

# Parkview

NOISE IMPACT ANALYSIS CITY OF LOS ANGELES

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12617-03 Noise Study



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## LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L <sub>eq</sub>	Equivalent continuous (average) sound level
L <sub>max</sub>	Maximum level measured over the time interval
L <sub>min</sub>	Minimum level measured over the time interval
mph	Miles per hour
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PPV	Peak Particle Velocity
Project	Parkview
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 attenuation measures for the proposed Parkview development ("Project"). The Project site is located at 4020 South Compton Avenue, in the City of Los Angeles. It is our understanding that the Project is to consist of up to 130 residential dwelling units. This study has been prepared consistent with applicable City of Los Angeles noise standards and significance criteria, consistent with guidance provided in Appendix G of the California Environmental Quality Act (CEQA). (1)

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

Traffic generated by the proposed Project will influence the traffic noise levels in surrounding offsite areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on roadway segments surrounding the Project site were estimated 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 provided by Linscott, Law & Greenspan, Engineers. (2) To assess the off-site noise level impacts associated with the proposed Project, noise contour boundaries were developed for Existing and Future conditions for both the with and without Project traffic conditions. The off-site traffic noise analysis shows that the Project noise level contributions will be *less than significant* at adjacent noise-sensitive land uses under all traffic scenarios.

#### **OPERATIONAL NOISE ANALYSIS**

The Project-related operational noise sources are expected to include roof-top air conditioning units, outdoor park activity, and parking lot vehicle movements. Using reference noise levels to represent the potential noise sources within Parkview site, this analysis estimates the Project-related operational (stationary-source) noise levels at the noise-sensitive receiver locations. The proposed Project's residential land uses are considered noise-sensitive receivers. Consistent with the existing residential land use in the study area, the Project is not expected to produce any substantial off-site operational noise source activity from its residential uses.

The noise analysis shows that the Project-related operational noise levels will satisfy the City of Los Angeles exterior noise level standards at nearby off-site receiver locations, and therefore, will not generate noise levels which exceed the existing ambient conditions by 5 dBA L<sub>eq</sub> during the daytime and nighttime hours, respectively. As such, the operational noise level impacts associated with the proposed Project activities, such as the roof-top air conditioning units, outdoor park activity, and parking lot vehicle movements, will be *less than significant*.



### **CONSTRUCTION NOISE ANALYSIS**

Project construction is expected to create temporary and intermittent high-level noise conditions at receivers surrounding the Project site when certain activities occur at the closest point to the nearby receiver locations from primary Project construction activity. Using sample reference noise levels to represent the planned construction activities of Parkview site, this analysis estimates the Project-related construction noise levels at nearby sensitive receiver locations. The results of the construction noise analysis show that the unmitigated construction noise levels will satisfy the City of Los Angeles Municipal Code 75 dBA L<sub>eq</sub> exterior construction noise level standard at the nearby sensitive receiver locations and will, therefore, result in a *less than significant* impact.

### **CONSTRUCTION VIBRATION ANALYSIS**

Based on the reference vibration levels provided by the Federal Transit Administration, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec peak-particle-velocity (PPV) at 25 feet. At distances ranging from roughly 111 to 385 feet from primary Project construction activities, construction vibration velocity levels are expected to range from 0.001 to 0.010 in/sec PPV at sensitive residential receiver locations. Based on the Caltrans older residential building damage threshold of 0.3 in/sec PPV, the proposed Project construction activities which are anticipated to remain below the threshold for building damage, and therefore, represents a *less than significant* impact.

#### SUMMARY OF SIGNIFICANCE FINDINGS

The results of this Parkview Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise impact with Project Design Features.

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

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

# 1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Parkview ("Project"). This noise study describes the proposed Project, provides information regarding noise fundamentals, outlines the local regulatory setting, provides the study methods and procedures for traffic 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 impacts.

### **1.1** SITE LOCATION

The proposed Parkview Project is located at 4020 South Compton Avenue, in the City of Los Angeles, as shown on Exhibit 1-A.

#### **1.2 PROJECT DESCRIPTION**

It is our understanding that the Project is to consist of up to 130 residential dwelling units, as shown on Exhibit 1-B.

Project-related stationary-source (operational) noise sources are expected to include: roof-top air conditioning units, outdoor park activity, and parking lot vehicle movements. Further, the proposed residential land uses are considered noise-sensitive receiving land uses and are not expected to include any specific type of operational noise levels beyond the typical noise sources associated with existing residential land use in the Project study area.



#### EXHIBIT 1-A: LOCATION MAP



EXHIBIT 1-B: SITE PLAN





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# 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	$\sim$		
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	VERT FAINT		

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

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

## 2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (3) 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. (4) 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.

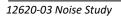
Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Day-Night Average Noise Level (LDN) and the Community Noise Equivalent Level (CNEL), representing a composite 24- hour noise level is utilized. The LDN and CNEL are weighted averages of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The LDN time of day corrections include the addition of 10 decibels to dBA L<sub>eq</sub> sound levels at night between 10:00 p.m. and 7:00 a.m. The CNEL time of day corrections require the addition of 5 decibels to dBA L<sub>eq</sub> sound levels in the evening from 7:00 p.m. to 10:00 p.m., in addition to the corrections for the LDN. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. LDN and CNEL do not represent the actual sound level heard at any time, but rather represent the total sound exposure. The City of Los Angeles relies on the 24-hour LDN level to assess land use compatibility with transportation related noise sources, however, this analysis uses the CNEL noise level to apply the more conservative evening hour corrections to the 24-hour noise levels.

## 2.3 SOUND PROPAGATION

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

### 2.3.1 GEOMETRIC SPREADING

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





#### 2.3.2 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.

#### 2.3.3 ATMOSPHERIC EFFECTS

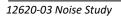
Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing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

#### 2.3.4 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.

## 2.4 NOISE CONTROL

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





## **2.5** Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (5)

### 2.6 LAND USE COMPATIBILITY WITH NOISE

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

### 2.7 COMMUNITY RESPONSE TO NOISE

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. (7) 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. (7)

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 or decrease of 1 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (5)



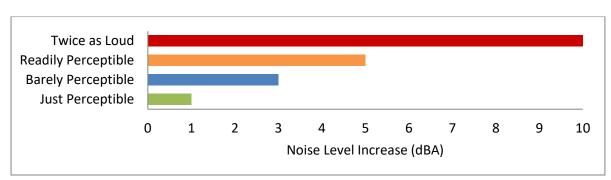


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

### 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. (8)

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.



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# **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. (9) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including the potential environmental noise impacts.

### 3.2 STATE OF CALIFORNIA BUILDING CODE

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 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.

### 3.3 CITY OF LOS ANGELES GENERAL PLAN NOISE ELEMENT

The City of Los Angeles has adopted a Noise Element of the General Plan to identify goals, objectives, and policies for managing noise issues within the City. (10) The following goal and objectives are identified in the General Plan Noise Element:

GoalA city where noise does not reduce the quality of urban life.Objective 1Reduce airport and harbor related noise impacts.



 Objective 2
 Reduce or eliminate nonairport related intrusive noise, especially relative to noise sensitive uses.

 Objective 3
 Reduce or eliminate noise impacts associated with proposed development of land

*Objective 3 Reduce or eliminate noise impacts associated with proposed development of land and changes in land use.* 

Exhibit I of the City of Los Angeles General Plan Noise Element identifies *Guidelines for Noise Compatible Land Use* to evaluate the potential impacts of transportation-related noise. Multifamily residential land use, such as the Project, is considered *conditionally acceptable* with unmitigated exterior noise levels of less than 65 dBA CNEL. For *conditionally acceptable* exterior noise levels, new construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice. (10)

#### 3.4 CITY OF LOS ANGELES OPERATIONAL NOISE STANDARDS

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

The City of Los Angeles Municipal Code, Chapter XI *Noise Regulation*, has set exterior noise limits to control community noise impacts from non-transportation noise sources (such as air-conditioning units, refrigeration, heating, pumping, and filtering equipment). Section 112.02 indicates that stationary noise sources shall not operate in such a manner as to cause the noise level at any sensitive use to exceed the existing ambient noise level by 5 dBA. (11) The City of Los Angeles Municipal Code, Chapter XI, is provided in Appendix 3.1.

#### 3.5 CITY OF LOS ANGELES CONSTRUCTION NOISE STANDARDS

Section 112.05 of the City's Municipal Code identifies exterior noise level limits for construction equipment and states: *in any residential zone or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom*: (11)

• 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment.

Therefore, for the purpose of this noise study, the City of Los Angeles Municipal Code 75 dBA  $L_{eq}$  threshold is used to determine potential Project-related construction noise level impacts at nearby sensitive receiver locations.



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

### 4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is not located within two miles of a public airport or within an airport land use plan; nor is the Project within the vicinity of a private airstrip. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Guideline C.

### 4.2 SIGNIFICANCE CRITERIA

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

#### OFF-SITE OPERATIONAL TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, 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 impact of greater than 1.5 dBA CNEL (FICON, 1992).



#### **OPERATIONAL STATIONARY-SOURCE NOISE**

• If Project-related operational (stationary source) noise levels exceed the exterior ambient noise levels at adjacent sensitive receiver locations by 5 dBA L<sub>eq</sub> (City of Los Angeles Municipal Code, Section 112.02).

#### **CONSTRUCTION NOISE**

• If Project-related construction activities generate noise levels which exceed the exterior noise level standard of 75 dBA L<sub>eq</sub> at adjacent sensitive receiver locations (City of Los Angeles Municipal Code, Section 112.05).

#### **CONSTRUCTION VIBRATION**

• If short-term Project generated construction vibration levels Exceed the Caltrans building damage vibration standard of 0.3 in/sec PPV at sensitive receiver locations; or

Analysia	Land Use	Condition(a)	Significance Criteria		
Analysis	Land Ose	Condition(s)	Daytime	Nighttime	
		if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase		
Off-Site Traffic Noise <sup>1</sup>	Noise- Sensitive <sup>1</sup>	if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase		
Noise		if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase		
Operational Noise <sup>2</sup>	Noise- Sensitive	Exterior Noise Level Standards	Existing Ambient Noise Level plus 5 dBA L <sub>eq</sub>		
Construction	Noise-	Exterior Noise Level Standards <sup>3</sup>	75 dBA L <sub>eq</sub>	n/a	
Construction	Sensitive	Vibration Level Standard <sup>4</sup>	0.3 in/sec PPV	n/a	

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

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

<sup>2</sup> Source: City of Los Angeles Municipal Code, Section 112.02 (Appendix 3.1).

<sup>3</sup> Source: City of Los Angeles Municipal Code, Section 112.05 (Appendix 3.1).

<sup>4</sup> Source: Caltrans, Transportation & Construction Vibration Guidance Manual, September 2013.

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "n/a" = No construction activity is permitted during the nighttime hours.



# 5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, five 24-hour noise level measurements were taken at sensitive receiver locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, May 22<sup>nd</sup>, 2019. Appendix 5.1 provides a series of study area photos.

## 5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (12)

## 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 any 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. (3) 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. (13)* 

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. (13) 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 Hooper Avenue, west of the Project site, near existing single-family residential homes and Thomas Jefferson High School. The noise level measurements collected show an overall 24-hour exterior noise level of 72.0 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 69.4 dBA L<sub>eq</sub> with an average nighttime noise level of 64.0 dBA L<sub>eq</sub>.
- Location L2 represents the noise levels on Compton Avenue, west of the Project site, adjacent to Thomas Jefferson High School. The noise level measurements collected show an overall 24-hour exterior noise level of 77.7 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 72.3 dBA L<sub>eq</sub> with an average nighttime noise level of 71.1 dBA L<sub>eq</sub>.
- Location L3 represents the noise levels north of E 41st Street, south of the Project site, near existing single-family residential homes. The 24-hour CNEL indicates that the overall exterior noise level is 58.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 54.8 dBA Leq with an average nighttime noise level of 50.9 dBA Leq.
- Location L4 represents the noise levels On Martin Luther King Boulevard, north of the Project site, near an existing single-family residential neighborhood. The 24-hour CNEL indicates that the overall exterior noise level is 63.3 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 61.9 dBA L<sub>eq</sub> with an average nighttime noise level of 54.3 dBA L<sub>eq</sub>.
- Location L5 represents the noise levels within Ross Snyder Recreation Center, east of the Project site. The 24-hour CNEL indicates that the overall exterior noise level is 65.0 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 62.4 dBA L<sub>eq</sub> with an average nighttime noise level of 54.7 dBA L<sub>eq</sub>.

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 the arterial roadway network. This includes auto and heavy truck activity near the noise level measurement locations. The 24-hour existing noise level measurements shown on Table 5-1 present the worst-case existing unmitigated ambient noise conditions.

