> 69. 60. 60.	
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	83.02 e Levels (with Leq Peak Hou 70 60 61 71	-17.56 out Topo and ur Leq Day 0.4 0.8 .1 .3	<i>barrier a</i> / <i>Le</i> 68.5 59.3 59.7 69.4	-4.38 ttenua eq Eve	ening 66.7 52.9 50.6	0.00 0.00		-13.40 -13.80 	0.0 0.0 <i>Ldn</i> 69.3 59.9 60.2	000 000 <i>Cl</i> 3 2	0.00 0.00 <u>VEL</u> 69. 60. 60.	
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L	83.02 e Levels (with Leq Peak Hou 60 61 71 evels (with To	-17.56 out Topo and ur Leq Day 0.4 0.8 .1 .3 po and barrie	<i>barrier a</i> / <i>Le</i> 68.5 59.3 59.7 69.4 <i>r attenua</i>	-4.38 ttenua eq Eve tion)	ening 66.7 52.9 50.6 67.0	0.00 0.00	Night 60.1 51.4 51.1 61.1	-13.40 -13.80 	0.0 0.0 <i>Ldn</i> 69.3 59.9 60.2 70.2	000 000 <i>Cl</i> 3 2 2	0.00 0.00 VEL 69. 60. 60. 70.	
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	83.02 e Levels (with Leq Peak Hou 60 61 71 evels (with To Leq Peak Hou	-17.56 out Topo and ur Leq Day 0.4 0.8 1.1 1.3 po and barrie ur Leq Day	<i>barrier a</i> / <i>Le</i> 68.5 59.3 59.7 69.4 <i>r attenua</i>	-4.38 ttenua eq Eve	ening 66.7 52.9 50.6 67.0	0.00 0.00	Night 60.1 51.4 51.1 61.1	13.40 13.80 5 6 4 9 6	0.0 0.0 <i>Ldn</i> 69.3 59.9 60.2 70.2 <i>Ldn</i>	000 000 <i>Cl</i> 3 2 2 2 <i>Cl</i>	0.00 0.00 VEL 69. 60. 60. 70. VEL	
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise L VehicleType	83.02 e Levels (with Leq Peak Hou 60 61 71 evels (with To Leq Peak Hou 70	-17.56 out Topo and ur Leq Day 0.4 0.8 .1 .3 opo and barrier ur Leq Day 0.4	<i>barrier a</i> / Le 68.5 59.3 59.7 69.4 <i>r attenua</i> / Le 68.5	-4.38 ttenua eq Eve tion)	ening 66.7 52.9 50.6 67.0 ening 66.7	0.00 0.00	Vight 60.0 51.0 61.0 Vight 60.0	13.40 13.80 5 4 9 6 5	0.0 0.0 <i>Ldn</i> 69.3 59.9 60.2 70.2 <i>Ldn</i> 69.3	000 000 2 2 2 2 3	0.00 0.00 VEL 69. 60. 70. VEL 69.	
Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L VehicleType Autos:	83.02 e Levels (with Leq Peak Hou 60 61 71 evels (with To Leq Peak Hou 70 60	-17.56 out Topo and ur Leq Day 0.4 0.8 1.1 1.3 po and barrier ur Leq Day 0.4 0.8	<i>barrier a</i> / Le 68.5 59.3 59.7 69.4 <i>r attenua</i> / Le	-4.38 ttenua eq Eve tion)	ening 66.7 52.9 50.6 67.0 ening	0.00 0.00		13.40 13.80 5 4 9 6 5 4	0.0 0.0 <i>Ldn</i> 69.3 59.9 60.2 70.2 <i>Ldn</i>	000 000 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.00 0.00 <u>VEL</u> 69. 60. 60. 70.	

Scenario: Second Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. B

LOUN	VO. DIUY. D				7	naiysi. D. Lav	103011		
SITE	SPECIFIC IN	NPUT DATA			Ν	OISE MODE	EL INPUTS	6	
Highway Data				Site Con	ditions	(Hard = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	40,200 vehicle	s			Autos	: 10		
Peak Hour	Percentage:	10%		Ме	dium Tru	icks (2 Axles)	: 10		
Peak F	our Volume:	4,020 vehicle	s	He	avy Truc	ks (3+ Axles)	: 10		
Ve	hicle Speed:	50 mph		Vehicle	Mix				
Near/Far La	ne Distance:	60 feet			icleType	Day	Evening	Night	Daily
Site Data				VON		utos: 77.5%	-	9.6%	
	rriar Uniabti	0.0 foot		M	, edium Tr			10.3%	1.849
ва Barrier Type (0-W	rrier Height:	<b>0.0 feet</b> 0.0			Heavy Tr			10.8%	0.74
Centerline Di	,	223.0 feet			-				
Centerline Dist.		223.0 feet		Noise So		evations (in f	feet)		
Barrier Distance		0.0 feet			Autos				
Observer Height		14.0 feet			m Trucks		<u> </u>		
	ad Elevation:	0.0 feet		Heav	y Trucks	s: 8.006	Grade Adj	ustment.	0.0
	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in	feet)		
Barr	ier Elevation:	0.0 feet			Autos	s: 221.298			
	Road Grade:	0.0%		Mediu	m Trucks	s: 221.199			
				Heav	y Trucks	s: 221.054			
FHWA Noise Mod VehicleType	el Calculation REMEL	s Traffic Flow	Distand	co Einito	Road	Fresnel	Barrier Atte	an Bor	m Atten
Autos:				·6.53	0.00	-13.39			0.00
Medium Trucks:				·6.53	0.00	-13.51			0.00
Heavy Trucks:				6.52	0.00	-13.76			0.00
-					0.00	10.10	0.0		0.00
Unmitigated Nois				,					
VehicleType	Leq Peak Ho			q Evening	Leq I	-	Ldn	_	VEL
Autos:		3.2	66.3	64.6		58.5	67.1		67.
Medium Trucks:		3.7	57.2	50.8		49.2	57.7		57.
Heavy Trucks:		3.9	57.5	48.5		49.7	58.1		58.
Vehicle Noise:	65	9.1	67.3	64.8		59.5	68.1		68.
Mitigated Noise L		-	I	tion)				-	
VehicleType	Leq Peak Ho			q Evening	Leq I	Vight	Ldn		VEL
Autos:		3.2	66.3	64.6		58.5	67.1		67.
Medium Trucks:		3.7	57.2	50.8		49.2	57.7		57.
Heavy Trucks:	58	3.9	57.5	48.5		49.7	58.1		58.
Vehicle Noise:		9.1		64.8		59.5	68.1		68.

Scenario: Second Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. C

LUIN	VO. Diug. C					niaiysi. D. La	w5011		
SITE	SPECIFIC IN	IPUT DATA			Ν	IOISE MOD	EL INPUT	S	
Highway Data				Site Cor	nditions	(Hard = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	40,200 vehicle	5			Autos	: 10		
Peak Hour	Percentage:	10%		Me	edium Tr	ucks (2 Axles,	): 10		
Peak F	our Volume:	4,020 vehicles	S	He	eavy Tru	cks (3+ Axles)	): 10		
Ve	hicle Speed:	50 mph		Vehicle	Mix				
Near/Far La	ne Distance:	60 feet			nicleType	e Day	Evening	Night	Daily
Site Data						Autos: 77.5	-	9.6%	
	rrier Height:	0.0 feet		M	Iedium T			10.3%	
ва Barrier Type (0-W	•	0.0 Teet			Heavy T			10.8%	
Centerline Di	,	100.0 feet			-		•		
Centerline Dist.		100.0 feet		Noise S		levations (in	feet)		
Barrier Distance		0.0 feet			Auto				
Observer Height		14.0 feet			m Truck		Orreade Ast		
-	ad Elevation:	0.0 feet		Hea	vy Truck	s: 8.006	Grade Ad	justment.	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalen	t Distance (in	feet)		
Barr	ier Elevation:	0.0 feet			Auto	s: 96.146			
	Road Grade:	0.0%		Mediu	m Truck	s: 95.917			
				Hea	vy Truck	s: 95.582			
FHWA Noise Mod	el Calculation	S							
VehicleType	REMEL	Traffic Flow	Distand	ce Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	71.12	3.63	-	2.91	0.00	-13.02	0.0	000	0.00
Medium Trucks:	78.79	-13.60	-	2.90	0.00	-13.29	0.0	000	0.00
Heavy Trucks:	83.02	-17.56	-	2.88	0.00	-13.84	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and	barrier at	ttenuation)					
VehicleType	Leq Peak Hou	ur Leq Day	' Le	q Evening	Leq	Night	Ldn	CI	VEL
Autos:		.8	69.9	68.2		62.1	70.7	7	71
Medium Trucks:	62	2.3	60.8	54.4		52.9	61.3	3	61
Heavy Trucks:	62	2.6	61.2	52.1		53.4	61.7	7	61
Vehicle Noise:	72	2.7	70.9	68.5		63.1	71.7	7	72
Mitigated Noise L	evels (with To	po and barrie	r attenua	tion)					
VehicleType	Leq Peak Hou	ur Leq Day	' Le	q Evening	Leq	Night	Ldn	CI	VEL
Autos:			69.9	68.2		62.1	70.7		71
Medium Trucks:			60.8	54.4		52.9	61.3		61
Heavy Trucks:	62	2.6	61.2	52.1		53.4	61.7	7	61.

Scenario: Second Floor With Wall Road Name: Warner Ave. Lot No: Bldg. D

LOUT	vo. biug. D				7	nalysi. D. La	w3011				
SITE	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS							
Highway Data				Site Con	ditions	<i>(Hard</i> = 10, S	Soft = 15)				
Average Daily	Traffic (Adt):	39,800 vehicle	5			Autos	s: 10				
Peak Hour	Percentage:	10%		Ме	dium Tru	icks (2 Axles,	): 10				
Peak H	our Volume:	3,980 vehicles	S	He	avy Truc	ks (3+ Axles)	): 10				
Ve	hicle Speed:	45 mph		Vehicle	Mix						
Near/Far La	ne Distance:	60 feet			icleType	Day	Evening	Night	Daily		
Site Data						utos: 77.5	-	-	97.429		
	rrier Height:	0.0 feet		<i>M</i>	edium Tı			10.3%	1.84%		
ва Barrier Type (0-И	•	0.0 Teel 0.0			Heavy Ti			10.8%	0.74%		
	ist. to Barrier:	65.0 feet			-						
Centerline Dist.		65.0 feet		Noise So		evations (in	feet)				
Barrier Distance		0.0 feet			Autos						
Observer Height		14.0 feet			m Trucks		<u> </u>				
•	ad Elevation:	0.0 feet		Heav	y Trucks	8.006	Grade Adj	ustment:	0.0		
	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in	feet)				
Barr	ier Elevation:	0.0 feet			Autos	: 58.898					
	Road Grade:	0.0%		Mediu	m Trucks	: 58.523					
				Heav	y Trucks	57.974					
FHWA Noise Mod			Distant			<b>-</b>	DeviewAtt		A ((		
VehicleType	REMEL	Traffic Flow	Distanc		Road	Fresnel	Barrier Atte		m Atten		
Autos:				0.78	0.00	-12.65			0.00		
Medium Trucks:				0.75	0.00	-13.07			0.00		
Heavy Trucks:	82.14	-17.15	-(	0.71	0.00	-13.91	0.0	00	0.000		
Unmitigated Nois	e Levels (with	-	1	,		1		1			
VehicleType	Leq Peak Ho			q Evening	Leq I	Vight	Ldn		VEL		
Autos:			70.7	68.9		62.9	71.5		72.		
Medium Trucks:	63		62.2	55.8		54.3	62.7		63.0		
	6/	.3	62.9	53.8		55.1	63.4		63.		
Heavy Trucks:	04								73.1		
Heavy Trucks: Vehicle Noise:			71.9	69.3		64.0	72.6				
Vehicle Noise:	73	3.7				64.0	72.6				
Vehicle Noise:	73	3.7 po and barrie	r attenuat		Leq	64.0 Vight	72.6 		NEL		
Vehicle Noise: Mitigated Noise L	73 <b>evels (with To</b> Leq Peak Hou	3.7 <b>po and barrie</b> ur Leq Day	r attenuat	ion)	Leq			CN			
Vehicle Noise: <b>Mitigated Noise L</b> VehicleType	73 <b>evels (with To</b> Leq Peak Hou 72	3.7 Ppo and barrie ur Leq Day 2.6	<b>r attenuat</b> / Lec	<b>ion)</b> q Evening	Leq I	Night	Ldn	CN	72.1		
Vehicle Noise: Mitigated Noise L VehicleType Autos:	73 <b>evels (with To</b> Leq Peak Hou 72 63	3.7 <b>po and barrie</b> <i>ur</i> Leq Day 2.6 3.7	r <b>attenuat</b> / Lec 70.7	<b>ion)</b> q Evening 68.9	Leq I	Vight 62.9	Ldn 71.5	CN	NEL 72.7 63.0 63.0		

Scenario: Third Floor With Wall Road Name: Warner Ave. Lot No: Bldg. A

<b></b>									_	
	SPECIFIC IN	IPUT DATA							5	
Highway Data				Site Cor	ditions	•		,		
	. ,	39,800 vehicles					Autos:	10		
	<sup>r</sup> Percentage:	10%			edium Tru	•	,	10		
Peak F	lour Volume:	3,980 vehicles		He	eavy Truc	:ks (3+ A	xles):	10		
	ehicle Speed:	45 mph		Vehicle	Mix					
Near/Far La	ane Distance:	60 feet		Veh	icleType		Day	Evening	Night	Daily
Site Data							, 77.5%	_	9.6%	-
Ba	rrier Height:	0.0 feet		M	ledium Tr	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W	-	0.0			Heavy Ti	rucks:	86.5%	2.7%	10.8%	0.749
	ist. to Barrier:	65.0 feet								
Centerline Dist.		65.0 feet		Noise S				et)		
Barrier Distance		0.0 feet			Autos		.000			
Observer Height		25.0 feet			m Trucks		.000			
	ad Elevation:	0.0 feet		Hea	vy Trucks	s: 8	.006	Grade Adj	justment	: 0.0
	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distanc	e (in f	feet)		
	ier Elevation:	0.0 feet			Autos	s: 62.0	)81	,		
	Road Grade:	0.0%		Mediu	m Trucks					
		010,0			vy Trucks					
FHWA Noise Mod	lel Calculation	s								
FHWA Noise Mod VehicleType	lel Calculation REMEL	s Traffic Flow	Distanc	e Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
	REMEL	Traffic Flow		e <i>Finite</i>	<i>Road</i> 0.00		el 20.63	<i>Barrier Atte</i> 0.0		
VehicleType	<i>REMEL</i> 69.34	Traffic Flow 4.05	-			-2			000	0.00
VehicleType Autos:	REMEL 69.34 77.62	<i>Traffic Flow</i> 4.05 -13.19	-` -(	1.01	0.00	-2 -2	20.63	0.0	000	0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 69.34 77.62 82.14	<i>Traffic Flow</i> 4.05 -13.19 -17.15	_ · -( -(	1.01 0.96 0.87	0.00 0.00	-2 -2	20.63 21.34	0.0 0.0	000	0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 69.34 77.62 82.14	<i>Traffic Flow</i> 4.05 -13.19 -17.15 <b>out Topo and k</b>	- )- ( )-	1.01 0.96 0.87	0.00 0.00 0.00	-2 -2	20.63 21.34	0.0 0.0	000 000 000	0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b>	REMEL 69.34 77.62 82.14 <b>e Levels (with</b> Leq Peak Hou	Traffic Flow 4.05 -13.19 -17.15 <b>out Topo and L</b> ur Leq Day	- )- ( )-	1.01 0.96 0.87 <b>tenuation)</b>	0.00 0.00 0.00 <i>Leq</i>	-2 -2 -2	20.63 21.34 22.80	0.0 0.0 0.0	000 000 000 <i>C</i> /	0.00 0.00 0.00 NEL
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 69.34 77.62 82.14 e Levels (with Leq Peak Hou 72	Traffic Flow           4.05           -13.19           -17.15           out Topo and K           ur         Leq Day           2.4         7	- -( -( b <b>arrier at</b> Leo	1.01 0.96 0.87 <b>tenuation)</b> q Evening	0.00 0.00 0.00	-2 -2 -2 Night	20.63 21.34 22.80	0.0 0.0 0.0 <i>Ldn</i>	000 000 000 C/	0.00 0.00 0.00 NEL 71.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos: Medium Trucks:	REMEL 69.34 77.62 82.14 e Levels (with Leq Peak Hou 72 63	Traffic Flow           4.05           -13.19           -17.15           out Topo and k           Ir         Leq Day           2.4         7           3.5         6	 -( -( -( -( -( -( -( -( -( -( -( -( -	1.01 0.96 0.87 <b>tenuation)</b> q Evening 68.7	0.00 0.00 0.00	-2 -2 -2 Night 62.7	20.63 21.34 22.80	0.0 0.0 0.0 <i>Ldn</i> 71.3 62.5	000 000 000 <i>Cl</i> 3	0.00 0.00 0.00 NEL 71. 62.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos:	<i>REMEL</i> 69.34 77.62 82.14 <i>e Levels (with</i> <i>Leq Peak Hou</i> 72 63 64	Traffic Flow         4.05         -13.19         -17.15           out Topo and K         K	 -( -( b <b>arrier at</b> <u>Lec</u> 70.5 52.0	1.01 0.96 0.87 <b>tenuation)</b> ק Evening 68.7 55.6	0.00 0.00 0.00	-2 -2 -2 Night 62.7 54.1	20.63 21.34 22.80	0.0 0.0 0.0 <i>Ldn</i> 71.3	000 000 000 <i>Cl</i> 3 5 3	0.00 0.00 0.00 NEL 71. 62. 63.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	<i>REMEL</i> 69.34 77.62 82.14 <i>e Levels (with</i> <i>Leq Peak Hou</i> 72 63 64 73	Traffic Flow         4.05         -13.19         -17.15           out Topo and K         K	 -( -( -( -( -( -( -() 	1.01 0.96 0.87 <b>tenuation)</b> q Evening 68.7 55.6 53.7 69.1	0.00 0.00 0.00	-2 -2 -2 Night 62.7 54.1 54.9	20.63 21.34 22.80	0.0 0.0 0.0 <i>Ldn</i> 71.3 62.5 63.3	000 000 000 <i>Cl</i> 3 5 3	0.00 0.00 0.00 NEL 71. 62. 63.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: <b>Mitigated Noise L</b>	REMEL 69.34 77.62 82.14 e Levels (with Leq Peak Hou 72 63 64 73 evels (with To	Traffic Flow       4.05         -13.19       -17.15         out Topo and L       17         ur       Leq Day         2.4       7         3.5       6         3.4       7         3.4       7         3.4       7         3.4       7         3.4       7         3.4       7		1.01 0.96 0.87 <b>tenuation)</b> q Evening 68.7 55.6 53.7 69.1 <b>ion)</b>	0.00 0.00 0.00	-2 -2 -2 Night 62.7 54.1 54.9 63.8	20.63 21.34 22.80	0.0 0.0 0.0 <i>Ldn</i> 71.3 62.5 63.3 72.4	000 000 000 <i>C/</i> 3 5 3	0.00 0.00 0.00 NEL 71. 62. 63. 72.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: <b>Mitigated Noise L</b> VehicleType	REMEL 69.34 77.62 82.14 e Levels (with Leq Peak Hou 63 64 73 evels (with To Leq Peak Hou	Traffic Flow         4.05         -13.19         -17.15         out Topo and k         Ir       Leq Day         2.4       7         6.5       6         3.1       6         3.4       7         3.4       7         3.4       7         3.4       7         Data       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       6         1       7         1       7         1       6         1       7         1       7         1       6         1       6         1       6		1.01 0.96 0.87 <b>tenuation)</b> q Evening 68.7 55.6 53.7 69.1 <b>ion)</b> q Evening	0.00 0.00 0.00 Leq I	-2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -	20.63 21.34 22.80	0.0 0.0 0.0 <i>Ldn</i> 71.3 62.5 63.3 72.4 <i>Ldn</i>	000 000 000 200 200 200 200 200 200 200	0.00 0.00 0.00 NEL 71. 62. 63. 72.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise : <b>Mitigated Noise L</b> VehicleType Autos:	REMEL 69.34 77.62 82.14 e Levels (with Leq Peak Hou 63 64 73 evels (with To Leq Peak Hou 72	Traffic Flow         4.05         -13.19         -17.15         out Topo and L         ur       Leq Day         2.4       7         3.5       6         3.4       7         3.4       7         3.4       7         0.1       6         1       6         2.4       7         2.4       7         2.4       7		1.01 0.96 0.87 <b>tenuation)</b> q Evening 68.7 55.6 53.7 69.1 <b>ion)</b> q Evening 68.7	0.00 0.00 Leq I	-2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -	20.63 21.34 22.80	0.0 0.0 0.0 71.3 62.5 63.3 72.4 <i>Ldn</i> 71.3	000 000 000 200 200 200 200 200 200 200	0.00 0.00 0.00 NEL 71. 63. 72. NEL 71.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: <b>Mitigated Noise L</b> VehicleType	REMEL 69.34 77.62 82.14 e Levels (with Leq Peak Hou 72 63 64 73 evels (with To Leq Peak Hou 72 63	Traffic Flow         4.05         -13.19         -17.15         out Topo and k         Ir       Leq Day         2.4       7         3.5       6         Ir       Leq Day         2.4       7         3.4       7         5.5       6         3.4       7         5.5       6         5.5       6		1.01 0.96 0.87 <b>tenuation)</b> q Evening 68.7 55.6 53.7 69.1 <b>ion)</b> q Evening	0.00 0.00 0.00	-2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -	20.63 21.34 22.80	0.0 0.0 0.0 <i>Ldn</i> 71.3 62.5 63.3 72.4 <i>Ldn</i>	000 000 000 200 200 200 200 200 200 200	71.3 62.3 63 72.3

Scenario: Third Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. A

JIIE -	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS						
Highway Data				Site Con	ditions (F	<i>lard = 10,</i> S	oft = 15)			
Average Daily	Traffic (Adt):	40,200 vehicles	S			Autos	: 10			
Peak Hour	Percentage:	10%		Me	dium Truc	ks (2 Axles)	: 10			
Peak H	lour Volume:	4,020 vehicles	5	He	avy Truck	s (3+ Axles)	: 10			
Ve	hicle Speed:	50 mph		Vehicle I	Mix					
Near/Far La	ne Distance:	60 feet			icleType	Day	Evening	Night	Daily	
Site Data						1tos: 77.5%	-	9.6%	-	
	rrier Height:	0.0 feet		M	edium Tru			10.3%		
Barrier Type (0-W	-	0.0 Teet			Heavy Tru		6 2.7%	10.8%		
Centerline Dis	,	138.0 feet			-					
Centerline Dist.		138.0 feet		Noise Sc		vations (in f	eet)			
Barrier Distance		0.0 feet			Autos:					
Observer Height (		25.0 feet			m Trucks:		Crada Ad	ivotroopt		
• •	ad Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Adj	usimeni.	0.0	
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent E	Distance (in	feet)			
Barri	ier Elevation:	0.0 feet			Autos:	136.649				
I	Road Grade:	0.0%		Mediu	m Trucks:	136.327				
				Heav	y Trucks:	135.767				
FHWA Noise Mode	al Calculation									
VehicleType	REMEL	S Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten	
Autos:				1.44	0.00	-22.61		000	0.00	
Medium Trucks:				1.43				000		
	10.19	-13.60		1.43	0.00	-22.96	0.0	,00	0.00	
Heavy Trucks:				i.43 i.41	0.00 0.00	-22.96 -23.67		000		
Heavy Trucks:	83.02	-17.56	-4	1.41						
Heavy Trucks: Unmitigated Noise	83.02 e Levels (with	-17.56 out Topo and	-4 barrier att	1.41 <b>enuation)</b>	0.00	-23.67	0.0	000	0.00	
Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	83.02 <b>e Levels (with</b> Leq Peak Hou	-17.56 out Topo and ır Leq Day	-4 <b>barrier att</b> ⁄ Leq	1.41 F <b>enuation)</b> Evening		-23.67 ight	0.0 Ldn	000 CN	0.00 NEL	
Heavy Trucks: Unmitigated Noise	83.02 <b>e Levels (with</b> Leq Peak Hou 70	-17.56 out Topo and ur Leq Day 0.3	-4 <b>barrier att</b> / Leq 68.4	1.41 <b>enuation)</b> Evening 66.7	0.00	-23.67 ight 60.6	0.0 <i>Ldn</i> 69.2	000 CN	0.00 VEL 69.	
Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks:	83.02 e Levels (with Leq Peak Hou 70 60	-17.56 out Topo and I Ir Leq Day 0.3	-4 <b>barrier att</b> ⁄ Leq	1.41 F <b>enuation)</b> Evening	0.00 Leq Ni	-23.67 ight 60.6 51.3	0.0 Ldn	2 3	0.00 VEL 69. 60.	
Heavy Trucks: Unmitigated Noise VehicleType Autos:	83.02 <b>e Levels (with</b> Leq Peak Hou 70 60 61	-17.56 out Topo and ur Leq Day 0.3 0.8 .1	-4 <b>barrier att</b> <u>Leq</u> 68.4 59.3	I.41 Tenuation) Evening 66.7 52.9	0.00 Leq Ni	-23.67 ight 60.6	0.0 <i>Ldn</i> 69.2 59.8	000 CA 2 3 2	0.00 VEL 69. 60. 60.	
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	83.02 e Levels (with Leq Peak Hou 70 60 61 71	-17.56 out Topo and I ur Leq Day 0.3 0.8 .1 .2	-4 <b>barrier att</b> / Leq 68.4 59.3 59.6 69.4	I.41 Evening 66.7 52.9 50.6 66.9	0.00 Leq Ni	-23.67 ight 60.6 51.3 51.8	0.0 <i>Ldn</i> 69.2 59.8 60.2	000 CA 2 3 2	0.00 <u>VEL</u> 69. 60. 60.	
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le	83.02 e Levels (with Leq Peak Hou 70 60 61 71 evels (with To	-17.56 out Topo and Ir Leq Day 0.3 0.8 .1 .2 opo and barrier	-4 <b>barrier att</b> <u>Leq</u> 68.4 59.3 59.6 69.4 <b>r attenuati</b>	I.41 enuation) Evening 66.7 52.9 50.6 66.9 on)	0.00 Leq Ni	-23.67 ight 60.6 51.3 51.8 61.6	0.0 <i>Ldn</i> 69.2 59.8 60.2 70.2	000 CA 2 3 2 2	0.00 VEL 69. 60. 60. 70.	
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType	83.02 e Levels (with Leq Peak Hou 70 60 61 71 evels (with To Leq Peak Hou	-17.56 out Topo and J Ir Leq Day 0.3 (1) 0.8 (2) 0.8 (2) 0.8 (2) 0.9	-4 <b>barrier att</b> Leq 68.4 59.3 59.6 69.4 <b>r attenuati</b> Leq	1.41 <b>renuation)</b> Evening 66.7 52.9 50.6 66.9 <b>fon)</b> Evening	0.00 Leq Ni	-23.67 ight 60.6 51.3 51.8 61.6	0.0 <i>Ldn</i> 69.2 59.8 60.2 70.2 <i>Ldn</i>	000 C/ 2 2 2 2 2 C/	0.00 VEL 69. 60. 60. 70. VEL	
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType Autos:	83.02 e Levels (with Leq Peak Hou 70 60 61 71 evels (with To Leq Peak Hou 70	-17.56 out Topo and Ir Leq Day 0.3 0.8 .1 .2 po and barrier Ir Leq Day 0.3	-4 barrier att Leq 68.4 59.3 59.6 69.4 r attenuati Leq 68.4	I.41 enuation) Evening 66.7 52.9 50.6 66.9 fon) Evening 66.7	0.00 Leq Ni	-23.67 ight 60.6 51.3 51.8 61.6 ight 60.6	0.0 <i>Ldn</i> 69.2 59.8 60.2 70.2 <i>Ldn</i> 69.2	000 CN 2 3 2 CN 2 2	0.00 NEL 69. 60. 70. NEL 69.	
Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType	83.02 e Levels (with Leq Peak Hou 70 60 61 71 evels (with To Leq Peak Hou 70 60	-17.56 out Topo and Ir Leq Day 0.3 0.8 .1 .2 po and barrier Ir Leq Day 0.3 0.8 .3 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	-4 <b>barrier att</b> Leq 68.4 59.3 59.6 69.4 <b>r attenuati</b> Leq	1.41 <b>renuation)</b> Evening 66.7 52.9 50.6 66.9 <b>fon)</b> Evening	0.00 Leq Ni	-23.67 ight 60.6 51.3 51.8 61.6	0.0 <i>Ldn</i> 69.2 59.8 60.2 70.2 <i>Ldn</i>	000 CM 2 3 2 2 CM 2 3	69. 60. 60. 70.	