Location <sup>1</sup>	Description	Energy Average Noise Level (dBA L <sub>eq</sub> ) <sup>2</sup>		CNEL
		Daytime	Nighttime	
L1	Located on Hooper Avenue, west of the Project site, near existing single-family residential homes and Thomas Jefferson High School.	69.4	64.0	72.0
L2	Located on Compton Avenue, west of the Project site, adjacent to Thomas Jefferson High School.	72.3	71.1	77.7
L3	Located north of E 41st Street, south of the Project site, near existing single-family residential homes.	54.8	50.9	58.5
L4	Located on Martin Luther King Boulevard, north of the Project site, near an existing single-family residential neighborhood.	61.9	54.3	63.3
L5	Located within Ross Snyder Recreation Center, east of the Project site.	62.4	54.7	65.0

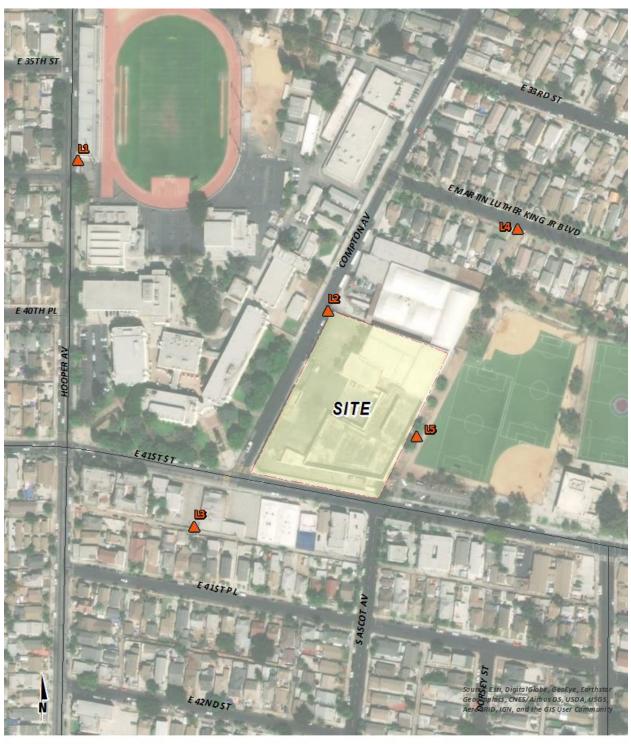
TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

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

<sup>2</sup> The long-term 24-hour measurement printouts 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.





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

#### LEGEND:

A Noise Measurement Locations



# 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. (14) 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. (15) 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.

## 6.2 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 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Los Angeles General Plan Mobility Element. Hard site conditions are used to account for the sound propagation loss over reflective surfaces between the source and receiver.

The Existing and Future average daily traffic volumes used for this study are presented on Table 6-2 and were provided by the *Technical Memorandum*. (2) Table 6-3 presents the time of day vehicle splits by vehicle type, and Table 6-4 presents the total traffic flow distributions (vehicle mixes) used in this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model based on roadway types.



ID	Roadway	Segment	Distance From Centerline to Nearest Adjacent Land Use (Feet) <sup>2</sup>	Vehicle Speed (mph) <sup>3</sup>
1	Central Av.	n/o 41st St.	40'	35
2	Central Av.	s/o 41st St.	40'	35
3	Central Av.	s/o Vernon Av.	40'	35
4	Hooper Av.	n/o 33rd St.	33'	25
5	Hooper Av.	n/o 41st St.	33'	25
6	Hooper Av.	n/o Vernon Av.	33'	25
7	Hooper Av.	s/o Vernon Av.	33'	25
8	Compton Av.	s/o Adams Bl.	33'	25
9	Compton Av.	s/o 41st St.	33'	25
10	Compton Av.	s/o Vernon Av.	40'	25
11	Long Beach Av.	n/o 41st St.	55'	35
12	Long Beach Av.	s/o 41st St.	55'	35
13	41st St.	e/o Central Av.	33'	25
14	41st St.	e/o Hooper Av.	33'	25
15	41st St.	w/o Long Beach Av.	33'	25
16	41st St.	e/o Long Beach Av.	33'	25

#### **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 functional roadway classification provided in the City of Los Angeles General Plan Mobility Element. <sup>2</sup> Posted speed limits.



			A	Average Daily Traffic (1,000's) <sup>1</sup>			
ID	Roadway	Sagment	Exist	Existing		ure	
U		lway Segment	Without Project	With Project	Without Project	With Project	
1	Central Av.	n/o 41st St.	19.4	19.4	20.3	20.3	
2	Central Av.	s/o 41st St.	18.8	18.9	19.6	19.6	
3	Central Av.	s/o Vernon Av.	17.8	17.9	18.5	18.5	
4	Hooper Av.	n/o 33rd St.	15.2	15.3	15.7	15.8	
5	Hooper Av.	n/o 41st St.	16.6	16.6	17.1	17.1	
6	Hooper Av.	n/o Vernon Av.	15.6	15.7	16.2	16.3	
7	Hooper Av.	s/o Vernon Av.	14.3	14.3	14.8	14.8	
8	Compton Av.	s/o Adams Bl.	6.6	6.8	7.0	7.2	
9	Compton Av.	s/o 41st St.	8.0	8.1	8.3	8.4	
10	Compton Av.	s/o Vernon Av.	12.4	12.4	12.9	12.9	
11	Long Beach Av.	n/o 41st St.	8.9	8.9	10.0	10.0	
12	Long Beach Av.	s/o 41st St.	10.8	10.8	11.7	11.7	
13	41st St.	e/o Central Av.	7.3	7.5	8.1	8.2	
14	41st St.	e/o Hooper Av.	8.4	8.6	9.2	9.4	
15	41st St.	w/o Long Beach Av.	8.7	8.7	9.3	9.4	
16	41st St.	e/o Long Beach Av.	7.4	7.4	7.6	7.7	

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

<sup>1</sup> Source: Linscott, Law & Greenspan, Engineers.

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

Time Devied	Vehicle Type				
Time Period	Autos	Medium Trucks	Heavy Trucks		
Daytime (7:00 a.m 7:00 p.m.)	77.50%	84.80%	86.50%		
Evening (7:00 p.m 10:00 p.m.)	12.90%	4.90%	2.70%		
Nighttime (10:00 p.m 7:00 p.m.)	9.60%	10.30%	10.80%		
Total:	100.00%	100.00%	100.00%		

Source: Typical southern California vehicle mix.

#### TABLE 6-4: DISTRIBUTION OF TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)

		Tabal		
Roadway	Autos	Medium Trucks	Heavy Trucks	Total
All Roadways	97.42%	1.84%	0.74%	100.00%

Source: Typical southern California vehicle mix.



## 6.3 CONSTRUCTION VIBRATION ASSESSMENT

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.

However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-5. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate potential vibration impacts with the following vibration assessment methods defined by the FTA. To describe potential vibration impacts the FTA provides the following equation:  $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$ 

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

#### TABLE 6-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018.



# 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 *Technical Memorandum*. (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 Without / With Project Conditions</u>: This scenario refers to the existing present-day noise conditions, without and with the proposed Project.
- <u>Future Without / With Project</u>: This scenario refers to the background future noise conditions without and with the proposed Project, and includes all cumulative projects identified in the Traffic Impact Analysis.

## 7.1 TRAFFIC NOISE CONTOURS

To quantify the Project's operational traffic noise impacts on the surrounding areas, the changes in traffic noise levels on the study area roadway segments conveying Project traffic were calculated based on the changes in the average daily traffic volumes. 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 affect ambient noise levels. In addition, since the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contribution from any surrounding stationary noise sources within the Project study area. Tables 7-1 to 7-4 present a summary of the exterior traffic noise levels for the study area roadway segments analyzed from the without Project to the with Project conditions in each of the two timeframes: Existing and Future conditions. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.



	Road	Segment	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet) <sup>1</sup>		
ID				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o 41st St.	65.5	RW	101	320
2	Central Av.	s/o 41st St.	65.4	RW	98	310
3	Central Av.	s/o Vernon Av.	65.1	RW	93	294
4	Hooper Av.	n/o 33rd St.	61.5	RW	34	109
5	Hooper Av.	n/o 41st St.	61.9	RW	37	119
6	Hooper Av.	n/o Vernon Av.	61.7	RW	35	112
7	Hooper Av.	s/o Vernon Av.	61.3	RW	RW	102
8	Compton Av.	s/o Adams Bl.	57.9	RW	RW	47
9	Compton Av.	s/o 41st St.	58.7	RW	RW	57
10	Compton Av.	s/o Vernon Av.	60.1	RW	RW	92
11	Long Beach Av.	n/o 41st St.	60.9	RW	RW	147
12	Long Beach Av.	s/o 41st St.	61.8	RW	57	180
13	41st St.	e/o Central Av.	58.4	RW	RW	52
14	41st St.	e/o Hooper Av.	59.0	RW	RW	60
15	41st St.	w/o Long Beach Av.	59.1	RW	RW	62
16	41st St.	e/o Long Beach Av.	58.4	RW	RW	53

TABLE 7-1: EXISTING WITHOUT PROJECT CONDITIONS NOISE CONTOURS



	Road	Segment	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet) <sup>1</sup>		
ID				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o 41st St.	65.5	RW	101	320
2	Central Av.	s/o 41st St.	65.4	RW	98	311
3	Central Av.	s/o Vernon Av.	65.2	RW	93	295
4	Hooper Av.	n/o 33rd St.	61.6	RW	34	109
5	Hooper Av.	n/o 41st St.	61.9	RW	38	119
6	Hooper Av.	n/o Vernon Av.	61.7	RW	36	112
7	Hooper Av.	s/o Vernon Av.	61.3	RW	RW	102
8	Compton Av.	s/o Adams Bl.	58.0	RW	RW	48
9	Compton Av.	s/o 41st St.	58.8	RW	RW	58
10	Compton Av.	s/o Vernon Av.	60.1	RW	RW	92
11	Long Beach Av.	n/o 41st St.	60.9	RW	RW	148
12	Long Beach Av.	s/o 41st St.	61.8	RW	57	180
13	41st St.	e/o Central Av.	58.5	RW	RW	53
14	41st St.	e/o Hooper Av.	59.1	RW	RW	62
15	41st St.	w/o Long Beach Av.	59.1	RW	RW	62
16	41st St.	e/o Long Beach Av.	58.4	RW	RW	53

TABLE 7-2: EXISTING WITH PROJECT CONDITIONS NOISE CONTOURS



	Road	Segment	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet) <sup>1</sup>		
ID				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o 41st St.	65.7	RW	106	335
2	Central Av.	s/o 41st St.	65.5	RW	102	322
3	Central Av.	s/o Vernon Av.	65.3	RW	96	304
4	Hooper Av.	n/o 33rd St.	61.7	RW	35	112
5	Hooper Av.	n/o 41st St.	62.1	RW	39	122
6	Hooper Av.	n/o Vernon Av.	61.8	RW	37	116
7	Hooper Av.	s/o Vernon Av.	61.4	RW	33	106
8	Compton Av.	s/o Adams Bl.	58.2	RW	RW	50
9	Compton Av.	s/o 41st St.	58.9	RW	RW	59
10	Compton Av.	s/o Vernon Av.	60.3	RW	RW	95
11	Long Beach Av.	n/o 41st St.	61.4	RW	RW	166
12	Long Beach Av.	s/o 41st St.	62.1	RW	61	194
13	41st St.	e/o Central Av.	58.8	RW	RW	58
14	41st St.	e/o Hooper Av.	59.4	RW	RW	66
15	41st St.	w/o Long Beach Av.	59.4	RW	RW	67
16	41st St.	e/o Long Beach Av.	58.6	RW	RW	55

TABLE 7-3: FUTURE WITHOUT PROJECT CONDITIONS NOISE CONTOURS



	Road	Segment	CNEL at Nearest Adjacent Land Use (dBA)	Distance to Contour from Centerline (Feet) <sup>1</sup>		
ID				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Central Av.	n/o 41st St.	65.7	RW	106	335
2	Central Av.	s/o 41st St.	65.6	RW	102	323
3	Central Av.	s/o Vernon Av.	65.3	RW	97	305
4	Hooper Av.	n/o 33rd St.	61.7	RW	36	113
5	Hooper Av.	n/o 41st St.	62.1	RW	39	122
6	Hooper Av.	n/o Vernon Av.	61.9	RW	37	117
7	Hooper Av.	s/o Vernon Av.	61.4	RW	33	106
8	Compton Av.	s/o Adams Bl.	58.3	RW	RW	51
9	Compton Av.	s/o 41st St.	59.0	RW	RW	60
10	Compton Av.	s/o Vernon Av.	60.3	RW	RW	96
11	Long Beach Av.	n/o 41st St.	61.4	RW	RW	167
12	Long Beach Av.	s/o 41st St.	62.1	RW	61	194
13	41st St.	e/o Central Av.	58.9	RW	RW	59
14	41st St.	e/o Hooper Av.	59.5	RW	RW	67
15	41st St.	w/o Long Beach Av.	59.5	RW	RW	67
16	41st St.	e/o Long Beach Av.	58.6	RW	RW	55

TABLE 7-4: FUTURE WITH PROJECT CONDITIONS NOISE CONTOURS



## 7.2 EXISTING PLUS PROJECT BUILDOUT CONDITION PROJECT TRAFFIC NOISE LEVELS

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project (E+P) has been included in this report. However, the analysis of existing traffic noise levels plus traffic noise generated by the proposed Project (E+P) scenario will not actually occur since the Project would not be fully constructed and operational until Future Year conditions.

Table 7-5 presents a comparison of the Existing without and with Project conditions CNEL noise levels. Table 7-1 presents the Existing without Project conditions noise level contours that are expected to range from 57.9 to 65.5 dBA CNEL. Table 7-2 shows the Existing with Project conditions noise level contours that are expected to range from 58.0 to 65.5 dBA CNEL. As shown on Table 7-5 the Project is expected to generate an exterior noise level increase of up to 0.1 dBA CNEL under Existing conditions at land uses adjacent to the study area the roadway segments.