Scenario: Third Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. B

		NOISE MODEL INPUTS								
JILE Highway Data	SPECIFIC INF			Site Con		015E MC Hard = 10			)	
	Troffic (Adt): 1	200 vehicles	2		unions (		itos:	10		
• •	Traffic (Adt): 40 Percentage:	10%	5	Mo	dium Tru	cks (2 Ax		10		
	-	4,020 vehicles	<b>c</b>			ks (3+ Ax	,	10		
	hicle Speed:	-	5				63).	10		
	ine Distance:	50 mph 60 feet		Vehicle I	Mix					
	ine Distance.	ou leel		Veh	icleType		ay	Evening	Night	Daily
Site Data				_			7.5%		9.6%	
Ba	rrier Height:	0.0 feet			edium Tr		4.8%		10.3%	1.849
Barrier Type (0-W	/all, 1-Berm):	0.0		ŀ	Heavy Tr	ucks: 86	6.5%	2.7%	10.8%	0.74
Centerline Di	ist. to Barrier:	223.0 feet		Noise Sc	ource Fle	evations (	in fe	et)		
Centerline Dist.	to Observer:	223.0 feet		110/00 00	Autos			01)		
Barrier Distance	to Observer:	0.0 feet		Mediu	m Trucks					
Observer Height	(Above Pad):	25.0 feet			ry Trucks			Grade Adj	ustment	0.0
Pa	ad Elevation:	0.0 feet			-					0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in f	eet)		
Barr	ier Elevation:	0.0 feet				: 222.16				
	Road Grade:	0.0%		Mediur	m Trucks	: 221.96	8			
				Heav		221.62				
EHWA Noise Mod	ol Calculations			Heav						
<b>FHWA Noise Mod</b> VehicleType		Traffic Flow	Distanc		ry Trucks		5	Barrier Atte	en Ber	m Atten
FHWA Noise Mod VehicleType Autos:	REMEL	Traffic Flow 3.63				: 221.62 Fresnel	5	Barrier Atte 0.0		
VehicleType	<i>REMEL</i> 71.12		-6	e Finite	ry Trucks Road	:: 221.62 Fresnel -23	5		00	0.00
VehicleType Autos:	<i>REMEL</i> 71.12 78.79	3.63	-( -(	e <i>Finite</i> 6.55	ry Trucks Road 0.00	:: 221.62 Fresnel -23 -23	5 1 2.31	0.0	00	0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 71.12 78.79 83.02	3.63 -13.60 -17.56	-( -( -(	e Finite 5.55 5.54 5.54	ry Trucks Road 0.00 0.00	:: 221.62 Fresnel -23 -23	5 .31 2.53	0.0 0.0	00	0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	REMEL 71.12 78.79 83.02 e Levels (witho	3.63 -13.60 -17.56 <b>ut Topo and</b>	)- -( -( barrier at	e Finite 5.55 5.54 6.54 6.54	<i>Road</i> 0.00 0.00 0.00	: 221.62 Fresnel -23 -23 -23	5 2.31 2.53 2.97	0.0 0.0 0.0	00 00 00	0.00 0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> e VehicleType	REMEL 71.12 78.79 83.02 e Levels (witho Leq Peak Hour	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day	)۔ -( -( barrier att س Leo	e Finite 5.55 5.54 5.54 5.54 tenuation)	ry Trucks Road 0.00 0.00	:: 221.62 Fresnel -23 -23 -23 Vight	5 2.31 2.53 2.97	0.0 0.0 0.0 <i>Ldn</i>	000 000 000	0.00 0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType Autos:	REMEL 71.12 78.79 83.02 e Levels (witho Leq Peak Hour 68.2	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day	-( -( -( barrier at / Leq 66.3	e Finite 5.55 5.54 6.54 tenuation) g Evening 64.5	<i>Road</i> 0.00 0.00 0.00	:: 221.62 Fresnel -23 -23 -23 Vight 58.5	5 2.31 2.53 2.97	0.0 0.0 0.0 <i>Ldn</i> 67.1	00 00 00 <i>CI</i>	0.00 0.00 0.00 NEL 67
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks:	REMEL 71.12 78.79 83.02 e Levels (witho Leq Peak Hour 68.2 58.6	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day 2	-6 -6 -6 <b>barrier at</b> / Leo 66.3 57.1	e Finite 6.55 6.54 6.54 5.54 tenuation) g Evening 64.5 50.8	<i>Road</i> 0.00 0.00 0.00	: 221.62 Fresnel -23 -23 -23 Vight 58.5 49.2	5 2.31 2.53 2.97	0.0 0.0 0.0 <u>Ldn</u> 67.1 57.7	00 00 00 <i>C1</i>	0.00 0.00 0.00 VEL 67. 57.
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos:	REMEL 71.12 78.79 83.02 e Levels (witho Leq Peak Hour 68.2 58.6 58.6	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day 2 6	-( -( -( barrier at / Leq 66.3	e Finite 5.55 5.54 6.54 tenuation) g Evening 64.5	<i>Road</i> 0.00 0.00 0.00	:: 221.62 Fresnel -23 -23 -23 Vight 58.5	5 2.31 2.53 2.97	0.0 0.0 0.0 <i>Ldn</i> 67.1	00 00 00 <i>CI</i>	0.00 0.00 0.00 NEL 67. 57. 58.
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 71.12 78.79 83.02 e Levels (witho Leq Peak Hour 68.2 58.6 58.6 69.7	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day 2 5 9	-6 -6 <b>barrier at</b> / Leq 66.3 57.1 57.5 67.3	e Finite 5.55 5.54 5.54 5.54 tenuation) g Evening 64.5 50.8 48.5 64.8	<i>Road</i> 0.00 0.00 0.00	:: 221.62 Fresnel -23 -23 -23 Vight 58.5 49.2 49.7	5 2.31 2.53 2.97	0.0 0.0 0.0 <i>Ldn</i> 67.1 57.7 58.1	00 00 00 <i>CI</i>	0.00 0.00 0.00 NEL 67. 57. 58.
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 71.12 78.79 83.02 e Levels (witho Leq Peak Hour 68.2 58.6 58.5 69.7 evels (with Top	3.63 -13.60 -17.56 <i>ut Topo and</i> <i>Leq Day</i> 2 5 9 1 0 <i>and barrie</i>	-6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -7 -7 -6 -7 -7 -7 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	e Finite 5.55 5.54 5.54 tenuation) g Evening 64.5 50.8 48.5 64.8 ion)	ry Trucks Road 0.00 0.00 Leq N	E 221.62 Fresnel -23 -23 -23 Vight 58.5 49.2 49.2 49.7 59.5	5 2.31 2.53 2.97	0.0 0.0 0.0 <i>Ldn</i> 67.1 57.7 58.1 68.0	00 00 00 <i>C1</i>	0.00 0.00 0.00 VEL 67. 57. 58. 68.
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Lo VehicleType	REMEL           71.12           78.79           83.02           e Levels (witho           Leq Peak Hour           68.2           58.6           58.6           69.7           evels (with Top           Leq Peak Hour	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day 2 5 9 1 <b>o and barrie</b> Leq Day	-( -( barrier att / Leq 66.3 57.1 57.5 67.3 r attenuatt	e Finite 5.55 5.54 5.54 5.54 tenuation) g Evening 64.5 50.8 48.5 64.8 ion) g Evening	<i>Road</i> 0.00 0.00 0.00	: 221.62 Fresnel -23 -23 -23 Vight 58.5 49.2 49.7 59.5 Vight	5 2.31 2.53 2.97	0.0 0.0 0.0 <i>Ldn</i> 67.1 57.7 58.1 68.0 <i>Ldn</i>	00 00 00 <i>CI</i>	0.00 0.00 0.00 VEL 67 57 58 68
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Lo VehicleType Autos:	REMEL           71.12           78.79           83.02           e Levels (witho           Leq Peak Hour           68.2           58.6           58.6           69.7           evels (with Top           Leq Peak Hour           68.2           69.7           Leq Peak Hour           68.2	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day 2 5 5 7 1 <b>o and barrie</b> Leq Day 2	-6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -6 -	e Finite 5.55 5.54 5.54 5.54 tenuation) g Evening 64.5 50.8 48.5 64.8 ion) g Evening 64.5	ry Trucks Road 0.00 0.00 Leq N	<ul> <li>221.62</li> <li>Fresnel</li> <li>-23</li> <li>-24</li> <li>-25</li> <li>-25</li> <li>-25</li> <li>-25</li> <li>-25</li> <li>-25</li> <li>-25</li></ul>	5 2.31 2.53 2.97	0.0 0.0 0.0 <u>Ldn</u> 67.1 57.7 58.1 68.0 <u>Ldn</u> 67.1	00 00 00 <i>CI</i>	0.00 0.00 0.00 VEL 67. 58. 68. VEL 67.
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Lo VehicleType	REMEL           71.12           78.79           83.02           e Levels (witho           Leq Peak Hour           68.2           58.6           58.5           69.7           evels (with Top           Leq Peak Hour           68.2           58.6           58.5           69.7           Evels (with Top           Leq Peak Hour           68.2           58.6	3.63 -13.60 -17.56 <b>ut Topo and</b> Leq Day 2 5 9 1 <b>to and barrie</b> Leq Day 2 5	-( -( barrier att / Leq 66.3 57.1 57.5 67.3 r attenuatt	e Finite 5.55 5.54 5.54 5.54 tenuation) g Evening 64.5 50.8 48.5 64.8 ion) g Evening	ry Trucks Road 0.00 0.00 Leq N	: 221.62 Fresnel -23 -23 -23 Vight 58.5 49.2 49.7 59.5 Vight	5 2.31 2.53 2.97	0.0 0.0 0.0 <i>Ldn</i> 67.1 57.7 58.1 68.0 <i>Ldn</i>	00 00 00 <i>CI</i>	67. 57. 58. 68.

Scenario: Third Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. C Project Name: The Bowery Job Number: 12282 Analyst: B. Lawson

CITE					NO				
ع ۲۱۲ Highway Data	SPECIFIC INP			Site Con		ard = $10$ , S	$\frac{1}{10000000000000000000000000000000000$	)	
	Traffia (Adt), 10	200 vahialaa				Autos			
• •	Traffic (Adt): 40			Ma	dium Truck	s (2 Axles)			
	Percentage:	10%				. ,			
		020 vehicles		пеа	avy Trucks	(3+ Axles)	10		
	hicle Speed:	50 mph		Vehicle N	lix				
Near/Far La	ne Distance:	60 feet		Vehi	cleType	Day	Evening	Night	Daily
Site Data					Aut	os: 77.5%	6 12.9%	9.6%	97.429
Ba	rrier Height:	0.0 feet		Me	edium Truc	ks: 84.8%	6 4.9%	10.3%	1.849
Barrier Type (0-W	-	0.0		ŀ	leavy Truc	ks: 86.5%	6 2.7%	10.8%	0.749
Centerline Dis	,	100.0 feet	_	Na: 0-		ationa (in f	(a a 4)		
Centerline Dist.		100.0 feet		Noise So		ations (in f	eet)		
Barrier Distance		0.0 feet			Autos:	2.000			
Observer Height (		25.0 feet			n Trucks:	4.000	Que de Adi		
• •	ad Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Adji	JStment:	0.0
Roa	ad Elevation:	0.0 feet		Lane Equ	ivalent D	istance (in	feet)		
Barri	ier Elevation:	0.0 feet			Autos:	98.127	-		
	Road Grade:	0.0%		Mediur	n Trucks:	97.678			
				Heav	y Trucks:	96.896			
FHWA Noise Mode	el Calculations								
VehicleType	REMEL 1	raffic Flow Di	stance	Finite	Road	Fresnel	Barrier Atte	n Berr	m Atten
Autos:	71.12	3.63	-3.0	0	0.00	-21.93	0.0	00	0.00
Medium Trucks:	78.79	-13.60	-2.9	8	0.00	-22.40	0.0	00	
Heavy Trucks:	83.02			•	0.00				0.00
-	03.02	-17.56	-2.9		0.00	-23.37	0.0		
-				4			0.0		
-			ier atten	4		-23.37	0.0	00	
Unmitigated Noise	e Levels (withou	t Topo and barr	ier atten	4 <b>uation)</b>	0.00	-23.37		00 CN	0.00 NEL
Unmitigated Noise VehicleType	e Levels (withou Leq Peak Hour	<b>t Topo and barr</b> Leq Day	ier atten	4 <b>uation)</b> vening	0.00	-23.37 ght	Ldn	00 CN	0.00 NEL 71.
Unmitigated Noise VehicleType Autos:	<b>e Levels (withou</b> Leq Peak Hour 71.8 62.2	<b>t Topo and barr</b> Leq Day 69.9	ier atten	4 <b>uation)</b> vening 68.1	0.00	-23.37 ght62.0	Ldn 70.7	00 <i>CN</i>	0.00 <u>VEL</u> 71. 61.
Unmitigated Noise VehicleType Autos: Medium Trucks:	<b>e Levels (withou</b> Leq Peak Hour 71.8 62.2 62.5	<b>t Topo and barr</b> Leq Day 69.9 60.7	ier atten	4 vening 68.1 54.3	0.00	-23.37 ght 62.0 52.8	<i>Ldn</i> 70.7 61.3	00 C^	0.00 NEL 71. 61. 61.
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (withou Leq Peak Hour 71.8 62.2 62.5 72.7	t Topo and barr Leq Day 69.9 60.7 61.1 70.8	<b>ier atten</b> Leq E	4 vening 68.1 54.3 52.1 68.4	0.00	-23.37 ght 62.0 52.8 53.3	Ldn 70.7 61.3 61.7	00 C^	0.00 NEL 71. 61. 61.
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (withou Leq Peak Hour 71.8 62.2 62.5 72.7	t Topo and barr Leq Day 69.9 60.7 61.1 70.8	ier atten Leq E	4 vening 68.1 54.3 52.1 68.4	0.00	-23.37 ght 62.0 52.8 53.3 63.0	Ldn 70.7 61.3 61.7	00 	0.00 NEL 71. 61. 61.
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise	e Levels (withou Leq Peak Hour 71.8 62.2 62.5 72.7 evels (with Topo	t Topo and barr Leq Day 69.9 60.7 61.1 70.8 • and barrier atte	ier atten Leq E	4 vening 68.1 54.3 52.1 68.4	0.00 Leq Nig	-23.37 ght 62.0 52.8 53.3 63.0	Ldn 70.7 61.3 61.7 71.6	00 <i>CN</i>	0.00 NEL 71. 61. 61. 72. NEL
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType	e Levels (withou Leq Peak Hour 71.8 62.2 62.5 72.7 evels (with Topo Leq Peak Hour	t Topo and barr Leq Day 69.9 60.7 61.1 70.8 and barrier atte Leq Day	ier atten Leq E	4 vening 68.1 54.3 52.1 68.4 vening	0.00 Leq Nig	-23.37 ght 62.0 52.8 53.3 63.0 ght ght	Ldn 70.7 61.3 61.7 71.6 Ldn	00 <i>CN</i>	0.00 NEL 71. 61. 61. 72. NEL 71.
Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType Autos:	e Levels (withou Leq Peak Hour 71.8 62.2 62.5 72.7 evels (with Topo Leq Peak Hour 71.8	t Topo and barr Leq Day 69.9 60.7 61.1 70.8 and barrier atte Leq Day 69.9	ier atten Leq E	4 vening 68.1 54.3 52.1 68.4 vening 68.1	0.00 Leq Nig	-23.37 ht 62.0 52.8 53.3 63.0 ht 62.0	Ldn 70.7 61.3 61.7 71.6 Ldn 70.7	00 <i>CN</i>	71. 61. 61. 72.

Sunday, November 17, 2019

Scenario: Third Floor With Wall Road Name: Warner Ave. Lot No: Bldg. D

SITE		NPUT DATA		NOISE MODEL INPUTS						
Highway Data				Site Cor	ditions (	/Hard = 10, S	oft = 15)			
Average Daily	Traffic (Adt):	39,800 vehicle	S			Autos	: 10			
	Percentage:	10%		Me	dium Tru	icks (2 Axles)	: 10			
Peak H	lour Volume:	3,980 vehicles	S	He	avy Truc	ks (3+ Axles)	: 10			
Ve	hicle Speed:	45 mph		Vehicle	Mix					
Near/Far La	ne Distance:	60 feet			icleType	Day	Evening	Night	Daily	
Site Data						utos: 77.5%	-	-	97.429	
	rriar Uaiabt:	0.0 feet		M	Iedium Tr			10.3%	1.84%	
Barrier Type (0-W	rrier Height:	0.0 Teet			Heavy Tr			10.8%	0.749	
Centerline Di	,	65.0 feet			-					
Centerline Dist.		65.0 feet		Noise S		evations (in f	eet)			
Barrier Distance		0.0 feet			Autos					
Observer Height (		25.0 feet			m Trucks		Creada Adi			
	ad Elevation:	0.0 feet		Hea	/y Trucks	8.006	Grade Adj	usimeni.	0.0	
Roa	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in	feet)			
Barri	ier Elevation:	0.0 feet			Autos	: 62.081				
	Road Grade:	0.0%		Mediu	m Trucks	: 61.368				
				Hear	/y Trucks	60.115				
FHWA Noise Mode	el Calculation	16								
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten	
Autos:	69.34			1.01	0.00	-20.63			0.00	
Medium Trucks:	77.62	-13.19	-(	0.96	0.00	-21.34	0.0	00	0.00	
Heavy Trucks:	82.14	-17.15	-(	0.87	0.00	-22.80	0.0	00	0.00	
Unmitigated Noise	e Levels (with	out Topo and	barrier at	tenuation)						
VehicleType	Leg Peak Ho	-		g Evening	Leq I	Vight	Ldn	Cl	VEL	
Autos:	. 72	2.4	70.5	68.7		62.7	71.3		71.	
Medium Trucks:	63	3.5	62.0	55.6		54.1	62.5		62.	
Heavy Trucks:	64	ł.1	62.7	53.7		54.9	63.3		63.	
Vehicle Noise:	73	3.4	71.6	69.1		63.8	72.4		72.	
Mitigated Noise Le	evels (with To	po and barrie	r attenuat	ion)						
VehicleType	Leg Peak Ho	-	-	, Evening	Leq I	Vight	Ldn	Cl	VEL	
Autos:	-		70.5	68.7		62.7	71.3		71.	
Medium Trucks:	63	3.5	62.0	55.6		54.1	62.5		62.	
Heavy Trucks:	64	ł.1	62.7	53.7		54.9	63.3		63.	
ricary riadito.										

Scenario: Fourth Floor With Wall Road Name: Warner Ave. Lot No: Bldg. A

SITE	SPECIFIC INP	UT DATA		NOISE MODEL INPUTS						
Highway Data				Site Con		ard = 10, S				
Average Daily	Traffic (Adt): 39	,800 vehicles				Autos	10			
	Percentage:	10%		Me	dium Trucl	ks (2 Axles)	: 10			
	-	,980 vehicles		He	avy Trucks	(3+ Axles)	: 10			
Ve	hicle Speed:	45 mph	_	Vehicle I	liv					
Near/Far La	ne Distance:	60 feet	-		icleType	Day	Evening	Night	Daily	
Site Data				VOIN	Au	-	•	-	97.429	
	rrier Height:	0.0 feet		Me	edium Truc			10.3%	1.84%	
ва Barrier Type (0-И	-	0.0 Teel 0.0			leavy Truc			10.8%	0.74%	
••••	ist. to Barrier:	65.0 feet	_		-					
Centerline Dist.		65.0 feet	=	Noise So		ations (in f	eet)			
Barrier Distance		0.0 feet			Autos:	2.000				
Observer Height		35.0 feet			n Trucks:	4.000			0.0	
-	ad Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Adji	ustment:	0.0	
Ro	ad Elevation:	0.0 feet	-	Lane Equ	uivalent D	istance (in	feet)			
	ier Elevation:	0.0 feet	_		Autos:	66.438				
	Road Grade:	0.0%		Mediur	n Trucks:	65.468				
				Heav	y Trucks:	63.668				
FHWA Noise Mod				Finite	Deed	<b>F</b>	De unie n. A.U.e			
VehicleType			Distance	Finite		Fresnel	Barrier Atte		m Atten	
Autos: Medium Trucks:		4.05	-1.3		0.00	-26.55			0.00	
		-13.19 -17.15	-1.2 -1.1		0.00	-27.50	0.0	00		
Heavy Trucks:	02.14	-1/10		2	0.00	20 46	0.0	00		
		11.10	-1.1	2	0.00	-29.46	0.0	00		
Unmitigated Nois	e Levels (withou	It Topo and bar	rier atter	nuation)					0.00	
VehicleType	<b>e Levels (withou</b> Leq Peak Hour	<b>it Topo and bar</b> Leq Day	<b>rier atter</b> Leq E	<b>nuation)</b> Evening	0.00 Leq Nig	ght	Ldn	CN	0.00	
VehicleType Autos:	<b>e Levels (withou</b> Leq Peak Hour 72.1	<b>It Topo and bar</b> Leq Day 70.2	rier atter Leq E	<b>nuation)</b> Evening 68.4		ght 62.4	Ldn 71.0	CN	0.000 NEL 71.0	
VehicleType Autos: Medium Trucks:	<b>e Levels (withou</b> Leq Peak Hour 72.1 63.2	<b>It Topo and bar</b> Leq Day 70.2 61.7	<b>rier atter</b> Leq E	<b>nuation)</b> Evening 68.4 55.3		ght 62.4 53.8	Ldn 71.0 62.2	CN	0.00 NEL 71.4 62.4	
VehicleType Autos: Medium Trucks: Heavy Trucks:	<b>e Levels (withou</b> Leq Peak Hour 72.1 63.2 63.9	<b>It Topo and bar</b> Leq Day 70.2 61.7 62.5	rier atter	<b>nuation)</b> Evening 68.4 55.3 53.4		ght 62.4 53.8 54.7	Ldn 71.0 62.2 63.0	CN	0.000 NEL 71.0 62.3 63.1	
VehicleType Autos: Medium Trucks:	<b>e Levels (withou</b> Leq Peak Hour 72.1 63.2 63.9	<b>It Topo and bar</b> Leq Day 70.2 61.7 62.5	rier atter	<b>nuation)</b> Evening 68.4 55.3		ght 62.4 53.8	Ldn 71.0 62.2	CN	0.000 NEL 71.0 62.3 63.2	
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	<b>e Levels (withou</b> Leq Peak Hour 72.1 63.2 63.9 73.2	<b>It Topo and bar</b> Leq Day 70.2 61.7 62.5 71.4	rier atter Leq E 2 5	<i>Evening</i> 68.4 55.3 53.4 68.8		ght 62.4 53.8 54.7	Ldn 71.0 62.2 63.0	CN	0.000 NEL 71.0 62.3 63.1	
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	<b>e Levels (withou</b> Leq Peak Hour 72.1 63.2 63.9 73.2	<b>It Topo and bar</b> Leq Day 70.2 61.7 62.5 71.4	rier atter Leq E 2 5 4 <b>enuatio</b> r	<i>Evening</i> 68.4 55.3 53.4 68.8		ght 62.4 53.8 54.7 63.5	Ldn 71.0 62.2 63.0	CN	0.00 NEL 71. 62. 63.	
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L	e Levels (withou Leq Peak Hour 72.1 63.2 63.9 73.2 evels (with Topo Leq Peak Hour	<i>It Topo and bar</i> Leq Day 70.2 61.7 62.5 71.4 <b>o and barrier att</b>	rier atter Leq E 2 5 4 <b>renuatior</b> Leq E	nuation) Evening 68.4 55.3 53.4 68.8 n)	Leq Nig	ght 62.4 53.8 54.7 63.5	Ldn 71.0 62.2 63.0 72.1	CN	0.000 NEL 71.1 62.3 63.7 72.1	
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: <b>Mitigated Noise L</b> VehicleType	e Levels (withou Leq Peak Hour 72.1 63.2 63.9 73.2 evels (with Topo Leq Peak Hour 72.1	<i>it Topo and bar</i> <i>Leq Day</i> 70.2 61.7 62.5 71.4 <b>o and barrier att</b> <i>Leq Day</i> 70.2	rier atter Leq E 2 5 4 <b>enuatior</b> Leq E 2	nuation) Evening 68.4 55.3 53.4 68.8 n) Evening	Leq Nig	2007 2017 2017 2017 2017 2017 2017 2017	Ldn 71.0 62.2 63.0 72.1 Ldn	CA	0.000 <u>VEL</u> 71.0 62.9 63.2 72.0 <u>VEL</u> 71.0	
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L VehicleType Autos:	e Levels (withou Leq Peak Hour 72.1 63.2 63.9 73.2 evels (with Topo Leq Peak Hour 72.1 63.2	<i>It Topo and bar</i> <i>Leq Day</i> 70.2 61.7 62.5 71.4 <i>o and barrier att</i> <i>Leq Day</i> 70.2 61.7	rier atter Leq E 2 5 4 <b>renuatior</b> Leq E 2 7	nuation) Evening 68.4 55.3 53.4 68.8 n) Evening 68.4	Leq Nig	ght       62.4       53.8       54.7       63.5       ght       62.4	Ldn 71.0 62.2 63.0 72.1 Ldn 71.0	C/ C/	0.000 NEL 71.6 62.9 63.2 72.6	