			CNEL at Adjacent Land Use (dBA) <sup>1</sup>			
ID	Road	Segment	No Project	With Project	Project Addition	
1	Central Av.	n/o 41st St.	65.5	65.5	0.0	
2	Central Av.	s/o 41st St.	65.4	65.4	0.0	
3	Central Av.	s/o Vernon Av.	65.1	65.2	0.1	
4	Hooper Av.	n/o 33rd St.	61.5	61.6	0.1	
5	Hooper Av.	n/o 41st St.	61.9	61.9	0.0	
6	Hooper Av.	n/o Vernon Av.	61.7	61.7	0.0	
7	Hooper Av.	s/o Vernon Av.	61.3	61.3	0.0	
8	Compton Av.	s/o Adams Bl.	57.9	58.0	0.1	
9	Compton Av.	s/o 41st St.	58.7	58.8	0.1	
10	Compton Av.	s/o Vernon Av.	60.1	60.1	0.0	
11	Long Beach Av.	n/o 41st St.	60.9	60.9	0.0	
12	Long Beach Av.	s/o 41st St.	61.8	61.8	0.0	
13	41st St.	e/o Central Av.	58.4	58.5	0.1	
14	41st St.	e/o Hooper Av.	59.0	59.1	0.1	
15	41st St.	w/o Long Beach Av.	59.1	59.1	0.0	
16	41st St.	e/o Long Beach Av.	58.4	58.4	0.0	

 TABLE 7-5:
 EXISTING CONDITION OFF-SITE PROJECT-RELATED TRAFFIC NOISE INCREASES

<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.



# 7.3 FUTURE PROJECT TRAFFIC NOISE LEVELS

Table 7-6 presents a comparison of the Future without and with Project conditions CNEL noise levels. Table 7-3 presents the Future without Project conditions noise level contours that are expected to range from 58.2 to 65.7 dBA CNEL. Table 7-4 shows the Future with Project conditions noise level contours that are expected to range from 58.3 to 65.7 dBA CNEL. As shown on Table 7-6 the Project is expected to generate an exterior noise level increase of up to 0.1 dBA CNEL, and will satisfy the significance thresholds identified in Section 4 on all roadway segments. Therefore, the off-site Project-related traffic noise level increases are considered *less than significant* under Future conditions at land uses adjacent to the study area the roadway segments.

ID	Road	Segment	CNEL at Adjacent Land Use (dBA) <sup>1</sup>			Threshold Exceeded? <sup>2</sup>
			No Project	With Project	Project Addition	
1	Central Av.	n/o 41st St.	65.7	65.7	0.0	No
2	Central Av.	s/o 41st St.	65.5	65.6	0.1	No
3	Central Av.	s/o Vernon Av.	65.3	65.3	0.0	No
4	Hooper Av.	n/o 33rd St.	61.7	61.7	0.0	No
5	Hooper Av.	n/o 41st St.	62.1	62.1	0.0	No
6	Hooper Av.	n/o Vernon Av.	61.8	61.9	0.1	No
7	Hooper Av.	s/o Vernon Av.	61.4	61.4	0.0	No
8	Compton Av.	s/o Adams Bl.	58.2	58.3	0.1	No
9	Compton Av.	s/o 41st St.	58.9	59.0	0.1	No
10	Compton Av.	s/o Vernon Av.	60.3	60.3	0.0	No
11	Long Beach Av.	n/o 41st St.	61.4	61.4	0.0	No
12	Long Beach Av.	s/o 41st St.	62.1	62.1	0.0	No
13	41st St.	e/o Central Av.	58.8	58.9	0.1	No
14	41st St.	e/o Hooper Av.	59.4	59.5	0.1	No
15	41st St.	w/o Long Beach Av.	59.4	59.5	0.1	No
16	41st St.	e/o Long Beach Av.	58.6	58.6	0.0	No

## TABLE 7-6: FUTURE 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).



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# 8 **RECEIVER LOCATIONS**

The City of Los Angeles General Plan Noise Element defines noise-sensitive uses as: *single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodgings and other residential uses; houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves, and parks.* 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, natural open space, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures.

To assess the potential for long-term operational and short-term construction impacts, the following sensitive receiver locations as shown on Exhibit 8-A were identified as representative locations for analysis.

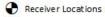
- R1: Located approximately 140 feet west of the Project site on Compton Avenue, R1 represents existing school buildings.
- R2: Location R2 represents an existing residential outdoor living area (backyard) and home located approximately 242 feet north of the Project site on Martin Luther King Jr. Boulevard.
- R3: Location R3 represents an existing residential outdoor living area (backyard) and home located approximately 371 feet northeast of the Project site on Martin Luther King Jr. Boulevard.
- R4: Location R4 represents an existing residential outdoor living area (backyard) and home located approximately 183 feet south of the Project site on Ascot Avenue.
- R5: Location R5 represents an existing church building located approximately 97 feet southwest of the Project site on 41<sup>st</sup> Street.





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

## LEGEND:



8'

**6'** Existing Barrier Height (in feet)

— Distance from receiver to Project site boundary (in feet) Existing Barrier

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# 9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts due to the Project's stationary noise sources on the off-site sensitive receiver locations identified in Section 8. Exhibit 9-A identifies the noise source locations used to assess the Project-related operational noise levels.

# 9.1 OPERATIONAL NOISE SOURCES

Project-related stationary-source (operational) noise sources are expected to include: roof-top air conditioning units, outdoor park activity, and parking lot vehicle movements. Further, the proposed residential land uses are considered noise-sensitive receiving land uses and are not expected to include any specific type of operational noise levels beyond the typical noise sources associated with existing residential land use in the Project study area.

# 9.2 **REFERENCE NOISE LEVELS**

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. Table 9-1 presents a summary of the reference noise level measurements used in this analysis to describe the Project operational noise levels.

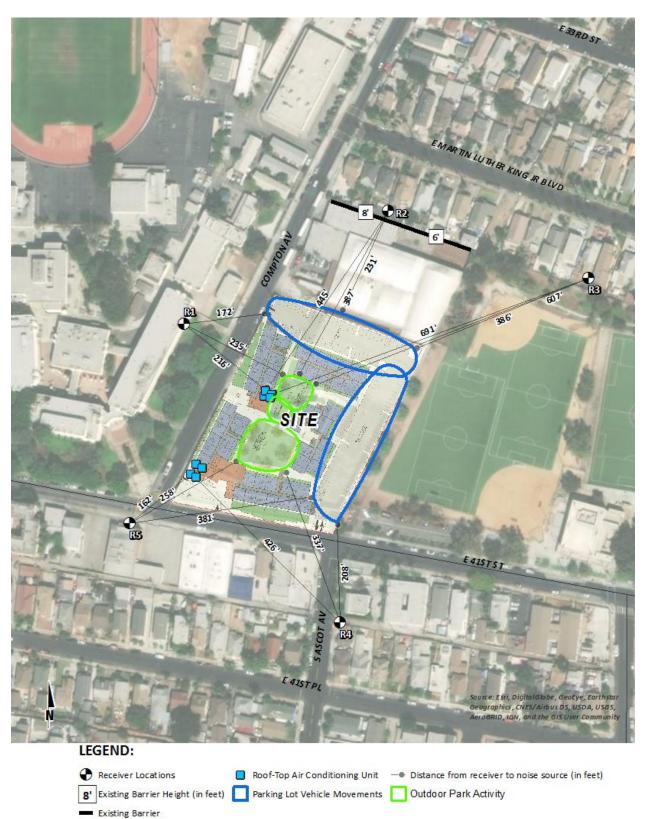
Neise Course	Duration	Dist. From	Noise Source	Referen Level (c	
Noise Source	(hh:mm:ss)	Source Height (Feet) (Feet)		@ Ref. Dist.	@ 50 Feet
Roof-Top Air Conditioning Units <sup>1</sup>	01:00:00	5'	5'	77.2	57.2
Outdoor Park Activity <sup>2</sup>	00:15:00	5'	5'	63.4	43.4
Parking Lot Vehicle Movements <sup>3</sup>	01:00:00	10'	5'	51.3	37.3

 TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

<sup>1</sup> As measured by Urban Crossroads, Inc. on 7/27/2015 at the Santee Walmart located at 170 Town Center Parkway.

<sup>2</sup> As measured by Urban Crossroads, Inc. on 10/8/2014 at a community park in Ladera Ranch in unincorporated Orange County.

<sup>3</sup> As measured by Urban Crossroads, Inc. on 8/24/2016 at an apartment community in the City of Riverside.



**EXHIBIT 9-A: OPERATIONAL NOISE SOURCE AND RECEIVER LOCATIONS** 



## 9.2.1 ROOF-TOP AIR CONDITIONING UNITS

At the time this noise study was prepared, the specific model numbers and specifications of the air conditioning units to be used at the Project site were unknown. Therefore, to present a conservative approach, a reference noise level measurement of commercial-sized air conditioning units (roof-top) is used to represent worst-case conditions. The reference noise levels measurements were taken at the Santee Walmart on July  $27^{th}$ , 2015. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe mechanical roof-top air conditioning units on the roof of an existing Walmart store. The reference noise level represents Lennox SCA120 series 10-ton model packaged air conditioning units. Using the uniform reference distance of 50 feet, the noise level is 57.2 dBA L<sub>eq</sub>. The operating conditions of the reference noise level measurement reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F.

# 9.2.2 OUTDOOR PARK ACTIVITY

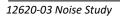
An outdoor park activity reference noise level measurement was taken at the Founder's Park in the community of Ladera Ranch in unincorporated County of Orange on October  $8^{th}$ , 2014. At 50 feet, the reference noise level is 43.4 dBA  $L_{eq}$  at a noise source height of 5 feet. The reference noise level measurement includes children playing on a playground, a children's soccer game, and parents and children cheering and talking.

## 9.2.3 PARKING LOT VEHICLE MOVEMENTS

A parking lot vehicle movements reference noise level measurement was taken at the Windmere apartment community in the City of Riverside on August  $24^{th}$ , 2016. At 50 feet, the reference noise level is 37.3 dBA  $L_{eq}$  at a noise source height of 5 feet. The reference noise level measurement includes vehicles entering and existing the parking area, a car alarm, doors closing, and background vehicle movements.

## 9.3 OPERATIONAL NOISE LEVELS

Based upon the reference noise levels, it is possible to estimate the Project operational stationary-source noise levels at each of the nearby sensitive receiver locations. The operational noise level calculations shown on Table 9-2 account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. With geometric spreading, sound levels attenuate (or decrease) at a rate of 6 dB for each doubling of distance from a point source. Table 9-2 indicates that the noise levels associated with the roof-top air conditioning units, outdoor park activity, and parking lot vehicle movements are expected to range from 25.7 to 47.1 dBA L<sub>eq</sub> at the nearby sensitive receiver locations.





		Noise Source <sup>2</sup>		Unmitigated Total Project
Receiver Location <sup>1</sup>	Roof-Top Air Conditioning Units	Outdoor Park Activity	Parking Lot Vehicle Movements	Operational Noise Levels (dBA L <sub>eq</sub> ) <sup>3</sup>
R1	44.5	30.0	26.6	44.7
R2	38.2	25.6	18.5	38.5
R3	24.3	11.5	19.6	25.7
R4	38.6	26.8	24.9	39.0
R5	47.0	29.1	19.7	47.1

## TABLE 9-2: OPERATIONAL NOISE LEVELS

<sup>1</sup> See Exhibit 9-A for the receiver and noise source locations.

<sup>2</sup> Reference noise sources as shown on Table 9-1.

<sup>3</sup> Calculations for each noise source are provided in Appendix 9.1.

## 9.3 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

The City of Los Angeles Municipal Code has set exterior noise limits to control community noise impacts from non-transportation noise sources (such as air-conditioning units, refrigeration, heating, pumping, and filtering equipment). Section 112.02 indicates that stationary noise sources shall not operate in such a manner as to cause the noise level at any sensitive use to exceed the existing ambient noise level by 5 dBA. (11) Tables 9-3 and 9-4 show the Project-only operational noise levels, the closest ambient noise level measurement (see Section 5), and the adjusted operational noise level limits at each of the nearby sensitive receiver locations. Both the daytime and nighttime ambient noise levels are used to evaluate the potential Project-related operational noise levels, as shown on Tables 9-3 and 9-4, respectively.

Table 9-3 shows the daytime operational noise levels limits, per the City of Los Angeles Municipal Code, approach 72.3 dBA  $L_{eq}$ , and the Project-only operational noise levels ranging from 25.7 to 47.1 dBA  $L_{eq}$  will satisfy the standards at each sensitive receiver location. Table 9-4 shows the nighttime operational noise levels limits, per the City of Los Angeles Municipal Code, will approach 71.1 dBA  $L_{eq}$ , and the Project-only operational noise levels ranging from 25.7 to 47.1 dBA  $L_{eq}$  will satisfy the standards at each sensitive receiver location.

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Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels⁴	Ambient Plus 5 dBA	Threshold <sup>5</sup>	Threshold Exceeded? <sup>6</sup>
R1	44.7	L2	72.3	+5	77.3	No
R2	38.5	L4	61.9	+5	66.9	No
R3	25.7	L4	61.9	+5	66.9	No
R4	39.0	L3	54.8	+5	59.8	No
R5	47.1	L3	54.8	+5	59.8	No

TABLE 9-3: DAYTIME OPERATIONAL NOISE LEVEL COMPLIANCE (DBA LEQ)

<sup>1</sup> See Exhibit 9-A for the sensitive receiver locations and noise source locations.

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

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

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

<sup>5</sup> Ambient plus 5 dBA per the Municipal Code Section 112.02(a).

<sup>6</sup> Do the Project operational noise levels exceed the ambient plus 5 dBA threshold identified by the City of Los Angeles?

#### TABLE 9-4: NIGHTTIME OPERATIONAL NOISE LEVEL COMPLIANCE (DBA LEQ)

Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels <sup>4</sup>	Ambient Plus 5 dBA	Threshold⁵	Threshold Exceeded? <sup>6</sup>
R1	44.7	L2	71.1	+5	76.1	No
R2	38.5	L4	54.3	+5	59.3	No
R3	25.7	L4	54.3	+5	59.3	No
R4	39.0	L3	50.9	+5	55.9	No
R5	47.1	L3	50.9	+5	55.9	No

<sup>1</sup> See Exhibit 9-A for the sensitive receiver locations and noise source locations.