Scenario: Fourth Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. A

						-			
	SPECIFIC IN	IPUT DATA				DISE MODI		S	
Highway Data				Site Cor	ditions (	Hard = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	40,200 vehicles	S			Autos	: 10		
Peak Hour	<sup>.</sup> Percentage:	10%		Me	dium Tru	cks (2 Axles)	: 10		
Peak H	lour Volume:	4,020 vehicles	S	He	avy Truc	ks (3+ Axles)	: 10		
Ve	ehicle Speed:	50 mph		Vehicle	Mix				
Near/Far La	ane Distance:	60 feet			icleType	Day	Evening	Night	Daily
Site Data						utos: 77.5%	-	9.6%	
	rrier Height:	0.0 feet		M	edium Tr			10.3%	1.849
ва Barrier Type (0-W	-	0.0 Teet 0.0			Heavy Tr			10.8%	0.749
Centerline Di	,	138.0 feet			-				
Centerline Dist.		138.0 feet		Noise S	ource Ele	evations (in f	feet)		
Barrier Distance		0.0 feet			Autos				
Observer Height (		35.0 feet			m Trucks				
	ad Elevation:	0.0 feet		Hea	vy Trucks	: 8.006	Grade Adj	iustment:	0.0
	ad Elevation: ad Elevation:	0.0 feet		Lane Eo	uivalent	Distance (in	feet)		
	ier Elevation:	0.0 feet			Autos		,		
	Road Grade:	0.0%		Mediu	m Trucks				
	Road Grade.	0.070			/y Trucks				
				riou i	y maone	. 107.070			
FHWA Noise Mod	el Calculation	S							
VehicleType	REMEL	Traffic Flow	Distand	ce Finite	Deed	Fresnel	Barrier Atte	en Ber	
veniele i ype		Tranic Tiow			Road	11001101	20		m Atten
Autos:		3.63		4.50	0.00	-30.45			
	71.12		-				0.0	000	0.00
Autos:	71.12 78.79	3.63 -13.60	-	4.50	0.00	-30.45	0.0 0.0	)00 )00	0.00
Autos: Medium Trucks: Heavy Trucks:	71.12 78.79 83.02	3.63 -13.60 -17.56	-	4.50 4.48 4.46	0.00 0.00	-30.45 -30.94	0.0 0.0	)00 )00	0.00 0.00
Autos: Medium Trucks: Heavy Trucks:	71.12 78.79 83.02	3.63 -13.60 -17.56 out Topo and	- - barrier at	4.50 4.48 4.46	0.00 0.00	-30.45 -30.94 -31.91	0.0 0.0	000 000 000	0.00 0.00
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b>	71.12 78.79 83.02 <b>e Levels (with</b> Leq Peak Hou	3.63 -13.60 -17.56 <b>out Topo and</b> Ir Leq Day	- - barrier at	4.50 4.48 4.46 tenuation)	0.00 0.00 0.00	-30.45 -30.94 -31.91	0.0 0.0 0.0	000 000 000 <i>CI</i>	0.00 0.00 0.00 NEL
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	71.12 78.79 83.02 <b>e Levels (with</b> Leq Peak Hou 70	3.63 -13.60 -17.56 out Topo and Ir Leq Day 9.3	- - - <i>barrier at</i> / Leo	4.50 4.48 4.46 <b>tenuation)</b> q Evening	0.00 0.00 0.00	-30.45 -30.94 -31.91 light	0.0 0.0 0.0 0.0	000 000 000 <i>Cl</i> 2	0.00 0.00 0.00 VEL 69.
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos:	71.12 78.79 83.02 <b>e Levels (with</b> Leq Peak Hou 70 60	3.63 -13.60 -17.56 out Topo and ur Leq Day .3 .7	- - - barrier at / Leo 68.4	4.50 4.48 4.46 <b>tenuation)</b> q Evening 66.6	0.00 0.00 0.00	-30.45 -30.94 -31.91 light 60.5	0.0 0.0 0.0 0.0 <i>Ldn</i> 69.2	000 000 000 <i>C1</i> 2 3	0.00 0.00 0.00 VEL 69. 60.
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks:	71.12 78.79 83.02 <b>e Levels (with</b> Leq Peak Hou 70 60 61	3.63 -13.60 -17.56 out Topo and Ir Leq Day 3.3 .7 .0	- 	4.50 4.48 4.46 <b>tenuation)</b> q Evening 66.6 52.8	0.00 0.00 0.00	-30.45 -30.94 -31.91 light 60.5 51.3	0.0 0.0 0.0 0.0 <i>Ldn</i> 69.2 59.8	000 000 000 2 3	0.00 0.00 0.00 NEL 69. 60. 60.
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	71.12 78.79 83.02 <b>e Levels (with</b> Leq Peak Hol 70 60 61 71	3.63 -13.60 -17.56 out Topo and Ir Leq Day .3 .7 .0 .2	- barrier at / Leo 68.4 59.2 59.6 69.3	4.50 4.48 4.46 <b>tenuation)</b> q Evening 66.6 52.8 50.5 66.9	0.00 0.00 0.00	-30.45 -30.94 -31.91 light 60.5 51.3 51.8	0.0 0.0 0.0 <i>Ldn</i> 69.2 59.8 60.1	000 000 000 2 3	0.00 0.00 0.00 VEL 69. 60. 60.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le	71.12 78.79 83.02 e Levels (with Leq Peak Hou 70 60 61 71 evels (with To	3.63 -13.60 -17.56 out Topo and Ir Leq Day .3 .7 .0 .2 po and barrie	- barrier at / Leo 68.4 59.2 59.6 69.3 r attenuat	4.50 4.48 4.46 <b>tenuation)</b> q Evening 66.6 52.8 50.5 66.9	0.00 0.00 0.00	-30.45 -30.94 -31.91 light 60.5 51.3 51.8 61.5	0.0 0.0 0.0 0.0 69.2 59.8 60.1 70.1	000 000 000 <i>C1</i> 2 3	0.00 0.00 0.00 <u>VEL</u> 69. 60. 60. 70.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Lo VehicleType	71.12 78.79 83.02 e Levels (with Leq Peak Hou 70 60 61 71 evels (with To Leq Peak Hou	3.63 -13.60 -17.56 out Topo and <i>Ir</i> Leq Day .3 .7 .0 .2 <b>po and barriel</b> <i>Ir</i> Leq Day		4.50 4.48 4.46 <b>tenuation)</b> q Evening 66.6 52.8 50.5 66.9 <b>tion)</b> q Evening	0.00 0.00 0.00 Leq N	-30.45 -30.94 -31.91 light 60.5 51.3 51.8 61.5		000 000 000 2 3 3 1 <i>Cl</i>	0.00 0.00 0.00 VEL 69. 60. 60. 70.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Le VehicleType Autos:	71.12 78.79 83.02 e Levels (with Leq Peak Hou 60 61 71 evels (with To Leq Peak Hou 70	3.63 -13.60 -17.56 out Topo and ir Leq Day 3.7 .0 .2 po and barrien ir Leq Day 3.3		4.50 4.48 4.46 <b>tenuation)</b> q Evening 66.6 52.8 50.5 66.9 <b>tion)</b> q Evening 66.6	0.00 0.00 0.00 Leq N	-30.45 -30.94 -31.91 light 60.5 51.3 51.8 61.5 light 60.5	0.0 0.0 0.0 0.0 69.2 59.8 60.1 70.1 70.1	000 000 000 2 3 1 2 2 3	0.00 0.00 0.00 VEL 69. 60. 60. 70. VEL 69.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise Lo VehicleType	71.12 78.79 83.02 e Levels (with Leq Peak Hou 60 61 71 evels (with To Leq Peak Hou 70 60	3.63 -13.60 -17.56 out Topo and <i>Ir</i> Leq Day .3 .7 .0 .2 po and barrien <i>Ir</i> Leq Day .3 .7		4.50 4.48 4.46 <b>tenuation)</b> q Evening 66.6 52.8 50.5 66.9 <b>tion)</b> q Evening	0.00 0.00 0.00 Leq N	-30.45 -30.94 -31.91 light 60.5 51.3 51.8 61.5		000 000 000 2 2 3 1 2 3 3	0.00 0.00 0.00 <u>VEL</u> 69. 60. 60. 70.

Scenario: Fourth Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. B Project Name: The Bowery Job Number: 12282 Analyst: B. Lawson

	*	· · · · · · · · · · · · · · · · · · ·								
	SPECIFIC IN	IPUT DATA						L INPUTS	5	
Highway Data				Site Con	ditions	(Hard = 1	0, So	oft = 15)		
Average Daily	Traffic (Adt):	40,200 vehicles	3			A	utos:	10		
Peak Hour	r Percentage:	10%		Me	dium Tri	ucks (2 Ax	kles):	10		
Peak H	Hour Volume:	4,020 vehicles	3	He	avy Tru	cks (3+ A)	kles):	10		
Ve	ehicle Speed:	50 mph		Vehicle I	Mix					
Near/Far La	ane Distance:	60 feet			icleType	) (	Day	Evening	Night	Daily
Site Data							7.5%	_	9.6%	-
	nrier Height:	0.0 feet		M	edium T		34.8%		10.3%	
Barrier Type (0-W	-	0.0 Teet			leavy T	rucks: 8	86.5%	2.7%	10.8%	
	ist. to Barrier:	223.0 feet								
Centerline Dist.		223.0 feet		Noise Sc			•	et)		
Barrier Distance		0.0 feet			Auto		000			
Observer Height		35.0 feet			m Truck		000	~ · · ·		
•	Pad Elevation:	0.0 feet		Heav	y Truck	s: 8.0	006	Grade Adj	ustment:	0.0
	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance	e (in f	eet)		
	rier Elevation:	0.0 feet		-	Auto	s: 223.4	23			
	Road Grade:	0.0%		Mediu	n Truck	s: 223.1	37			
				Heav	v Truck	s: 222.6	16			
					,	-	-			
FHWA Noise Mod	el Calculation	S		1					L	
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresne	el 👘	Barrier Atte	en Ber	m Atten
Autos:	71.12	3.63	-6	6.57	0.00	-3	1.88	0.0	000	0.00
Medium Trucks:										0.00
	78.79	-13.60	-6	6.56	0.00	-3	2.18	0.0	000	
Heavy Trucks:				6.56 6.55	0.00 0.00		2.18 2.79	0.0 0.0		0.00
Heavy Trucks: Unmitigated Nois	83.02	-17.56	-6	6.55						0.00
-	83.02	-17.56 out Topo and	-e barrier att	6.55	0.00				000	0.00
Unmitigated Nois	83.02 <b>e Levels (with</b> Leq Peak Hou	-17.56 <b>out Topo and</b> ur Leq Day	-e barrier att	5.55 T <b>enuation)</b>	0.00	-3		0.0	000 CI	0.00 0.00
<b>Unmitigated Nois</b> VehicleType	83.02 e Levels (with Leq Peak Hou 68	-17.56 out Topo and Lur Leq Day 3.2	-6 <b>barrier att</b> ⁄ Leq	5.55 f <b>enuation)</b> i Evening	0.00	-3. Night		0.0 <i>Ldn</i>	000	0.00 0.00 NEL 67.
Unmitigated Nois VehicleType Autos:	83.02 e Levels (with Leq Peak Hou 68 58	-17.56 out Topo and Day 3.2 3.6	-6 <b>barrier att</b> / Leq 66.3	6.55 f <b>enuation)</b> Evening 64.5	0.00	-3. Night 58.5		0.0 <i>Ldn</i> 67.1	000 Cl	0.00 0.00 NEL 67. 57.
Unmitigated Nois VehicleType Autos: Medium Trucks:	83.02 e Levels (with Leq Peak Hou 68 58 58	-17.56 <b>out Topo and</b> <i>ur</i> Leq Day 3.2 3.6 3.9	-6 <i>barrier att</i> / <i>Leq</i> 66.3 57.1	5.55 (enuation) (Evening 64.5 50.8	0.00	-3. Night 58.5 49.2		0.0 <i>Ldn</i> 67.1 57.7	000   Cl	0.00 0.00 NEL 67. 57. 58.
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	83.02 e Levels (with Leq Peak Hou 68 58 58 58	-17.56 <b>out Topo and</b> <i>ur</i> Leq Day 3.2 3.6 3.9 0.1	-6 barrier att / Leq 66.3 57.1 57.5 67.3	5.55 (enuation) (Evening 64.5 50.8 48.4 64.8	0.00	-3. Night 58.5 49.2 49.7		0.0 <i>Ldn</i> 67.1 57.7 58.1	000   Cl	0.00
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L	83.02 e Levels (with Leq Peak Hou 68 58 58 58 69 evels (with To	-17.56 out Topo and a ur Leq Day 3.2 3.6 3.9 9.1 opo and barrier	-6 barrier att / Leq 66.3 57.1 57.5 67.3 r attenuati	5.55 (enuation) (Evening 64.5 50.8 48.4 64.8 (on)	0.00 Leq	-3. Night 58.5 49.2 49.7 59.4		0.0 <i>Ldn</i> 67.1 57.7 58.1 68.0	)000   Cl ,	0.00 0.00 <u>NEL</u> 67. 57. 58. 68.
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L VehicleType	83.02 e Levels (with Leq Peak Hou 68 58 58 69 evels (with To Leq Peak Hou	-17.56 out Topo and a ur Leq Day 3.2 3.6 3.9 3.1 0.1 0 0 and barrier ur Leq Day	-6 barrier att / Leq 66.3 57.1 57.5 67.3 r attenuati / Leq	5.55 (enuation) (Evening 64.5 50.8 48.4 64.8 (on) (Evening	0.00 Leq	-3. Night 58.5 49.2 49.7 59.4 Night		0.0 <i>Ldn</i> 67.1 57.7 58.1 68.0 <i>Ldn</i>	)000   Cl	0.00 0.00 VEL 67. 57. 58. 68. VEL
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L VehicleType Autos:	83.02 e Levels (with Leq Peak Hou 58 58 58 69 evels (with To Leq Peak Hou 68	-17.56 out Topo and a ur Leq Day 3.2 3.6 3.9 0.1 opo and barrier ur Leq Day 3.2	-6 barrier att / Leq 66.3 57.1 57.5 67.3 r attenuati / Leq 66.3	5.55 <b>enuation)</b> Evening 64.5 50.8 48.4 64.8 <b>fon)</b> Evening 64.5	0.00 Leq	-3. Night 58.5 49.2 49.7 59.4 Night 58.5		0.0 <i>Ldn</i> 67.1 57.7 58.1 68.0 <i>Ldn</i> 67.1	000 C/ , C/	0.00 0.00 NEL 67. 58. 68. NEL 67.
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise: Mitigated Noise L VehicleType	83.02 e Levels (with Leq Peak Hou 68 58 58 69 evels (with To Leq Peak Hou 68 58	-17.56 out Topo and a ur Leq Day 3.2 3.6 3.9 0.1 po and barrier ur Leq Day 3.2 3.6 3.9 0.1	-6 barrier att / Leq 66.3 57.1 57.5 67.3 r attenuati / Leq	5.55 (enuation) (Evening 64.5 50.8 48.4 64.8 (on) (Evening	0.00 Leq	-3. Night 58.5 49.2 49.7 59.4 Night		0.0 <i>Ldn</i> 67.1 57.7 58.1 68.0 <i>Ldn</i>	000 Cr	0.00 0.00 NEL 67. 57. 58. 68.

Sunday, November 17, 2019

Scenario: Fourth Floor With Wall Road Name: Redhill Ave. Lot No: Bldg. C

LOUT	vo. Diug. C				~	inarysi. D. Lav	v5011		
SITE	SPECIFIC IN	IPUT DATA			N	OISE MODE	EL INPUTS		
Highway Data				Site Con	ditions	(Hard = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	40,200 vehicles	5			Autos	: 10		
Peak Hour	Percentage:	10%		Me	dium Tru	ucks (2 Axles)	: 10		
Peak H	lour Volume:	4,020 vehicles	;	He	avy Truc	cks (3+ Axles)	: 10		
Ve	hicle Speed:	50 mph		Vehicle	Mix				
Near/Far La	ne Distance:	60 feet			icleType	Day	Evening	Night	Daily
Site Data						Autos: 77.5%	-	9.6%	
	rrier Height:	0.0 feet		M	edium T			10.3%	1.849
Barrier Type (0-W	-	0.0 leet 0.0			Heavy T	rucks: 86.5%	6 2.7%	10.8%	0.74%
Centerline Di	,	100.0 feet							
Centerline Dist.		100.0 feet		Noise So		evations (in f	eet)		
Barrier Distance		0.0 feet			Autos				
Observer Height	(Above Pad):	35.0 feet			m Truck		Crada Adiu	otmont	0.0
P	ad Elevation:	0.0 feet		Heat	y Truck	s: 8.006	Grade Adju	sunen.	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in	feet)		
Barr	ier Elevation:	0.0 feet			Autos	s: 100.941			
	Road Grade:	0.0%		Mediu	m Truck	s: 100.305			
				Heav	/y Truck	s: 99.140			
FHWA Noise Mod	al Calaulation	~							
VehicleType	REMEL	Traffic Flow	Distanc	e Finite	Road	Fresnel	Barrier Atter	n Ber	m Atten
Autos:				3.12	0.00	-29.07			0.00
Medium Trucks:	78.79	-13.60	-:	3.09	0.00	-29.73	0.00	0	0.00
Heavy Trucks:	83.02	-17.56	-:	3.04	0.00	-31.06	0.00	00	0.00
Unmitigated Noise	e Levels (with	out Topo and I	barrier at	tenuation)					
VehicleType	Leq Peak Hou			, Evening	Leq	Night	Ldn	Cl	VEL
Autos:	71	.6 6	69.7	68.0		61.9	70.5		71.
Medium Trucks:	62	2.1 6	60.6	54.2		52.7	61.1		61.
Heavy Trucks:	62	2.4 6	61.0	52.0		53.2	61.6		61.
Vehicle Noise:	72	2.5	70.7	68.3		62.9	71.5		72.
Mitigated Noise L	evels (with To	po and barrier	attenuat	ion)					
VehicleType	Leq Peak Hou	ır Leq Day	Lec	r Evening	Leq	Night	Ldn	Cl	VEL
Autos:	71	.6 6	69.7	68.0		61.9	70.5		71.
Medium Trucks:	62	2.1 6	60.6	54.2		52.7	61.1		61.
Heavy Trucks:	62	2.4 6	61.0	52.0		53.2	61.6		61.
Theavy Trucks.									

Scenario: Fourth Floor With Wall Road Name: Warner Ave. Lot No: Bldg. D

LOUT	VO. Diug. D				~	inarysi. D. La	w5011		
SITE	SPECIFIC IN	NPUT DATA			Ν	OISE MOD	EL INPUTS	5	
Highway Data				Site Con	ditions	(Hard = 10, S	Soft = 15)		
Average Daily	Traffic (Adt):	39,800 vehicles	5			Autos	s: 10		
Peak Hour	Percentage:	10%		Me	dium Tru	ucks (2 Axles	): 10		
Peak H	our Volume:	3,980 vehicles	5	He	avy Truc	cks (3+ Axles)	): 10		
Ve	ehicle Speed:	45 mph		Vehicle I	Mix				
Near/Far La	ane Distance:	60 feet			icleType	Day	Evening	Night	Daily
Site Data				VOII		Autos: 77.5	-	9.6%	
	wiew Usight	0.0 feet		M	, edium T			10.3%	
ва Barrier Type (0-И	<b>rrier Height:</b>	0.0 Teet 0.0			Heavy T			10.8%	
	ist. to Barrier:	65.0 feet							
Centerline Dist.		65.0 feet		Noise Sc		evations (in	feet)		
Barrier Distance		0.0 feet			Auto				
Observer Height		35.0 feet			m Truck				0.0
•	ad Elevation:	0.0 feet		Heav	y Truck	s: 8.006	Grade Adj	ustment.	0.0
Ro	ad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in	i feet)		
Barr	ier Elevation:	0.0 feet			Auto	s: 66.438			
	Road Grade:	0.0%		Mediu	m Truck	s: 65.468			
				Heav	y Truck	s: 63.668			
FHWA Noise Mod	el Calculation REMEL	<b>s</b> Traffic Flow	Distance	e Finite	Pood	Fresnel	Barrier Atte	on Por	m Atten
VehicleType Autos:				.30	0.00	-26.55			0.00
Medium Trucks:				.24	0.00	-20.50			0.00
Heavy Trucks:				.12	0.00	-27.50			0.00
					0.00	-2.9.40	0.0	00	0.00
Unmitigated Nois				,					
VehicleType	Leq Peak Ho		-	Evening	Leq	Night	Ldn		VEL
Autos:			70.2	68.4		62.4	71.0		71.
Medium Trucks:			61.7	55.3		53.8	62.2		62.
Heavy Trucks:			62.5	53.4		54.7	63.0		63.
Vehicle Noise:	73	3.2	71.4	68.8		63.5	72.1		72.
Mitigated Noise L	evels (with To	po and barrier	attenuati	on)					
0	Leg Peak Ho	ur Leq Day	Leq	Evening	Leq	Night	Ldn	Cl	VEL
VehicleType	Leyreakilo		70.0	68.4		62.4	71.0	)	71.
		2.1	70.2	00.4					
VehicleType	. 72		70.2 61.7	55.3		53.8	62.2	2	62.
VehicleType Autos:		3.2 (					62.2 63.0		62. 63.