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

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

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

<sup>5</sup> Ambient plus 5 dBA per the Municipal Code Section 112.02(a).

<sup>6</sup> Do the Project operational noise levels exceed the ambient plus 5 dBA threshold identified by the City of Los Angeles?



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# **10 CONSTRUCTION IMPACTS**

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

## **10.1** CONSTRUCTION NOISE LEVELS

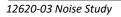
Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers and portable generators that when combined can reach high levels. The number and mix of construction equipment is expected to occur in the following stages:

- Demolition
- Site Preparation
- 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 62 dBA to more than 80 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. 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 *Parkview Air Quality* study prepared by Urban Crossroads Inc. (16)

# **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 reference construction 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	Duration (h:mm:ss)	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>6</sup>
1	Truck Pass-Bys & Dozer Activity <sup>1</sup>	0:01:15	30'	63.6	59.2
2	Dozer Activity <sup>1</sup>	0:01:00	30'	68.6	64.2
3	Construction Vehicle Maintenance Activities <sup>2</sup>	0:01:00	30'	71.9	67.5
4	Foundation Trenching <sup>2</sup>	0:01:01	30'	72.6	68.2
6	Residential Framing <sup>3</sup>	0:02:00	30'	66.7	62.3
7	Concrete Paver Activities <sup>4</sup>	0:01:00	30'	70.0	65.6
8	Concrete Mixer Pour & Paving Activities <sup>4</sup>	0:01:00	30'	70.3	65.9
9	Forklift, Jackhammer, & Metal Truck Bed Loading <sup>5</sup>	0:02:06	50'	67.9	67.9

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> As measured by Urban Crossroads, Inc. on 9/9/16 during the demolition of an existing paved parking lot at 41 Corporate Park in Irvine.

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

## **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 in the City of Los Angeles. Based on the reference construction noise levels, the Project-related construction noise levels when the highest reference noise level is operating at a single point nearest the sensitive receiver location will range from 43.1 to 61.2 dBA  $L_{eq}$  at the sensitive receiver locations in the City of Los Angeles. Exhibit 10-A shows the construction activity noise source location and the distance to each nearby sensitive receiver location.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA Leq)
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: SITE PREPARATION EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>eq</sub> ) <sup>4</sup>	Construction Noise Level (dBA Leq)
R1	152'	-9.7	0.0	54.5
R2	256'	-14.2	-5.0	45.0
R3	385'	-17.7	0.0	46.4
R4	196'	-11.9	0.0	52.3
R5	111'	-6.9	0.0	57.2

 $^{\rm 1}$  Reference construction noise level measurements taken by Urban Crossroads, Inc.

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

 $^{\rm 3}$  Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.



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 10-3: GRADING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>eq</sub> ) <sup>4</sup>	Construction Noise Level (dBA Leq)
R1	152'	-9.7	0.0	54.5
R2	256'	-14.2	-5.0	45.0
R3	385'	-17.7	0.0	46.4
R4	196'	-11.9	0.0	52.3
R5	111'	-6.9	0.0	57.2

 $^{\rm 1}$  Reference construction noise level measurements taken by Urban Crossroads, Inc.

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

 $^{\rm 3}$  Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.



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
Residential Framing	62.3
Highest Reference Noise Level at 50 Feet (dBA Leq):	68.2

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

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>eq</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>eq</sub> )
R1	152'	-9.7	0.0	58.5
R2	256'	-14.2	-5.0	49.0
R3	385'	-17.7	0.0	50.4
R4	196'	-11.9	0.0	56.3
R5	111'	-6.9	0.0	61.2

<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.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> )
Concrete Paver Activities	65.6
Concrete Mixer Pour & Paving Activities	65.9
Highest Reference Noise Level at 50 Feet (dBA $L_{eq}$ ):	65.9

#### TABLE 10-5: PAVING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>eq</sub> ) <sup>4</sup>	Construction Noise Level (dBA L <sub>eq</sub> )
R1	152'	-9.7	0.0	56.2
R2	256'	-14.2	-5.0	46.7
R3	385'	-17.7	0.0	48.1
R4	196'	-11.9	0.0	54.0
R5	111'	-6.9	0.0	58.9

 $^{\rm 1}$  Reference construction noise level measurements taken by Urban Crossroads, Inc.

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

 $^{\rm 3}$  Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.



Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA Leq)		
Residential Framing	62.3		
Highest Reference Noise Level at 50 Feet (dBA Leq):	62.3		

#### TABLE 10-6: ARCHITECTURAL COATING EQUIPMENT NOISE LEVELS

Receiver Location	Distance to Construction Activity (Feet) <sup>2</sup>	Distance Attenuation (dBA L <sub>eq</sub> ) <sup>3</sup>	Estimated Noise Barrier Attenuation (dBA L <sub>eq</sub> ) <sup>4</sup>	Construction Noise Level (dBA Leq)
R1	152'	-9.7	0.0	52.6
R2	256'	-14.2	-5.0	43.1
R3	385'	-17.7	0.0	44.5
R4	196'	-11.9	0.0	50.4
R5	111'	-6.9	0.0	55.3

<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.

 $^{\rm 3}$  Point (stationary) source drop off rate of 6.0 dBA per doubling of distance.





**EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE AND RECEIVER LOCATIONS** 



# **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 edge of the Project site boundaries. As shown on Table 10-7, the unmitigated construction noise levels are expected to range from 43.1 to 61.2 dBA  $L_{eq}$  at the sensitive receiver locations in the City of Los Angeles. To control noise impacts associated with the construction of the proposed Project, the City of Los Angeles Municipal Code has established an exterior noise level standard of 75 dBA  $L_{eq}$ .

Receiver Location <sup>1</sup>	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Noise Levels <sup>2</sup>
R1	54.5	54.5	58.5	56.2	52.6	58.5
R2	45.0	45.0	49.0	46.7	43.1	49.0
R3	46.4	46.4	50.4	48.1	44.5	50.4
R4	52.3	52.3	56.3	54.0	50.4	56.3
R5	57.2	57.2	61.2	58.9	55.3	61.2

TABLE 10-7: UNMITIGATED CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY (DBA LEQ)

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

<sup>2</sup> Estimated construction noise levels during peak operating conditions.

Based on the Project-related construction noise levels approaching 61.2 dBA  $L_{eq}$ , the unmitigated noise levels satisfy the City of Los Angeles Municipal Code 75 dBA  $L_{eq}$  exterior noise level standard for construction. Therefore, Project construction noise levels represent a *less than significant* noise impact at adjacent sensitive receiver locations, as shown on Table 10-8.

Receiver Location <sup>1</sup>	Highest Project Construction Noise Level <sup>2</sup>	Threshold <sup>3</sup>	Threshold Exceeded? <sup>4</sup>
R1	58.5	75	No
R2	49.0	75	No
R3	50.4	75	No
R4	56.3	75	No
R5	61.2	75	No

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

<sup>2</sup> Peak Project construction noise levels as shown on Table 10-7.

<sup>3</sup> Source: City of Los Angeles Municipal Code, Section 112.05.

<sup>6</sup> Do the peak Project construction noise levels exceed the threshold identified by the City of Los Angeles?

# **10.5** CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. 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. Construction activities that would have the potential to generate low levels of ground-borne vibration within the Project site include grading. Using the vibration source level of construction equipment provided on Table 6-5 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 each of the sensitive receiver locations.

Based on the reference vibration levels provided by the Federal Transit Administration, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec peak-particle-velocity (PPV) at 25 feet. At distances ranging from 111 to 385 feet from primary Project construction activities, construction vibration velocity levels are expected to range from 0.001 to 0.010 in/sec PPV at sensitive residential receiver locations. Based on the Caltrans older residential building damage threshold of 0.3 in/sec PPV, the proposed Project construction activities would result in vibration levels which are anticipated to remain below the threshold for building damage, and therefore, represents a *less than significant* impact.



	Distance to Const.	at Perceiver Locations (in/sec) <sup>2</sup>		Threshold	Threshold			
Receiver <sup>1</sup>	Activity (Feet)	Small Bulldozer (0.003 in/sec)	Jack-Hammer (0.035)	Loaded Trucks (0.076)	Large Bulldozer (0.089)	Peak Vibration Levels	(in/sec PPV)	Exceeded? <sup>3</sup>
R1	152'	0.000	0.002	0.005	0.006	0.006	0.3	No
R2	256'	0.000	0.001	0.002	0.003	0.003	0.3	No
R3	385'	0.000	0.001	0.001	0.001	0.001	0.3	No
R4	196'	0.000	0.002	0.003	0.004	0.004	0.3	No
R5	111'	0.000	0.004	0.008	0.010	0.010	0.3	No

#### TABLE 10-9: CONSTRUCTION EQUIPMENT VIBRATION LEVELS

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

<sup>2</sup> Based on the FTA's Vibration Source Levels of Construction Equipment previously shown on Table 6-5 at a reference distance of 25 feet. Calculated using the following equation per FTA guidance: PPVequip = PPVref x (25/D)^1.5

Where "PPVequip" = the vibration level at the receiver; "PPVref" = the reference vibration level at 25 feet; and "D" = the distance to each receiver location. <sup>3</sup> Does the peak vibration exceed the maximum acceptable vibration threshold?

12620-03 Noise Study

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# **11 REFERENCES**

- 1. State of California. California Environmental Quality Act, Appendix G. 2019.
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- 3. California Department of Transportation Environmental Program. *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
- 4. 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.
- 5. 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.
- 6. U.S. Department of Transportation, Federal Highway Administration. *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
- 7. U.S. Environmental Protection Agency Office of Noise Abatement and Control. *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
- 8. Occupational Safety and Health Administration. Standard 29 CRF, Part 1910.
- 9. Office of Planning and Research. State of California General Plan Guidlines. 2018.
- 10. City of Los Angeles. General Plan Noise Element. February 1999.
- 11. —. Municipal Code, Chapter XI Noise Regulation.
- 12. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
- 13. U.S. Department of Transportation, Federal Transit Administration. *Transit Noise and Vibration Impact Assessment.* September 2018.
- 14. U.S. Department of Transportation, Federal Highway Administration. FHWA Highway Traffic Noise Prediction Model. December 1978. FHWA-RD-77-108.
- 15. 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.
- 16. Urban Crossroads, Inc. Parkview Air Quality. August 2019.



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# 12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Parkview 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



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APPENDIX 3.1:

CITY OF LOS ANGELES MUNICIPAL CODE



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#### CHAPTER XI NOISE REGULATION

#### (Added by Ord. No. 144,331, Eff. 3/2/73.)

Article

- 1 General Provisions
- 2 Special Noise Sources
- 3 Sanitary Operations
- 4 Vehicles
- 5 Amplified Sounds
- 6 General Noise

#### ARTICLE 1 GENERAL PROVISIONS

Section

- 111.00 Declaration of Policy.
- 111.01 Definitions.
- 111.02 Sound Level Measurement Procedure and Criteria.
- 111.03 Minimum Ambient Noise Level.
- 111.04 Violations: Additional Remedies, Injunctions.
- 111.05 Enforcement, Citations.

#### SEC. 111.00. DECLARATION OF POLICY.

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

#### SEC. 111.01. DEFINITIONS.

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

(a) "Ambient Noise" is the composite of noise from all sources near and far in a given environment, exclusive of occasional and transient intrusive noise sources and of the particular noise source or sources to be measured. Ambient noise shall be averaged over a period of at least 15 minutes at a location and time of day comparable to that during which the measurement is taken of the particular noise source being measured. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(b) "**Commercial Purpose**" is the use, operation, or maintenance of any sound amplifying equipment for the purpose of advertising any business, goods, or services, or for the purpose of attracting the attention of the public to, advertising for, or soliciting patronage or customers to or for any performance, show, entertainment, exhibition, or event, or for the purpose of demonstrating such sound equipment. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(c) "Decibel" (dB) is a unit of level which denotes the ratio between two (2) quantities which are proportional to power; the number of decibels corresponding to the ratio of two (2) amounts of power is ten (10) times the logarithm to the base (10) of this ratio. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(d) "Emergency Work" is work made necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from an imminent exposure to danger, or work by private or public utilities when restoring utility service. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(e) "Impulsive Sound" is sound of short duration, usually less than one second, with an abrupt onset and rapid decay. By way of example "impulsive sound" shall include, but shall not be limited to, explosions, musical base drum beats, or the discharge of firearms. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

"Motor Vehicle" includes, but shall not be limited to, automobiles, trucks, motorcycles, minibikes and go-carts. (f) (Amended by Ord. No. 156,363, Eff. 3/29/82.)

"Noncommercial Purpose" is the use, operation, or maintenance of any sound equipment for other than a (g) "commercial purpose". "Noncommercial purpose" shall mean and include, but shall not be limited to, philanthropic, political, patriotic, and charitable purposes. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(h) "Octave Band Noise Analyzer" is an instrument for measurement of sound levels in octave frequency bands which satisfies the pertinent requirements for Class II octave band analyzers of the American National Standard Specifications for Octave, Half-Octave, and Third-Octave Band Filters, S1.11-1966 or the most recent revision thereof. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(i) "**Person**" is a person, firm, association, co-partnership, joint venture, corporation, or any entity, private or public in nature. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(i) "Sound Amplifying Equipment" (Amended by Ord. No. 156,363, Eff. 3/29/82.) is any machine or device for the amplification of the human voice, music or any other sound, but shall not include:

1. Automobile radios, stereo players or television receivers when used and heard only by the occupants of the vehicle in which the same is installed.