This page intentionally left blank



APPENDIX 8.3:

INTERIOR NOISE LEVEL CALCULATIONS

This page intentionally left blank



	e: The Bowery												Job N	lumber:	12282	
Floor Plan	<i>ו:</i> A1													Analyst:	B. Lawso	on
Room	n: Bedroom															
(1) Transmission Loss	Calculations (Exterior	Wall)														
				Trans	mission	Loss (d	B) by Fr	equency	/ (Hz)		Fra	ctional A	Area S/(1	10^(TL/1	0))	
Exterior Wall		Wall														
Assembly	Source	Area	STC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	dB
Stucco	David Harris p. 371	69.0	46	27	42	44	46	49	54	0.1377	0.0044	0.0027	0.0017	0.0009	0.0003	
Windows/Doors		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	ABC	30.0	26	21	17	25	32	37	38	0.2383	0.5986	0.0949	0.0189	0.0060	0.0048	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
										0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Totals		99								0.0038	0.0061	0.0010	0.0002	0.0001	0.0001	
Composite Exterior Wall	Sound Transmission Los	ss 10*LO	G(1/t)							24.20	22.15	30.06	36.80	41.60	42.94	38.28
(2) Room Effects (Abso	orption)															
				Abso	rption C	oefficien	ts by Fr	equency	' (Hz)			Absor	ption (Sa	abins)		
Room Surface/ Material	Source	Area	NRC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	
Floor - Carpet	David Harris p. 347	121.0	0.30	0.15	0.17	0.12	0.32	0.52	0.30	18.15	20.57	14.52	38.7	62.9	36.3	
1						0.12	0.52		0.00		20.07	17.02	30.7	62.9		
Floor - Vinyl	David Harris p. 347	0.0	0.05	0.02	0.03	0.05	0.32	0.03	0.02	0.00	0.00	0.00	0.00	02.9	0.00	
5	David Harris p. 347 David Harris p. 348	0.0 121.0	0.05 0.50	0.02 0.10	0.03 0.08											
Ceiling - Drywall	•					0.05	0.03	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	
Ceiling - Drywall Walls - Drywall	David Harris p. 348	121.0	0.50	0.10	0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10	0.00 9.68	0.00 6.05	0.00 3.63	0.00 3.63	0.00 3.63	71.32
Ceiling - Drywall Walls - Drywall Totals	David Harris p. 348	121.0 396.0 638	0.50 0.50	0.10 0.10	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60	0.00 9.68 31.68	0.00 6.05 19.80	0.00 3.63 11.88	0.00 3.63 11.88	0.00 3.63 11.88	71.32
Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect <b>(3) Adjustment Factor</b>	David Harris p. 348 David Harris p. 348	121.0 396.0 638	0.50 0.50	0.10 0.10	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60 69.85	0.00 9.68 31.68 61.93	0.00 6.05 19.80 40.37	0.00 3.63 11.88 54.23	0.00 3.63 11.88 78.43	0.00 3.63 11.88 51.81	
Ceiling - Drywall Walls - Drywall Totals Room Effect <b>(3) Adjustment Factor</b>	David Harris p. 348 David Harris p. 348 10*log (Room Absorpt	121.0 396.0 638	0.50 0.50	0.10 0.10	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60 69.85	0.00 9.68 31.68 61.93	0.00 6.05 19.80 40.37	0.00 3.63 11.88 54.23	0.00 3.63 11.88 78.43	0.00 3.63 11.88 51.81	-1.42
Ceiling - Drywall Walls - Drywall Totals Room Effect	David Harris p. 348 David Harris p. 348 10*log (Room Absorpt ent Factor	121.0 396.0 638	0.50 0.50	0.10 0.10	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60 69.85 -1.51	0.00 9.68 31.68 61.93 -2.04	0.00 6.05 19.80 40.37 -3.90	0.00 3.63 11.88 54.23 -2.61	0.00 3.63 11.88 78.43 -1.01	0.00 3.63 11.88 51.81 -2.81	-1.42
Ceiling - Drywall Walls - Drywall Totals Room Effect <b>(3) Adjustment Factor</b> Sound Source Adjustme	David Harris p. 348 David Harris p. 348 10*log (Room Absorpt ent Factor	121.0 396.0 638	0.50 0.50	0.10 0.10	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60 69.85 -1.51	0.00 9.68 31.68 61.93 -2.04	0.00 6.05 19.80 40.37 -3.90	0.00 3.63 11.88 54.23 -2.61	0.00 3.63 11.88 78.43 -1.01	0.00 3.63 11.88 51.81 -2.81	-1.42
Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustme (4) Calculated Interior I	David Harris p. 348 David Harris p. 348 10*log (Room Absorpt ent Factor	121.0 396.0 638 ion in Sab	0.50 0.50	0.10 0.10	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60 69.85 -1.51 -6.00	0.00 9.68 31.68 61.93 -2.04 -6.00	0.00 6.05 19.80 40.37 -3.90 -6.00	0.00 3.63 11.88 54.23 -2.61 -6.00	0.00 3.63 11.88 78.43 -1.01 -6.00	0.00 3.63 11.88 51.81 -2.81 -6.00	-1.42 -6.00
Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustme (4) Calculated Interior I	David Harris p. 348 David Harris p. 348 10*log (Room Absorpt ent Factor <b>Noise Reduction (dBA)</b>	121.0 396.0 638 ion in Sab	0.50 0.50 ins)/(Ext	0.10 0.10 erior Wal	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60 69.85 -1.51 -6.00 <b>125</b>	0.00 9.68 31.68 61.93 -2.04 -6.00 <b>250</b>	0.00 6.05 19.80 40.37 -3.90 -6.00 <b>500</b>	0.00 3.63 11.88 54.23 -2.61 -6.00 <b>1000</b>	0.00 3.63 11.88 78.43 -1.01 -6.00 <b>2000</b>	0.00 3.63 11.88 51.81 -2.81 -6.00 <b>4000</b>	-1.42 -6.00
Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustme (4) Calculated Interior I	David Harris p. 348 David Harris p. 348 10*log (Room Absorpt ent Factor <i>Noise Reduction (dBA)</i> poom Effects + Adjustmen correction Factors for A	121.0 396.0 638 ion in Sab	0.50 0.50 ins)/(Ext	0.10 0.10 erior Wal	0.08 0.08	0.05 0.05	0.03 0.03	0.03 0.03	0.02 0.03	0.00 12.10 39.60 69.85 -1.51 -6.00 <b>125</b> 16.69	0.00 9.68 31.68 61.93 -2.04 -6.00 <b>250</b> 14.12	0.00 6.05 19.80 40.37 -3.90 -6.00 <b>500</b> 20.17	0.00 3.63 11.88 54.23 -2.61 -6.00 <b>1000</b> 28.19	0.00 3.63 11.88 78.43 -1.01 -6.00 2000 34.59	0.00 3.63 11.88 51.81 -2.81 -6.00 <b>4000</b> 34.13	-1.42 -6.00

# Job Number: 12282

Project Name	: The Bowery												Job N	Number:	12282	
Floor Plan	: A3													Analyst:	B. Lawso	on
Room	: Bedroom															
(1) Transmission Loss	Calculations (Exterior	Wall)														
				Trans	mission	Loss (d	B) by Fr	equency	/ (Hz)		Fra	actional a	Area S/(	10^(TL/1	0))	
Exterior Wall		Wall														
Assembly	Source	Area	STC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	dB
Stucco	David Harris p. 371	78.0	46	27	42	44	46	49	54	0.1556	0.0049	0.0031	0.0020	0.0010	0.0003	
Windows/Doors		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	ABC	30.0	26	21	17	25	32	37	38	0.2383	0.5986	0.0949	0.0189	0.0060	0.0048	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
										0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Totals		108								0.0036	0.0056	0.0009	0.0002	0.0001	0.0000	
Composite Exterior Wall	Sound Transmission Lo	ss 10*LO	G(1/t)							24.38	22.53	30.42	37.14	41.90	43.29	38.61
(2) Room Effects (Abso	orption)	· · ·														
				Abso	rption C	oefficien	ts by Fr	equency	/ (Hz)			Absor	ption (S	abins)		
Room Surface/																
Material	Source	Area	NRC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	
Floor - Carpet	David Harris p. 347	120.0	0.30	0.15	0.17	0.12	0.32	0.52	0.30	18.0	20.4	14.4	38.4	62.4	36.0	
Floor - Vinyl	David Harris p. 347	0.0	0.05	0.02	0.03	0.05	0.03	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	
Ceiling - Drywall	David Harris p. 348	120.0	0.50	0.10	0.08	0.05	0.03	0.03	0.03	12.00	9.60	6.00	3.60	3.60	3.60	
Walls - Drywall	David Harris p. 348	396.0	0.50	0.10	0.08	0.05	0.03	0.03	0.03	39.60	31.68	19.80	11.88	11.88	11.88	
Totals		636								69.6	61.68	40.2	53.88	77.88	51.48	70.8
Room Effect	10*log (Room Absorpt	tion in Sab	oins)/(Ext	erior Wa	ll Area)					-1.91	-2.43	-4.29	-3.02	-1.42	-3.22	-1.83
(3) Adjustment Factor																
Sound Source Adjustme	nt Factor									-6.00	-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
(4) Calculated Interior I	Voise Reduction (dBA)															
										125	250	500	1000	2000	4000	dBA
(Transmission Loss + Ro	oom Effects + Adjustmen	nt Factor)								16.47	14.09	20.13	28.12	34.48	34.07	
Octave Band Frequency	Correction Factors for A	-Weightee	d Sound	Levels						16.10	8.60	3.20	0.00	-1.20	-1.00	
A-Weighted Sound Leve	ls									32.57	22.69	23.33	28.12	33.28	33.07	
Noise Reduction (dBA)										32.45	22.57	23.21	27.99	33.16	32.95	30.6
										32.45	22.57	23.21	27.99	33.10	32.95	50.0

Project Name: The Bowery

Job Number: 12282

Project Name	: The Bowery												Job N	lumber:	12282	
Floor Plan	: B2												,	Analyst:	B. Lawso	on
Room	: Bedroom															
(1) Transmission Loss	Calculations (Exterior	Wall)														
				Trans	mission	Loss (d	B) by Fr	equency	/ (Hz)		Fra	actional	Area S/(1	10^(TL/1	0))	
Exterior Wall		Wall														
Assembly	Source	Area	STC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	dB
Stucco	David Harris p. 371	69.0	46	27	42	44	46	49	54	0.1377	0.0044	0.0027	0.0017	0.0009	0.0003	
Windows/Doors		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	ABC	30.0	26	21	17	25	32	37	38	0.2383	0.5986	0.0949	0.0189	0.0060	0.0048	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
										0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Totals		99								0.0038	0.0061	0.0010	0.0002	0.0001	0.0001	
Composite Exterior Wall	Sound Transmission Lo	ss 10*LO	G(1/t)							24.20	22.15	30.06	36.80	41.60	42.94	38.28
(2) Room Effects (Abso	orption)															
				Abso	rption C	oefficien	ts by Fr	equency	' (Hz)			Absor	ption (Sa	abins)		
Room Surface/ Material	Source	A	NRC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	
Floor - Carpet	David Harris p. 347	Area 143.0	0.30	0.15	0.17	0.12	0.32	0.52	<b>4000</b>	21.45	24.31	17.16	45.76	74.36	4000	
Floor - Vinyl	David Harris p. 347 David Harris p. 347	143.0 0.0	0.30	0.15	0.17	0.12	0.32	0.52	0.30	21.45	24.31	0.00	45.76	0.00	42.90	
Ceiling - Drywall	David Harris p. 347	143.0	0.05	0.02	0.03			0.03	0.02	14.30	11.44	7.15	4.29	4.29	4.29	
Walls - Drywall	David Harris p. 348	432.0	0.50	0.10	0.08	0.05 0.05	0.03 0.03	0.03	0.03	43.20	34.56	21.60	4.29	4.29	4.29	
-	David Hams p. 540	718	0.50	0.10	0.00	0.05	0.05	0.05	0.05				63.01	91.61	60.15	84.10
Totals Room Effect	10*log (Room Absorpt	-	ina)//Evt							78.95 -0.98	70.31 -1.49	45.91 -3.34	-1.96	-0.34	-2.16	-0.71
(3) Adjustment Factor	TO TOG (ROOTH ADSorpt	ion in Sac			li Alea)					-0.98	-1.49	-3.34	-1.90	-0.34	-2.10	-0.71
Sound Source Adjustment	nt Factor									-6.00	-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
(4) Calculated Interior I										-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
(4) Calculated Interior 1	voise Reduction (dBA)									125	250	500	1000	2000	4000	dBA
(Transmission Loss + Ro	oom Effects + Adiustmen	t Factor)							I	17.22	14.67	20.72	28.84	35.26	34.78	
Octave Band Frequency	•	,	d Sound	Levels						16.10	8.60	3.20	0.00	-1.20	-1.00	
A-Weighted Sound Leve		5								33.32	23.27	23.92	28.84	34.06	33.78	
Noise Reduction (dBA)										33.20	23.14	23.80	28.72	33.93	33.65	31.3

#### 159

Project Nam	e: The Bowery												Job I	Number:	12282	
Floor Pla	an: B5													Analyst:	B. Lawso	on
Rool	<i>m:</i> Bedroom															
(1) Transmission Los	s Calculations (Exterior	Wall)														
				Trans	mission	Loss (d	B) by Fr	requency	/ (Hz)		Fra	actional	Area S/(	10^(TL/1	0))	
Exterior Wall		Wall														
Assembly	Source	Area	STC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	dB
Stucco	David Harris p. 371	67.5	46	27	42	44	46	49	54	0.1347	0.0043	0.0027	0.0017	0.0008	0.0003	
Windows/Doors		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	ABC	36.0	26	21	17	25	32	37	38	0.2860	0.7183	0.1138	0.0227	0.0072	0.0057	
l		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
										0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Totals		103.5								0.0041	0.0070	0.0011	0.0002	0.0001	0.0001	
Composite Exterior Wa	II Sound Transmission Lo	ss 10*LO	G(1/t)							23.91	21.56	29.49	36.27	41.10	42.39	37.75
(2) Room Effects (Abs	sorption)		_													
				Abso	rption C	oefficier	ts by Fr	equency	' (Hz)			Absor	ption (S	abins)		
Room Surface/																
Material	Source	Area	NRC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	
Floor - Carpet	David Harris p. 347	138.0	0.30	0.15	0.17	0.12	0.32	0.52	0.30	20.70	23.46	16.56	44.16	71.76	41.40	
Floor - Vinyl	David Harris p. 347	0.0	0.05	0.02	0.03	0.05	0.03	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	
Ceiling - Drywall	David Harris p. 348	138.0	0.50	0.10	0.08	0.05	0.03	0.03	0.03	13.80	11.04	6.90	4.14	4.14	4.14	
Walls - Drywall	David Harris p. 348	423.0	0.50	0.10	0.08	0.05	0.03	0.03	0.03	42.30	33.84	21.15	12.69	12.69	12.69	
Totals		699								76.8	68.34	44.61	60.99	88.59	58.23	81.14
Room Effect	10*log (Room Absorpt	ion in Sat	oins)/(Ext	erior Wa	ll Area)					-1.30	-1.80	-3.66	-2.30	-0.68	-2.50	-1.06
(3) Adjustment Factor	٢															
Sound Source Adjustm	ent Factor									-6.00	-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
(4) Calculated Interior	Noise Reduction (dBA)															
										125	250	500	1000	2000	4000	dBA
(Transmission Loss + F	Room Effects + Adjustmer	t Factor)								16.61	13.76	19.83	27.98	34.43	33.89	
Octave Band Frequenc	y Correction Factors for A	-Weighte	d Sound	Levels						16.10	8.60	3.20	0.00	-1.20	-1.00	
A-Weighted Sound Lev	els									32.71	22.36	23.03	27.98	33.23	32.89	
Noise Reduction (dBA)										32.59	22.23	22.90	27.85	33.10	32.76	30.5

Project Nam	e: The Bowery												Job I	Number:	12282	
Floor Pla	<i>n:</i> S1													Analyst:	B. Lawso	on
Roor	<i>m:</i> Bedroom															
(1) Transmission Loss	s Calculations (Exterior	Wall)														
				Trans	mission	Loss (d	B) by Fr	equency	/ (Hz)		Fra	actional a	Area S/(ˈ	10^(TL/1	0))	
Exterior Wall		Wall														
Assembly	Source	Area	STC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	dB
Stucco	David Harris p. 371	69.0	46	27	42	44	46	49	54	0.1377	0.0044	0.0027	0.0017	0.0009	0.0003	
Windows/Doors		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	ABC	30.0	26	21	17	25	32	37	38	0.2383	0.5986	0.0949	0.0189	0.0060	0.0048	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
										0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Totals		99								0.0038	0.0061	0.0010	0.0002	0.0001	0.0001	
Composite Exterior Wa	II Sound Transmission Lo	ss 10*LO	G(1/t)							24.20	22.15	30.06	36.80	41.60	42.94	38.28
(2) Room Effects (Abs	sorption)															
				Abso	rption C	oefficien	ts by Fr	equency	/ (Hz)			Absor	ption (S	abins)		
Room Surface/																
Material	Source	Area	NRC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	
Floor - Carpet	David Harris p. 347	136.5	0.30	0.15	0.17	0.12	0.32	0.52	0.30	20.48	23.21	16.38	43.68	71.0	40.95	
Floor - Vinyl	David Harris p. 347	0.0	0.05	0.02	0.03	0.05	0.03	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	
Ceiling - Drywall	David Harris p. 348	136.5	0.50	0.10	0.08	0.05	0.03	0.03	0.03	13.65	10.92	6.83	4.10	4.10	4.10	
Walls - Drywall	David Harris p. 348	211.5	0.50	0.10	0.08	0.05	0.03	0.03	0.03	21.15	16.92	10.58	6.35	6.35	6.35	
Totals		484.5								55.275	51.045	33.78	54.12	81.42	51.39	73.7
Room Effect	10*log (Room Absorpt	ion in Sab	oins)/(Ext	erior Wa	ll Area)					-2.53	-2.88	-4.67	-2.62	-0.85	-2.85	-1.28
(3) Adjustment Factor																
Sound Source Adjustme	ent Factor									-6.00	-6.00	-6.00	-6.00	-6.00	-6.00	-6.00
(4) Calculated Interior	Noise Reduction (dBA)															
										125	250	500	1000	2000	4000	dBA
(Transmission Loss + R	Room Effects + Adjustmer	nt Factor)								15.67	13.28	19.39	28.18	34.75	34.09	
Octave Band Frequenc	y Correction Factors for A	-Weighted	d Sound	Levels						16.10	8.60	3.20	0.00	-1.20	-1.00	
										04 77	04 00	22 50	00 40	00 55	33.09	
A-Weighted Sound Lev	els									31.77	21.88	22.59	28.18	33.55	33.09	
A-Weighted Sound Lev Noise Reduction (dBA)	els									31.77 31.65	21.88 21.75	22.59 22.47	28.18 28.06	33.55 33.42	33.09 32.97	30.4

Project Name: The Bowery

Job Number: 12282

Project Name	e: The Bowery												Job I	Number:	12282	
Floor Plai	n: S2													Analyst:	B. Laws	on
Roon	n: Living															
(1) Transmission Loss	Calculations (Exterior	Wall)														
				Trans	mission	Loss (d	B) by Fr	equency	/ (Hz)		Fra	actional	Area S/(	10^(TL/1	0))	
Exterior Wall		Wall														
Assembly	Source	Area	STC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	dB
Stucco	David Harris p. 371	58.9	46	27	42	44	46	49	54	0.1175	0.0037	0.0023	0.0015	0.0007	0.0002	
Windows/Doors		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
	ABC	30.0	26	21	17	25	32	37	38	0.2383	0.5986	0.0949	0.0189	0.0060	0.0048	
	Milgard	24.5	29	19	17	26	33	39	29	0.3084	0.4888	0.0615	0.0123	0.0031	0.0308	
		0.0	0	0	0	0	0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
										0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Totals		113.4								0.0059	0.0096	0.0014	0.0003	0.0001	0.0003	
Composite Exterior Wal	I Sound Transmission Lo	ss 10*LO	G(1/t)							22.32	20.17	28.54	35.40	40.63	35.00	35.05
(2) Room Effects (Abs	orption)															
				Abso	rption C	oefficien	ts by Fr	equency	/ (Hz)			Absor	ption (S	abins)		
Deem Outers /																
Room Surface/																
Room Surface/ Material	Source	Area	NRC	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000	
	Source	<b>Area</b> 214.2	<b>NRC</b> 0.30	<b>125</b> 0.15	<b>250</b> 0.17	<b>500</b> 0.12	<b>1000</b> 0.32	<b>2000</b> 0.52	<b>4000</b> 0.30	<b>125</b> 32.13	<b>250</b> 36.41	<b>500</b> 25.70	<b>1000</b> 68.54		<b>4000</b> 64.26	
Material																
<i>Material</i> Floor - Carpet	David Harris p. 347	214.2	0.30	0.15	0.17	0.12	0.32	0.52	0.30	32.13	36.41	25.70	68.54	111.38	64.26	
<i>Material</i> Floor - Carpet Floor - Vinyl	David Harris p. 347 David Harris p. 347	214.2 0.0	0.30 0.05	0.15 0.02	0.17 0.03	0.12 0.05	0.32 0.03	0.52 0.03	0.30 0.02	32.13 0.00	36.41 0.00	25.70 0.00	68.54 0.00	111.38 0.00	64.26 0.00	
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall	David Harris p. 347 David Harris p. 347 David Harris p. 348	214.2 0.0 214.2	0.30 0.05 0.50	0.15 0.02 0.10	0.17 0.03 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42	36.41 0.00 17.14	25.70 0.00 10.71 26.64	68.54 0.00 6.43	111.38 0.00 6.43	64.26 0.00 6.43	126.02
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall	David Harris p. 347 David Harris p. 347 David Harris p. 348	214.2 0.0 214.2 532.8 961.2	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28	36.41 0.00 17.14 42.62	25.70 0.00 10.71 26.64 63.054	68.54 0.00 6.43 15.98 90.954	111.38 0.00 6.43 15.98	64.26 0.00 6.43 15.98	
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt	214.2 0.0 214.2 532.8 961.2	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83	36.41 0.00 17.14 42.62 96.174	25.70 0.00 10.71 26.64 63.054	68.54 0.00 6.43 15.98 90.954	111.38 0.00 6.43 15.98 133.79	64.26 0.00 6.43 15.98 86.67	
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt	214.2 0.0 214.2 532.8 961.2	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83	36.41 0.00 17.14 42.62 96.174	25.70 0.00 10.71 26.64 63.054	68.54 0.00 6.43 15.98 90.954	111.38 0.00 6.43 15.98 133.79	64.26 0.00 6.43 15.98 86.67	0.46
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustment	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt	214.2 0.0 214.2 532.8 961.2	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83 -0.26	36.41 0.00 17.14 42.62 96.174 -0.72	25.70 0.00 10.71 26.64 63.054 -2.55	68.54 0.00 6.43 15.98 90.954 -0.96	111.38 0.00 6.43 15.98 133.79 0.72	64.26 0.00 6.43 15.98 86.67 -1.17	0.46
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect <i>(3) Adjustment Factor</i> Sound Source Adjustme	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt	214.2 0.0 214.2 532.8 961.2	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83 -0.26	36.41 0.00 17.14 42.62 96.174 -0.72	25.70 0.00 10.71 26.64 63.054 -2.55	68.54 0.00 6.43 15.98 90.954 -0.96	111.38 0.00 6.43 15.98 133.79 0.72	64.26 0.00 6.43 15.98 86.67 -1.17	0.46
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustment (4) Calculated Interior	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt	214.2 0.0 214.2 532.8 961.2 ion in Sab	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83 -0.26 -6.00	36.41 0.00 17.14 42.62 96.174 -0.72 -6.00	25.70 0.00 10.71 26.64 63.054 -2.55 -6.00	68.54 0.00 6.43 15.98 90.954 -0.96 -6.00	111.38 0.00 6.43 15.98 133.79 0.72 -6.00	64.26 0.00 6.43 15.98 86.67 -1.17 -6.00	0.46 -6.00
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustme (4) Calculated Interior	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt 10*log (Room Absorpt Pactor Noise Reduction (dBA)	214.2 0.0 214.2 532.8 961.2 ion in Sab	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10 erior Wa	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83 -0.26 -6.00 <b>125</b>	36.41 0.00 17.14 42.62 96.174 -0.72 -6.00 <b>250</b>	25.70 0.00 10.71 26.64 63.054 -2.55 -6.00 <b>500</b>	68.54 0.00 6.43 15.98 90.954 -0.96 -6.00 <b>1000</b>	111.38 0.00 6.43 15.98 133.79 0.72 -6.00 <b>2000</b>	64.26 0.00 6.43 15.98 86.67 -1.17 -6.00 <b>4000</b>	0.46 -6.00
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustment (4) Calculated Interior	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt ent Factor <i>Noise Reduction (dBA)</i> oom Effects + Adjustmen y Correction Factors for A	214.2 0.0 214.2 532.8 961.2 ion in Sab	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10 erior Wa	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83 -0.26 -6.00 <b>125</b> 16.06	36.41 0.00 17.14 42.62 96.174 -0.72 -6.00 <b>250</b> 13.45	25.70 0.00 10.71 26.64 63.054 -2.55 -6.00 <b>500</b> 19.99	68.54 0.00 6.43 15.98 90.954 -0.96 -6.00 <b>1000</b> 28.44	111.38 0.00 6.43 15.98 133.79 0.72 -6.00 <b>2000</b> 35.35	64.26 0.00 6.43 15.98 86.67 -1.17 -6.00 <b>4000</b> 27.84	0.46 -6.00
<i>Material</i> Floor - Carpet Floor - Vinyl Ceiling - Drywall Walls - Drywall Totals Room Effect (3) Adjustment Factor Sound Source Adjustme (4) Calculated Interior (Transmission Loss + R Octave Band Frequency	David Harris p. 347 David Harris p. 347 David Harris p. 348 David Harris p. 348 10*log (Room Absorpt ent Factor <i>Noise Reduction (dBA)</i> oom Effects + Adjustmen y Correction Factors for A	214.2 0.0 214.2 532.8 961.2 ion in Sab	0.30 0.05 0.50 0.50	0.15 0.02 0.10 0.10 erior Wa	0.17 0.03 0.08 0.08	0.12 0.05 0.05	0.32 0.03 0.03	0.52 0.03 0.03	0.30 0.02 0.03	32.13 0.00 21.42 53.28 106.83 -0.26 -6.00 <b>125</b> 16.06 16.10	36.41 0.00 17.14 42.62 96.174 -0.72 -6.00 <b>250</b> 13.45 8.60	25.70 0.00 10.71 26.64 63.054 -2.55 -6.00 <b>500</b> 19.99 3.20	68.54 0.00 6.43 15.98 90.954 -0.96 -6.00 <b>1000</b> 28.44 0.00	111.38 0.00 6.43 15.98 133.79 0.72 -6.00 2000 35.35 -1.20	64.26 0.00 6.43 15.98 86.67 -1.17 -6.00 <b>4000</b> 27.84 -1.00	126.02 0.46 -6.00 <b>dBA</b>