2. Radio, stereo players, phonographs or television receivers used in any house or apartment within any residential zone or within 500 feet thereof.

3. Warning devices on emergency vehicles.

4. Horns or other warning devices authorized by law on any vehicle when used for traffic purposes.

(k) "Sound Level" (Noise level) in decibels (dB) is the sound measured with the "A" weighting and slow responses by a sound level meter; except for impulsive or rapidly varying sounds, the fast response shall be used. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(1) "Sound Level Meter" is an instrument including a microphone, an amplifier, an output meter, and "A" frequency weighting network for the measurement of sound levels which satisfies the pertinent requirements for Type S2A meters in American Standard Specifications for sound level meters in S1.4-1971 or the most recent revision thereof. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(m) "Sound Truck" is any motor vehicle, or any other vehicle regardless of motive power, whether in motion or stationary, which carries, is equipped with, or which has mounted thereon, or attached thereto, any sound amplifying equipment. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(n) Supplementary Definitions of Technical Terms. Definitions of technical terms not defined herein shall be obtained from American Standard Acoustical Terminology S1-1-1971 or the most recent revision thereof. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(a) (Amended by Ord. No. 156,363, Eff. 3/29/82.) Any sound level measurement made pursuant to the provisions of this chapter shall be measured with a sound level meter using the "A" weighting and response as indicated in Section 111.01(k) of this article.

Except when impractical, the microphone shall be located four to five feet above the ground and ten feet or more from the nearest reflective surface. However, in those cases where another elevation is deemed appropriated, the latter shall be utilized.

Interior sound level measurements shall be made at a point at least four feet from the wall, ceiling, or floor nearest the noise source.

Calibration of the sound level meter, utilizing an acoustic calibrator shall be performed immediately prior to recording any sound level data. The ambient noise level and the level of a particular noise being measured shall be the numerical average of noise measurements taken at a given location during a given time period.

(b) (Amended by Ord. No. 156,363, Eff. 3/29/82.) Where the sound alleged to be offending is of a type or character set forth below, the following values shall be added to the sound level measurement of the offending noise:

1. Except for noise emanating from any electrical transformer or gas metering and pressure control equipment existing and installed prior to the effective date of the ordinance enacting this chapter, any steady tone with audible fundamental frequency or overtones have 200 Hz....+5

2. Repeated impulsive noise.....+5

3. Noise occurring more than 5 but less than 15 minutes in any period of 60 consecutive minutes between the hours of 7:00 a.m. and 10:00 p.m. of any day.....-5

4. Noise occurring five minutes or less in any period of 60 consecutive minutes, between the hours of 7:00 a.m. and 10:00 p.m. of any day.....-5 (Amended by Ord. No. 161,574, Eff. 9/8/86.)

(c) For those cases where an objectionable noise is clearly audible, but where the level of ambient noise does not permit direct quantative sound level "A" measurements of the objectionable noise, sound measurements may be performed utilizing an octave band sound analyzer to determine sound level "A" limits as indicated in the Table I below. This table is used to convert the sound pressure level meter readings in dB for each band to SPL in dB(A) for each band.

# TABLE I OCTAVE BAND NOISE VALUES CORRESPONDING TO SOUND LEVEL "A" VALUES

Sound Level	Octave Band Sound Pressure Level, dB re .0002 dyne/cm <sup>2</sup> Octave Band Center Frequency in Hz								
"A"	31.5	63	125	250	500	1000	2000	4000	8000
35	58	50	42	35	32	29	26	23	20
40	61	54	46	40	37	34	31	28	25
45	64	58	51	45	42	39	36	33	30
50	67	61	55	50	47	44	41	38	35
55	70	64	60	55	52	49	46	43	40
60	73	68	64	60	57	54	51	48	45
65	76	72	68	65	62	59	56	53	50
70	79	76	73	70	67	64	61	58	55
75	84	81	78	75	72	<b>6</b> 9	66	63	60

(d) For those cases where a sound level measurement has been made pursuant to the provisions of this chapter and two or more provisions of this chapter apply, the provision establishing the lower or lowest noise level, respectively, shall be used. (Added by Ord. No. 156,363, Eff. 3/29/82.)

#### SEC. 111.03. MINIMUM AMBIENT NOISE LEVEL.

(Amended by Ord. No. 156,363, Eff. 3/29/82.)

Where the ambient noise level is less than the presumed ambient noise level designated in this section, the presumed ambient noise level in this section shall be deemed to be the minimum ambient noise level for purposes of this chapter.

# TABLE IISOUND LEVEL "A" DECIBELS

(In this chart, daytime levels are to be used from 7:00 a.m. to 10:00 p.m. and nighttime levels from 10:00 p.m. to 7:00 a.m.)

	PRESUMED AMBIENT NOISE LEVEL (dB(A))			
ZONE	DAY NIGHT			
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50	40		
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60	55		
M1, MR1, and MR2	60	55		
M2 and M3	65	65		

At the boundary line between two zones, the presumed ambient noise level of the quieter zone shall be used.

#### SEC. 111.04. VIOLATIONS: ADDITIONAL REMEDIES, INJUNCTIONS.

As an additional remedy, the operation or maintenance of any device, instrument, vehicle, or machinery in violation of any provision of this chapter, which operation or maintenance causes discomfort or annoyance to reasonable persons or which endangers the comfort, repose, health, or peace of residents in the area, shall be deemed and is declared to be a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court order of competent jurisdiction. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

# SEC. 111.05. ENFORCEMENT, CITATIONS. (Added by Ord. No. 156,363, Eff. 3/29/82.)

(a) The Department of Building and Safety shall have the power and duty to enforce the following noise control provisions of this Code: Section 12.14 A.6.(h), Section 12.19 A.4.(b)(1), Section 112.02 and Section 112.04(c). (Amended by Ord. No. 172,086, Eff. 7/30/98.)

(b) The Police Department shall have the power and duty to enforce the following noise control provisions of this Code: Section 41.32, Section 41.40, Section 41.42, Section 41.47, Section 41.57, Section 63.51(m), Section 112.01, Section 112.04, Section 112.05, Section 112.06, Section 113.01, Section 114.01 through Section 114.05, inclusive, Section 115.02 through Section 115.03, inclusive, and Section 116.01. (Amended by Ord. No. 185,601, Eff. 7/18/18.)

(c) Any Building Mechanical Inspector assigned to noise enforcement inspection shall have the power, authority and immunity of a

public officer and employee, as set forth in the Penal Code of the State of California, Section 836.5, to make arrests without a warrant whenever such employee has reasonable cause to believe that the person to be arrested has committed a misdemeanor in his presence which is a violation of any provision set forth in Section 111.05(a) of this chapter. The provisions of said Penal Code section regarding issuance of a written promise to appear shall be applicable to arrests authorized herein.

#### ARTICLE 2 SPECIAL NOISE SOURCES

Section

112.01 Radios, Television Sets, and Similar Devices.

112.02 Air Conditioning, Refrigeration, Heating, Pumping, Filtering Equipment.

112.03 Construction Noise.

112.04 Powered Equipment Intended for Repetitive Use in Residential Areas and Other Machinery, Equipment, and Devices.

112.05 Maximum Noise Level of Powered Equipment or Powered Hand Tools.

112.06 Places of Public Entertainment.

# SEC. 112.01. RADIOS, TELEVISION SETS, AND SIMILAR DEVICES. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(a) It shall be unlawful for any person within any zone of the City to use or operate any radio, musical instrument, phonograph, television receiver, or other machine or device for the producing, reproducing or amplification of the human voice, music, or any other sound, in such a manner, as to disturb the peace, quiet, and comfort of neighbor occupants or any reasonable person residing or working in the area.

(b) Any noise level caused by such use or operation which is audible to the human ear at a distance in excess of 150 feet from the property line of the noise source, within any residential zone of the City or within 500 feet thereof, shall be a violation of the provisions of this section.

(c) Any noise level caused by such use or operation which exceeds the ambient noise level on the premises of any other occupied property, or if a condominium, apartment house, duplex, or attached business, within any adjoining unit, by more than five (5) decibels shall be a violation of the provisions of this section.

# SEC. 112.02. AIR CONDITIONING, REFRIGERATION, HEATING, PUMPING, FILTERING EQUIPMENT. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(a) It shall be unlawful for any person, within any zone of the city to operate any air conditioning, refrigeration or heating equipment for any residence or other structure or to operate any pumping, filtering or heating equipment for any pool or reservoir in such manner as to create any noise which would cause the noise level on the premises of any other occupied property or if a condominium, apartment house, duplex, or attached business, within any adjoining unit to exceed the ambient noise level by more than five (5) decibels

(b) This section shall not be applicable to emergency work as defined in Section 111.01(c) of this chapter, or to periodic maintenance or testing of such equipment reasonably necessary to maintain such equipment in good working order.

#### SEC. 112.03. CONSTRUCTION NOISE.

Noise due to construction or repair work shall be regulated as provided by Section 41.40 of this Code. (Amended by Ord. No. 161,574, Eff. 9/8/86.)

# SEC. 112.04. POWERED EQUIPMENT INTENDED FOR REPETITIVE USE IN RESIDENTIAL AREAS AND OTHER MACHINERY, EQUIPMENT, AND DEVICES. (Title and Section Amended by Ord. No. 161,574, Eff 9/8/86.)

(a) Between the hours of 10:00 p.m and. 7:00 a.m. of the following day, no person shall operate any lawn mower, backpack blower, lawn edger, riding tractor, or any other machinery, equipment, or other mechanical or electrical device, or any hand tool which creates a loud, raucous or impulsive sound, within any residential zone or within 500 feet of a residence.

(b) Except as to the equipment and operations specifically mentioned and related elsewhere in this Chapter or for emergency work as that term is defined in Section 111.01(d), and except as to aircraft, tow tractors, aircraft auxiliary power units, trains and motor vehicles in their respective operations governed by State or federal regulations, no person shall operate or cause to be operated any machinery, equipment, tools, or other mechanical or electrical device, or engage in any other activity in such manner as to create any noise which would cause the noise level on the premises of any other occupied property, or, if a condominium, apartment house, duplex, or attached business, within any adjoining unit, to exceed the ambient noise level by more than five (5) decibels.

(c) Notwithstanding the provisions of Subsection (a) above, no gas powered blower shall be used within 500 feet of a residence at anytime. Both the user of such a blower as well as the individual who contracted for the services of the user, if any, shall be subject to the requirements of and penalty provisions for this ordinance. Violation of the provisions of this subsection shall be punishable as an infraction in an amount not to exceed One Hundred Dollars (\$100.00), notwithstanding the graduated fines set forth in LAMC § 11.00(m). (Amended by Ord. No. 171,890, Eff. 2/13/98.)

# SEC. 112.05. MAXIMUM NOISE LEVEL OF POWERED EQUIPMENT OR POWERED HAND TOOLS. (Amended by Ord. No. 161,574, Eff. 9/8/86.)

Between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

(a) 75dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;

(b) 75dB(A) for powered equipment of 20 HP or less intended for infrequent use in residential areas, including chain saws, log chippers and powered hand tools;

(c) 65dB(A) for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools and riding tractors;

The noise limits for particular equipment listed above in (a), (b) and (c) shall be deemed to be superseded and replaced by noise limits for such equipment from and after their establishment by final regulations adopted by the Federal Environmental Protection Agency and published in the Federal Register.

Said noise limitations shall not apply where compliance therewith is technically infeasible. The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers and/or other noise reduction device or techniques during the operation of the equipment.

#### SEC. 112.06. PLACES OF PUBLIC ENTERTAINMENT.

It shall be unlawful for any person to operate, play, or to permit the operation or playing of any radio, television receiver, phonograph, musical instrument, sound amplifying equipment, or similar device which produces, reproduces, or amplifies sound in any place of public entertainment at a sound level greater than 95dB(A) at any point that is normally occupied by a customer, unless a conspicuous and legible sign is located outside such place, near each public entrance, stating:

# "WARNING: SOUND LEVELS WITHIN MAY CAUSE HEARING IMPAIRMENT."

(Added by Ord. No. 156,363, Eff. 3/29/82.)

#### **ARTICLE 3** SANITARY OPERATION

Section 113.01 Rubbish and Garbage Collection and Disposal.

### SEC. 113.01. RUBBISH AND GARBAGE COLLECTION AND DISPOSAL. (Amended by Ord. No. 161,574, Eff. 9/8/86.)

It shall be unlawful for any person engaged in the business of collecting or disposing of rubbish or garbage to operate any refuse disposal truck, parking lot sweeper, or vacuum truck, or to collect, load, pick up, transfer, unload, dump, discard, sweep, vacuum, or dispose of any rubbish or garbage, as such terms are defined in Section 66.00 of this Code, within 200 feet of any residential building between the hours of 9:00 p.m. and 6:00 a.m. of the following day, unless a permit therefore has been duly obtained beforehand from the Board of Police Commissioners.

The standards which shall be considered in determining whether a permit shall be granted are the following:

- (a) Whether the work to be done is in the public interest, or
- (b) Whether the applicant would suffer hardship, injustice or delay if the permit were not granted, or
- (c) Whether fuel conservation would result if the permit were issued.

No permit shall be required to perform emergency work as defined in Sec. 111.01(c) of this chapter.

## ARTICLE 4 **VEHICLES**

Section

- 114.01 Vehicle Repairs.
- 114.02 Motor Driven Vehicles.
- 114.03 Vehicles Loading and Unloading.
- 114.04 Audible Signaling Devices.
- 114.05 Audible Advertising Devices Commercial Food Vendors.
- 114.06 Vehicle Theft Alarm Systems.
- 114.07 Audible Status Indicator

### SEC. 114.01. VEHICLE REPAIRS. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

It shall be unlawful for any person, within any residential property located within any residential zone of the City or within 500 feet thereof, to repair, rebuild, reconstruct or dismantle any motor vehicle between the hours of 8:00 p.m. of one day and 8:00 a.m. of the next day in such manner:

(a) That a reasonable person residing in the area is caused discomfort or annoyance;  $\frac{65}{5}$ 

(d) That such activity is audible to the human ear at a distance in excess of 150 feet from the property line of the noise source;

(c) As to create any noise which would cause the noise level on the premises of any occupied residential property, or if a condominium, apartment house or duplex, within any adjoining unit, to exceed the ambient noise level by more than five (5) decibels.

#### SEC. 114.02. MOTOR DRIVEN VEHICLES. (Amended by Ord. No. 156,363, Eff. 3/29/82.)

(a) It shall be unlawful for any person to unreasonably operate any motor driven vehicle upon any property within the City or to unreasonably accelerate the engine of any vehicle, or unreasonably sound, blow or operate the horn or other warning device of such vehicle in such manner:

1. As to disturb the peace, quiet and comfort of any neighborhood or of any reasonable person residing in such area

2. That such activity is audible to the human ear at a distance in excess of 150 feet from the property line of the noise source;

3. As to create any noise which would cause the noise level on the premises of any occupied residential property, or if a condominium, apartment house or duplex, within any adjoining unit, to exceed the ambient noise level by more than five (5) decibels.

(b) This section shall not be applicable to any vehicle which is operated upon any public highway, street or right-of-way or to the operation of any off-highway vehicle to the extent it is regulated in the Vehicle Code.

# SEC. 114.03. VEHICLES - LOADING AND UNLOADING. (Amended by Ord. No. 166,514, Eff. 1/24/91.)

(a) It shall be unlawful for any person, between the hours of 10:00 p.m. and 7:00 a.m. of the following day, to load or unload any vehicle, or operate any dollies, carts, forklifts, or other wheeled equipment, which causes any impulsive sound, raucous or unnecessary noise within 200 feet of any residential building.

(b) Irrespective of the provisions of Subsection (a), loading or unloading of vehicles of the type of activity referred to in Subsection (a) may occur between the hours of 6:00 a.m. to 11:00 p.m. of the same day pursuant to a permit issued by the Department of Transportation in accordance with a business program as defined by said department. This permit program would be limited to the area bounded by Western Avenue, Santa Monica Freeway, Central Avenue, and the San Diego Freeway, within the limits of the City of Los Angeles. Such permits will not be issued to high-noise businesses such as trash pickup.

# SEC. 114.04. AUDIBLE SIGNALING DEVICES. (Added by Ord. No. 161,574, Eff. 9/8/86.)

It shall be unlawful for any person, within any residential zone of the City or within 500 feet thereof, to sound, blow, or operate any audible signaling device, including sequential airhorns or electronically operated vehicular loud speaker music devices, which can be heard for a distance greater than 200 feet for any purpose. Violation of this section shall constitute an infraction This section does not address horn or warning devices regulated in Article 1 of Chapter 5 of Division 12 of the Vehicle Code of the State of California, commencing at Section 27000. (Last sentence amended by Ord. No. 165.191, Eff. 10/23/89.)

# SEC. 114.05. AUDIBLE ADVERTISING DEVICES - COMMERCIAL FOOD VENDORS. (Added by Ord. No. 164,532, Eff. 4/20/89.)

Notwithstanding the provisions of Section 114.04, it shall be unlawful for any person, to sound, blow or operate any music, chimes or bells, or any similar sound device, amplified or otherwise, within 200 feet of any residential building between the hours of 9:00 p.m. and

7:00 a.m. the next day while operating a catering truck, as that term is defined in Section 80.73 of the Municipal Code.

## SEC. 114.06. VEHICLE THEFT ALARM SYSTEMS. (Former Sec. 114.05, Renumbered by Ord. No. 164,532, Eff. 4/20/89.)

It shall be unlawful for any person to install, operate or use any vehicle theft alarm system that emits or causes the emission of an audible sound, which is not, or does not become, automatically and completely silenced within five minutes. The time period shall be calculated based upon the emission of the first audible sound and shall end five minutes thereafter notwithstanding any variation or stoppage in the emissions of audible sound. Violation of this section shall constitute an infraction.

# SEC. 114.07. AUDIBLE STATUS INDICATOR.

## (Added by Ord. No. 169,785, Eff. 6/9/94.)

It shall be unlawful for any person to install, operate, use or maintain any vehicle theft alarm system which utilizes an audible status indicator emitting or causing the emission of an audible sound for a duration of more than one minute. The time period shall be calculated from the point in time of the emission of the first audible sound used in calculation and shall end one minute thereafter, notwithstanding any variation or temporary stoppage in the emission of audible sound.

As used in this section, an audible status indicator is a component of a vehicle theft alarm system which emits sound audible outside the vehicle for the purpose of warning that a vehicle theft alarm system is installed and armed or operational. The term "**audible status indicator**" shall include any device which emits a chirp, voice message or other sound when an approaching person is within a certain distance of the vehicle in which the device is installed.

In the event enforcement of a violation occurs under this section, no enforcement shall be taken under Section 80.75.1 of the Municipal Code for the same violation.

Violation of any provision of this section shall constitute an infraction.

# ARTICLE 5 AMPLIFIED SOUND

Section
115.01 Purpose.
115.02 Prohibition and Regulations.
115.03 Amplified Sound on Unenclosed Tour Buses.

## SEC. 115.01. PURPOSE.

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

#### SEC. 115.02. PROHIBITION AND REGULATIONS.

It shall be unlawful for any person, other than personnel of law enforcement or governmental agencies, or permittees duly authorized to use the same pursuant to Sec. 103.111 of this Code, to install, use, or operate within the City a loudspeaker or sound amplifying equipment in a fixed or movable position or mounted upon any sound truck for the purposes of giving instructions, directions, talks, addresses, lectures, or transmitting music to any persons or assemblages of persons in or upon any public street, alley, sidewalk, park

or place, or other public property except when installed, used or operated in compliance with the following provisions:

(a) In all residential zones and within 500 feet thereof, no sound amplifying equipment shall be installed, operated or used for commercial purposes at any time.

(b) The operation or use of sound amplifying equipment for noncommercial purposes in all residential zones and within 500 feet thereof, except when used for regularly scheduled operative functions by any school or for the usual and customary purposes of any church, is prohibited between the hours of 4:30 p.m. and 9:00 a.m. of the following day.

(c) In all other zones, except such portions thereof as may be included within 500 feet of any residential zone, the operation or use of sound amplifying equipment for commercial purposes is prohibited between the hours of 9:00 p.m. and 8:00 a.m. of the following day.

(d) In all other zones, except such portions thereof as may be included within 500 feet of any residential zone, the operation or use of sound amplifying equipment for noncommercial purposes is prohibited between the hours of 10:00 p.m. and 7:00 a.m. of the following day.

(e) The only sounds permitted shall be either music, human speech, or both.

(f) Sound emanating from sound amplifying equipment shall be limited in volume, tone and intensity as follows:

1. The sound shall not be audible at a distance in excess of 200 feet from the sound equipment.

2. In no event shall the sound be loud and raucous or unreasonably jarring, disturbing, annoying or a nuisance to reasonable persons of normal sensitiveness within the area of audibility.

(g) Except as provided in (b) above, no sound amplifying equipment shall be operated upon any property adjacent to and within 200 feet of any hospital grounds or any school or church building while in use.

(h) (Amended by Ord. No. 145,691, Eff. 5/2/74.) The operation or use of any sound amplifying equipment installed, mounted, attached or carried in or by any sound truck is further prohibited:

- 1. Within the Central Traffic district at any time;
- 2. Upon Hollywood Boulevard between Vermont Avenue and La Brea at any time;
- 3. Upon Wilshire Boulevard at any time;
- 4. Upon Sunset Boulevard at any time;
- 5. Upon Vine Street at any time;
- 6. Upon any street between the hours of 4:30 p.m. and 9:00 a.m. of the following day;
- 7. Upon any street on any Sunday.

# SEC. 115.03. AMPLIFIED SOUND ON UNENCLOSED TOUR BUSES. (Added by Ord. No. 185,601, Eff. 7/18/18.)

(a) **Definitions.** As used in this section:

1. **"Operator**" means any person or corporation who conducts a business or enterprise that operates one or more Unenclosed Tour Buses.

2. "Sound Amplifying Equipment" shall have the same meaning as in Subsection (j) of Section 111.01 of this chapter, and shall include loud speakers and public address systems.

"Tour Bus" means a privately-owned bus or passenger vehicle for hire, which is operated by or for a charter-party 3. carrier of passengers or a passenger stage corporation, as set forth in California Vehicle Code Section 612, subsection (a), and as defined in California Public Utilities Code Sections 226 and 5360. A Tour Bus includes any vehicle that is used primarily for the conveyance of passengers over the public streets, for the purpose of visiting or viewing places of interest.

4. "Unenclosed Tour Bus" means a Tour Bus that has had its roof substantially structurally modified or removed, as set forth in California Vehicle Code Section 612, Subsection (b), such that it can be and is operated without a solid roof covering all seating areas of the vehicle. An Unenclosed Tour Bus shall also include any Tour Bus that has had its side panels substantially structurally modified and/or removed, such that it can be and is operated without side panels fully enclosing the sides of the vehicle, when doors and windows are closed.

(b) Use of Sound Amplifying Equipment Prohibited. It shall be unlawful for any Operator or any person employed by an Operator to cause, allow, or permit the use of Sound Amplifying Equipment on any Unenclosed Tour Bus while the vehicle is operating within the City of Los Angeles.

(c) Violation and Punishment. A violation of this Section shall constitute an infraction pursuant to California Vehicle Code Sections 40000.1 and 42001, and shall be punished pursuant to the fine structure set forth in California Vehicle Code Section 42001.

(d) Severability. If any subsection, subdivision, sentence, clause, phrase, or portion of this section, or the application thereof to any person, is for any reason held to be invalid or constitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this section or its application to other persons. The City Council hereby declares that it would have adopted this section and each subsection, subdivision, sentence, clause, phrase or portion thereof, irrespective of the fact that any one or more subsections, subdivisions, sentences, clauses, phrases, or portions, or the application thereof to any person, be declared invalid or unconstitutional.

## **ARTICLE 6 GENERAL NOISE**

Section 116.01 Loud, Unnecessary and Unusual Noise.

## SEC. 116.01. LOUD, UNNECESSARY AND UNUSUAL NOISE.

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

- (a) The level of noise;
- (b) Whether the nature of the noise is usual or unusual;
- Whether the origin of the noise is natural or unnatural; (c)
- (d) The level and intensity of the background noise, if any;
- The proximity of the noise to residential sleeping facilities; (e)
- (f) The nature and zoning of the area within which the noise emanates;

**69** The density of the inhabitation of the area within which the noise emanates;

- (h) The time of the day and night the noise occurs;
- (i) The duration of the noise;
- (j) Whether the noise is recurrent, intermittent, or constant; and
- (k) Whether the noise is produced by a commercial or noncommercial activity.

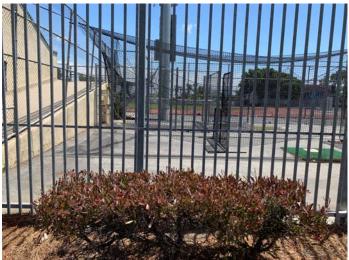
APPENDIX 5.1:

**STUDY AREA PHOTOS** 



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L1 North 34, 0' 40.750000"118, 15' 7.390000"



L1 South 34, 0' 40.800000"118, 15' 7.470000"



L1 West 34, 0' 40.790000"118, 15' 7.440000"



L2 East 34, 0' 37.040000"118, 14' 59.560000"



L2 North 34, 0' 37.020000"118, 14' 59.560000"



L2 South 34, 0' 37.040000"118, 14' 59.590000"



L2 West 34, 0' 37.040000"118, 14' 59.530000"



L3 East 34, 0' 31.370000"118, 15' 3.570000"



L3 North 34, 0' 31.410000"118, 15' 3.600000"



L3 South 34, 0' 31.370000"118, 15' 3.600000"



L3 West 34, 0' 31.420000"118, 15' 3.600000"



L4 East 34, 0' 39.220000"118, 14' 53.660000"



L4 North 34, 0' 39.220000"118, 14' 53.710000"



L4 South 34, 0' 39.230000"118, 14' 53.660000"



L4 West 34, 0' 39.210000"118, 14' 53.740000"



L5 East 34, 0' 33.810000"118, 14' 56.730000"



L5 North 34, 0' 33.870000"118, 14' 56.700000"



L5 South 34, 0' 33.850000"118, 14' 56.680000"



L5 West 34, 0' 33.870000"118, 14' 56.700000"

APPENDIX 5.2:

**NOISE LEVEL MEASUREMENT WORKSHEETS** 



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Timeframe	Hour	L ea	L max	L <sub>min</sub>	11%	12%	<b>L5%</b>	<b>78%</b>	125%	<b>T50%</b>	%061	<b>L95%</b>	%667	L ea	Adj.	Adj. L <sub>ea</sub>
	0	63.3	78.2	42.9	72.0	72.0	71.0	0.69	63.0	50.0	43.0	43.0	43.0	63.3	10.0	73.3
	1	62.6	79.7	46.4	72.0	72.0	71.0	65.0	64.0	51.0	47.0	47.0	46.0	62.6	10.0	72.6
	2	61.4 51	77.8	45.3	72.0	71.0	65.0	64.0	63.0	47.0	46.0	46.0	45.0	61.4	10.0	71.4
Night	m ₹	67.5 71 0	92.4	44.3	73.0	72.0	72.0	72.0	70.0	63.0 70.0	47.0 60.0	46.0	45.0	67.5 71.0	10.0	77.5
	4 v.	73.2	87.9 93.5	52.8	/8.0 81.0	0.07	76.0	75.0	/1.0 73.0	71.0	64.0 64.0	68.U 64.0	67.U 58.0	73.2	10.0	81.9 83.2
	9	78.1	98.6	56.9	86.0	85.0	83.0	82.0	78.0	74.0	70.0	69.0	68.0	78.1	10.0	88.1
	7	74.6	91.4	69.5	80.0	79.0	78.0	77.0	75.0	72.0	70.0	70.0	70.0	74.6	0.0	74.6
	∞	71.9	89.4	56.6	79.0	77.0	75.0	74.0	72.0	70.0	65.0	62.0	59.0	71.9	0.0	71.9
8	<del>о</del> (	72.5	97.2	55.2	82.0	80.0	77.0	75.0	71.0	66.0 71 0	60.0 70.0	59.0 70.0	57.0	72.5	0.0	72.5
0	01 E	75.6	0.16	0.60 71.3	0.67	0.77	0.67	0.67	76.0	0.17	0.07	0.07	71.0	75.6	0.0	75.6
	12	74.1	93.3	64.5	80.0	78.0	77.0	76.0	74.0	73.0	70.0	68.0	66.0	74.1	0.0	74.1
لرها	13	70.2	88.9	58.9	78.0	77.0	74.0	74.0	70.0	68.0	62.0	61.0	60.0	70.2	0.0	70.2
	14	75.5	93.8 27 4	58.6	84.0	83.0	80.0	79.0	75.0	73.0	64.0 00 0	62.0 22.0	60.0	75.5	0.0	75.5
	년 16	71.4	87.5 95.5	52.8	81.0 81.0	0.18	75.0	73.0	70.0	/3.U 67.0	63.U 59.0	0.10 57.0	54.0	71.4	0.0	71.4
	17	69.3	92.3	51.9	78.0	76.0	73.0	72.0	0.69	65.0	57.0	56.0	54.0	69.3	0.0	69.3
	18	68.0	84.0	51.5	77.0	75.0	73.0	72.0	68.0 C4 0	64.0 77.0	56.0	54.0	52.0	68.0	0.0	68.0
Evening	20	64.7	87.8	49.2	74.0	72.0	20.07	0.0 68.0	62.0	56.0	51.0 51.0	51.0 51.0	0.02	64.7 64.7	5.0	69.7
	21	63.4	90.3	49.1	73.0	71.0	0.69	67.0	58.0	53.0	51.0	50.0	50.0	63.4	5.0	68.4
Night	22	62.7 C2 4	87.3	46.2	74.0	72.0	69.0	67.0	57.0	52.0	48.0	47.0	47.0	62.7 C2 4	10.0	72.7
Timeframe	23 Hour	92.4	09.1	40.0	11%	0.07 %C1	0.co	0.10	0.25	49.0 150%	48.U	47.0 195%	47.0 199%	02.4	1 (dBA)	
	Min	- ea 68.0	- max 84.0	- min 51.5	77.0	75.0	73.0	72.0	68.0	64.0	56.0	54.0	52.0		horm ba -	
Day		75.6	97.2	71.3	84.0	83.0	80.0	79.0	76.0	74.0	72.0	72.0	71.0	24-Hour	Daytime	Nighttime
Energy	Aver	73.1		Average:	80.2	78.4	76.1	75.2	72.2	69.7	64.0	62.7	60.9	71 Q	77 3	71 1
Evening	Min	63.4 64 9	81.2 90 3	49.1 50 7	75.0	73.0	69.0 71.0	67.0 70.0	58.0 64.0	53.0 57.0	51.0 52.0	50.0 52.0	50.0 51.0		-110	
Energy /	Aver	64.4		Average:	74.0	72.0	70.0	68.3	61.3	55.3	51.3	51.0	50.3			
Night	Min	61.4 -0.4	77.8	42.9	72.0	70.0	65.0	61.0	52.0	47.0	43.0	43.0	43.0		777	
Energy	Energy Average	78.1 71.1	98.6 Ave	66.4 Average:	86.0 75.7	85.0 74.3	83.0 71.8	82.0 69.9	78.0 65.7	74.0 58.6	70.0 53.6	69.0 53.0	68.0 51.8			
10.2.1	- An in a l	1				0.1.1	0.1	1.10	1.00	2.20		2.00	0110			

E:\12620\Fieldwork\12620\_L2\_Summary

<b>48A)</b> 85.1 65.0 65.0																			
<b>,4 אטטרוץ ل</b> 8 8 2000 מיטס 1 4 2000 מיטס	43.7	£.52 6.74	\$ <sup>5</sup>	S'TS S'7S	0.42	<u>\$4.45</u>	<b>1'55</b>	<b>E.E2</b>	0.52	S.22	2:95	8.22	<mark>2:95</mark>	<b>₽.₽</b> 2	<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	6'TS	T.S2	8'TS	4.84
		1	- -	4	9		6	10	11	12 13	3 14	15	16	17	18	19 20	21	22	23
									Hour Beginning										
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	12%	<b>T5%</b>		<b>78%</b>	L25%	<b>720%</b>	%067	%(	<i>1</i> 95%	%667	L eq	ba	Adj.	Adj. L <sub>eq</sub>
	0	43.7	62.4	36.4	52.0	51.0	-	_	46.0	43.0	41.0	39	39.0	37.0	36.0	43	43.7	10.0	53.7
	1	47.9	68.4	39.4	60.0	56.0			48.0	44.0	42.0	40	40.0	39.0	39.0	47	47.9	10.0	57.9
	2	53.1	78.7	39.3	66.0	59.0			46.0	43.0	42.0	35	39.0	39.0	39.0	53.1	.1	10.0	63.1
Night	ŝ	45.4	68.4	39.2	54.0	53.0			47.0	44.0	42.0	41	41.0	39.0	39.0	45	45.4	10.0	55.4
	4	52.5	80.0	39.7	59.0	57.0			52.0	47.0	44.0	41	41.0	41.0	41.0	52	52.5	10.0	62.5
	ъ	51.5	69.7	43.2	60.0	58.0			54.0	50.0	49.0	46	46.0	45.0	44.0	51	51.5	10.0	61.5
	9	54.0	74.9	44.3	64.0	61.0			56.0	53.0	50.0	47	47.0	47.0	46.0	54	54.0	10.0	64.0
	7	54.4	75.0	46.2	62.0	60.0			56.0	54.0	52.0	46	49.0	48.0	47.0	54	54.4	0.0	54.4
	∞	54.4	76.4	44.1	63.0	60.0			56.0	53.0	51.0	48	48.0	47.0	46.0	54	54.4	0.0	54.4
	б	55.1	T.TT	45.3	66.0	61.0			56.0	53.0	51.0	48	48.0	48.0	47.0	55.1	.1	0.0	55.1
	10	53.3	69.4	44.0	62.0	61.0			56.0	53.0	50.0	47	47.0	46.0	45.0	23	53.3	0.0	53.3
	11	53.0	73.1	43.4	62.0	59.0			55.0	52.0	50.0	47	47.0	46.0	45.0	23	53.0	0.0	53.0
Dav	12	54.7	73.6	44.7	65.0	63.0			57.0	53.0	50.0	48	48.0	47.0	47.0	54.7	.7	0.0	54.7
600	13	55.5	76.4	46.0	67.0	64.0			57.0	53.0	51.0	48	48.0	48.0	47.0	55	55.5	0.0	55.5
	14	56.2	75.3	46.8	64.0	62.0			59.0	55.0	52.0	50	50.0	49.0	48.0	56	56.2	0.0	56.2
	15	55.8	85.4	45.8	62.0	60.0			57.0	54.0	52.0	45	49.0	48.0	47.0	55	55.8	0.0	55.8
	16	56.7	81.9	43.3	68.0	64.0			58.0	54.0	52.0	48	48.0	47.0	46.0	56	56.7	0.0	56.7
	17	54.4	76.5	44.2	61.0	60.0			56.0	53.0	51.0	48	48.0	48.0	47.0	54	54.4	0.0	54.4
	18	57.4	81.0	46.9	64.0	63.0			60.0	57.0	55.0	50	50.0	49.0	48.0	57	57.4	0.0	57.4
	19	53.3	78.4	41.3	62.0	59.0			55.0	52.0	50.0	45	45.0	44.0	43.0	23	53.3	5.0	58.3
Evening	5	51.9	76.5	42.0	61.0	58.0	55.0		53.0	49.0	47.0	44.0	44.0	44.0	43.0	51.9	51.9	5.0	56.9
	17	1.2C	2.21 7 F	41.0	0.60				0.00	40.0	40.0	1 1	<u>,</u>	44.0	41.0	7C	-1 0	0.0	1.10
Night	77	0.1C	0.77	40.4	07.0	0.00	_		0.20	47.U	40.04	42.0	42.0	4T.U	41.0		0.1C	0.01	0.10
Timoframo		40.4	0.10	1.1.1	110	20C			1002	1.75%	150%	0.24 1 PD/24	700	105%	7000 I	10		I (ABA)	1.00
			<b>5</b> Max						LE O	0 13	%0C7			0.001			-	(wan) ba	
Day	Max	57.4	85.4	45.5	0.10	64.0 64.0	61.0 61.0		0.06	57.0	55.0	50	47.0 50.0	40.0 49.0	45.0 48.0	24-Hour		Daytime	Nighttime
Energy	Avera	55.3		Average:	63.8	61.4			56.9	53.7	51.4	48	48.3	47.6	46.7	5		0 1	
	Min	51.9	72.9	41.0	61.0	58.0			53.0	48.0	46.0	43	0.	42.0	41.0	/.00		0.4.0	DC.U
Evening	Мах	53.3	78.4	42.0	63.0	59.0			55.0	52.0	50.0	45	45.0	44.0	43.0		24-Hou	24-Hour CNEL (dBA)	(A)
Energy	Energy Average	52.5	Av	Average:	62.0	58.7			53.7	49.7	47.7	44	44.0	43.3	42.3				
Night	Min	43.7	62.4	36.4	52.0	51.0	48.0		46.0	43.0	41.0	35	39.0	37.0	36.0	_	Ľ	С С	
)	Max	54.0 200	80.0		66.0	61.0	+		56.0	53.0	50.0	47	0.1	47.0	46.0		)	) )	
Energy	Energy Average	50.9	AI	Average:	59.7	0.05	-		49.9	46.2	44.3	41	41.9	41.1	40.7	_			

JN: 12620 Analyst: R. Saber

Meter: Piccolo I

Location: L3 - Located north of E 41st Street, south of the Project site, near existing existing single-family residential homes.

Date: Wednesday, May 22, 2019

Project: Parkview

Hourly L<sub>eq</sub> dBA Readings (unadjusted)

24-Hour Noise Level Measurement Summary

E:\12620\Fieldwork\12620\_L3\_Summary

JN: 12620 Analyst: R. Saber					2:25 6:25 9:55	20 21 22 23		L <sub>eq</sub> Adj. Adj. L <sub>eq</sub>	10.0	10.0	10.0	50.6 10.0 60.6 55.0 10.0 55.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	64./ 0.0 64./ 63.0 0.0 63.0	0.0	0.0	0.0	58.2 0.0 58.2 0.0 58.2	5.0	55.6 5.0 60.6	10.0		L <sub>ea</sub> (dBA)	24-Hour Daytime Nighttime		00.3 01.9 24.3	24-Hour CNEL (dBA)		63.3	
					6'2S	18 19		%667	39.0	42.0	43.0	43.0		47.0	48.0	48.0	47.0	48.0	48.0	49.0 51.0	49.0	48.0	47.0	48.0 48.0	48.0	46.0	44.0	44.0	%667	47.0 51.0	48.3	44.0	48.0	46.0	39.0 49.0	43.8
iccolo I			8	<b>: 6</b> !	9	17		195%	40.0	43.0	43.0	43.0	0.07	48.0	49.0	49.0	48.0	49.0	49.0	50.0 52.0	51.0	50.0	48.0	49.0 49.0	49.0	47.0 45.0	44.0	45.0	<i>%56</i> 7	48.0 52.0	49.4	45.0	49.0	47.0	40.0 50.0	44.4
Meter: Piccolo I					T'/S	15 16		%067	40.0	43.0	43.0	44.0	0.07	49.0	50.0	50.0	48.0	50.0	50.0	53.0	51.0	50.0	49.0	50.0 49.0	50.0	48.0	45.0	45.0	%067	48.0 53.0	50.1	46.0	50.0	48.0	40.0 50.0	44.8
rth of the					Z.T.9	14		L50%	44.0	45.0	45.0	47.0	53 D	52.0	55.0	54.0	51.0	53.0	53.0	56.0	55.0	53.0	53.0	53.0	54.0	52.0	48.0	48.0	<b>150%</b>	51.0 56.0	53.8	49.0	54.0	51.7	44.0 53.0	47.7
ocated on E Martin Luther King Boulevard, north of the ct site, near existing single-family residential iborhood.	ınadjusted)			-	729 729	12 13	inning	125%	47.0	47.0	46.0	49.0	0.64	55.0	63.0	56.0	54.0	55.0	55.0 18.0	58.0 58.0	57.0	56.0	56.0	60.0 56.0	57.0	55.0	51.0	50.0	125%	54.0 63.0	57.0	52.0	57.0	54.7	46.0 56.0	50.0
L4 - Located on E Martin Luther King Boulevard, nd Project site, near existing single-family residential neighborhood.	Hourly L <sub>eq</sub> dBA Readings (unadjusted)				0.29	1	Hour Beginning	%87	51.0	51.0	49.0	51.0		60.09	66.0	60.0	57.0	58.0	60.0	67.0 62.0	63.0	61.0	60.0	/1.0 61.0	61.0	59.0	55.0	53.0	<b>78%</b>	57.0 71.0	62.2	58.0	61.0	59.3	49.0 60.0	53.7
on E Martin I near existing d.	Hourly L <sub>eq</sub> dB				6:55 5:75	9 10		L5%	52.0	55.0	50.0	52.0 57.0	0.12	62.0	67.0	62.0	59.0	60.0	63.0 70.0	/U.U 65.0	64.0	62.0	62.0	//.U 63.0	63.0	60.0	58.0	55.0	<b>75%</b>	59.0 77 0	64.5	60.0	63.0	61.3	50.0 62.0	55.8
L4 - Located or Project site, ne neighborhood.					0.62	7 8		12%	56.0	60.0	52.0	54.0 61.0	0.10	65.0	68.0	67.0	62.0	63.0	70.0	71.0 71.0	69.0	64.0	65.0	80.0 66.0	66.0	62.0	63.0	61.0	12%	62.0 80.0	68.3 68.3	62.0	68.0	65.3	52.0 65.0	59.6
Location:					7.85	- uo		L1%	59.0	63.0	55.0	56.0 64.0	04.0 66.0	67.0	70.0	70.0	64.0	65.0	76.0	75.0	73.0	66.0	67.0	81.0 68.0	68.0	64.0 71.0	67.0	63.0	71%	64.0 81.0	71.0	64.0	71.0	67.7	55.0 67.0	62.2
					9.92	4		L <sub>min</sub>	39.3	41.6	42.7	42.3 47 a	17 5	46.0	46.7	47.2	46.1	47.4	46.4	48.8 50.7	48.2	46.2	45.3	45.8 46.8	46.4	44.7	44.1	44.0	L <sub>min</sub>	45.3 50 7		44.1	46.4		39.3 47.5	
6					9.02	m		L <sub>max</sub>	68.2	69.8	62.8	77.5 70 3	75.8	83.3	85.3	81.1	71.2	73.5	85.0	80.2 88.8	80.9	84.3	78.0	89.4 78.7	74.1	74.2	81.1	74.3	L max	71.2 89.4	Average	74.1	82.0	Average	62.8 83.3	Average:
<i>Date:</i> Wednesday, May 22, 2019 <i>oject</i> : Parkview					8.02 8.94	1 2		L eq	48.8	50.8	46.8	50.6 55.0	56.6	58.4	63.0	59.0	54.5	55.9	62.0 C4.7	64.7 63.0	61.2	57.7	57.1	69.3 58.2	57.9	55.6	56.4	52.7	L <sub>ea</sub>	54.5 69 3	62.5	55.6	57.9	57.3	46.8 58.4	54.3
Wednesday, Parkview					8.84	0		Hour	0	1	2	ς α	t u	9	7	∞	б	10	11	12	14	15	16	1/ 18	19	20	22	23	Hour	Min	Average	Min	Мах	Average	Min Max	verage
Date: ' Project:		<b>/)</b>	( <b>ab</b> )	<b>1</b>	Hourly 55:0 45:00 40:0	35.0		Timeframe				Night								Day						Evening	+- <u>1</u> 114	INIBITL	Timeframe	Day	Energy A		cvering	Energy A	Night	Energy Average

24-Hour Noise Level Measurement Summary

							Hourly L <sub>eq</sub> d	Hourly L <sub>eq</sub> dBA Readings (unadjusted	s (unadjustea	1)						
A) 80.1 75																
ab) ₀,000 6000 6000 10,00000 10,0000 10,00000000													9.6			
<b>راب ا</b>				E	0	5.3 5.3	<mark>۲.68</mark>	8.2	9.56	<mark>9.58</mark>	$\frac{1}{2}$	Ŧ	9 <sup>.1</sup>		Ξ	
<b>INOH</b>	<b>5.02</b>	20.02	0'TS	7.22 7.22	)°ZS			·//S	) ) )		85 85 85	:' <u>/</u> S		·//S	·25 .95	6.42
.05.		1 2	m	4 5	9	7 8	9	10 11	12	13 14	15 16	17	18 19	20	21 22	23
								Hour B	Hour Beginning							
Timeframe	Hour	L eq	L <sub>max</sub>	L <sub>min</sub>	L1%	12%	L5%	%87	L25%	<b>720%</b>	%067	<b>762%</b>	%667	L eq	Adj.	Adj. L <sub>eq</sub>
	0	50.3	77.4	39.6	59.0	56.0	53.0	51.0	46.0	43.0	40.0	40.0	39.0	50.3	10.0	60.3
	-	52.2	71.7	42.5	66.0	62.0	56.0	52.0	48.0	46.0	44.0	43.0	43.0	52.2	10.0	62.2
Night	3 5	50.0	72.6 63.0	43.0 43.7	57.0	54.0	52.0 54.0	51.0	48.0 51.0	46.0 49.0	44.0 46.0	44.0	43.0	50.0	10.0	60.0 61 0
	n 4	2.12	80.4	44.3	53.0 63.0	61.0	0.42	56.0	0.10	0.02	46.0	46.0	45.0	2.22	10.0	0.10 65.7
	ъ	55.4	71.3	49.1	63.0	60.0	58.0	57.0	55.0	54.0	52.0	51.0	50.0	55.4	10.0	65.4
	9	57.0	78.2	46.0	66.0	64.0	61.0	60.0	56.0	54.0	50.0	49.0	48.0	57.0	10.0	67.0
	2	62.3	85.6	48.4	74.0	0.69	65.0	63.0	60.0	58.0	53.0	51.0	50.0	62.3	0.0	62.3
	∞	60.3	73.4	48.2	68.0	67.0	65.0	64.0	60.0	58.0	52.0	51.0	50.0	60.3	0.0	60.3
	<b>б</b>	63.7	78.5	52.6	70.0	69.0	68.0	67.0	64.0	62.0	58.0	57.0	54.0	63.7	0.0	63.7
2	10	62.8	88.7	48.1	0.69	67.0	65.0	64.0	61.0	58.0	51.0	50.0	49.0	62.8	0.0	62.8
	11	57.9	76.0	47.9	67.0	65.0	63.0	61.0	57.0	54.0	51.0	50.0	49.0	57.9	0.0	57.9
Day	71 21	03.0 63.7	83.8	73.9	0.27	0.07	08.0 68.0	0.70 66.0	03.U 63.0	0.10	0.76	0.72	0.00 76.0	03.0 63.7	0.0	03.0 63.7
	14	63.6	80.4	55.3	70.0	68.0	67.0	0.00 66.0	63.0	61.0	59.0	58.0	57.0	63.6	0.0	63.6
	15	58.8	75.6	48.5	67.0	65.0	63.0	62.0	59.0	56.0	52.0	52.0	50.0	58.8	0.0	58.8
	16	58.3	78.0	48.3	68.0	66.0	63.0	61.0	57.0	54.0	52.0	51.0	50.0	58.3	0.0	58.3
	17	57.1 61 6	71.5	48.6 40 E	66.0 71.0	65.0	62.0 65 0	60.0 62.0	56.0	54.0	51.0	51.0	50.0	57.1 61 6	0.0	57.1 61 6
	19	69.6 69.6	92.8	50.3	84.0	80.0	68.0	65.0	59.0	57.0	53.0	53.0	52.0	9.69	5.0	74.6
Evening	20	57.6	71.3	48.8	65.0	64.0	62.0	61.0	57.0	55.0	52.0	51.0	50.0	57.6	5.0	62.6
	21	56.7	76.1	47.3	65.0	63.0	60.0	58.0	55.0	53.0	49.0	49.0	48.0	56.7	5.0	61.7
Night	22	57.9	82.1	46.4	69.0	65.0	60.0	57.0	53.0	51.0	48.0	48.0	47.0	57.9	10.0	67.9
Contraction 1	23	54.9	73.4	47.3	66.0	61.0	57.0	56.0	52.0	51.0	49.0	48.0	48.0	54.9	10.0	64.9
	nour Miss	L eq	- max	L min	077		0.01		0/071	000	610	001	000		humn be -	
Day	Max	63.7	C.1.7 88.7	55.3 55.3	74.0	0.07	02.0 68.0	67.0	50.0 64.0	54.0 62.0	0.1.0 29.0	58.0	57.0	24-Hour	Daytime	Nighttime
Energy /	Average	61.8	Ave	Average:	69.5	67.5	65.2	63.7	60.1	57.8	53.9	53.1	51.8	61 1	<b>C</b> 7	
Evening	Min Max	56.7 69.6	71.3 92.8	47.3 50.3	65.0 84.0	63.0 80.0	60.0 68.0	58.0 65.0	55.0 59.0	53.0	49.0 53.0	49.0 53.0	48.0 52.0	7°70	-10	04.7
Energy .	Aver	65.3		Average:	71.3	69.0	63.3	61.3	57.0	55.0	51.3	51.0	50.0			
Night		50.0	63.0	39.6	57.0	54.0	52.0	51.0	46.0	43.0	40.0	40.0	39.0			
ואופוור	Max	57.9	82.1	49.1	69.0	65.0	61.0	60.0	56.0	54.0	52.0	51.0	50.0		0.00	
Energy	Energy Average	54.7	AVE	Average:	63.0	59.9	56.4	54.8	51.2	49.3	46.6	46.0	45.2			

JN: 12620 Analyst: R. Saber

Meter: Piccolo I

24-Hour Noise Level Measurement Summary Location: L5 - Located within Ross Snyder Recreation Center, east of the Project site.

Date: Wednesday, May 22, 2019

Project: Parkview

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APPENDIX 7.1:

**OFF-SITE TRAFFIC NOISE CONTOURS** 



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FH	WA-RD-77-108 HIG	HWAY N	IOISE PRED	ICTION MO	DEL	
<i>Scenario:</i> Existing W <i>Road Name:</i> Central Av <i>Road Segment:</i> n/o 41st S				oject Name:   ob Number:		
SITE SPECIFIC II	NPUT DATA			NOISE N	IODEL INPU	TS
Highway Data		1	Site Conditio	ons (Hard =	10, Soft = 15)	
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	19,380 vehicles 10% 1.938 vehicles			n Trucks (2 ) Trucks (3+ )	,	
Vehicle Speed:	35 mph					
Near/Far Lane Distance:	50 feet	-	Vehicle Mix	5	Davis Consta	- Mintel Doite
Site Data			Vehicle7	ype Autos:	Day Evening 77.5% 12.99	· ·
			Modiu		84.8% 4.99	
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0 feet 0.0				86.5% 2.7%	
Centerline Dist. to Barrier:	80.0 feet	1	Noise Sourc	e Elevation	s (in feet)	
Centerline Dist. to Observer:	90.0 feet		A	Autos: 0.	000	
Barrier Distance to Observer:	10.0 feet		Medium Tr	ucks: 2.	297	
Observer Height (Above Pad):	5.0 feet		Heavy Tr	ucks: 8.	006 Grade	Adjustment: 0.0
Pad Elevation: Road Elevation:	0.0 feet	-	Lane Equiva	lont Distan	no (in foot)	
Road Elevation: Road Grade:	0.0 feet 0.0%	-			603	
Left View:	-90.0 degrees		ر Medium Tr		500	
Right View:	90.0 degrees		Heavy Tr		510	
FHWA Noise Model Calculation	ıs					
VehicleType REMEL	Traffic Flow D	listance	Finite Roa	d Fresr	el Barrier A	Atten Berm Atten
Autos: 64.30	2.01	-2.4	5 0.	.00	-1.02	0.00 0.00
Medium Trucks: 75.75		-2.4				0.00 0.00
Heavy Trucks: 81.57	-19.18	-2.4	5 0.	.00	-1.50	0.000 0.00
Unmitigated Noise Levels (with		rier atten	uation)			-
VehicleType Leq Peak Ho				Leq Night	Ldn	CNEL
	3.9 62.0		60.2	54.1		2.8 63.
	8.1 56.6		50.2	48.7	-	7.1 57.4
	9.9 58.5		49.5	50.7	-	9.1 59.:
	6.1 64.4		60.9	56.5	6	5.1 65.
Centerline Distance to Noise C	ontour (in feet)					
		70 0		65 dBA	60 dBA	55 dBA
	Ldn		-	92	289	915
	CNEL	: 3	2	101	320	1,010

	FHV	VA-RD-77-108 I	HIGHW	AY NO	DISE PR	EDICTIO	N MOE	DEL			
Road Narr	io: Existing Wi ne: Central Av. nt: s/o 41st St.	,				Project N Job Nui			ew .		
	SPECIFIC IN					NC	ISF M	ODF		s	
Highway Data	or con to m	0. 5/1/1		S	ite Cond	litions (F					
* /	Traffic (Adt):	18,810 vehicles		-				utos:	10		
	Percentage:	10%			Med	lium Truc			10		
	lour Volume:	1.881 vehicles				vy Truck			10		
	hicle Speed:	35 mph				·	- (				
	ne Distance:	50 feet		V	ehicle N		- I .				
					Vehic	cleType		Day	Evening	Night	Daily
Site Data				_				77.5%			97.42
	rrier Height:	0.0 feet				dium Tru		34.8%		10.3%	
Barrier Type (0-W		0.0			н	leavy Tru	CKS: 8	36.5%	2.7%	10.8%	0.749
Centerline Di		80.0 feet		N	oise So	urce Elev	/ations	(in fe	et)		
Centerline Dist.		90.0 feet				Autos:					
Barrier Distance		10.0 feet			Mediun	1 Trucks:					
Observer Height	(Above Pad):	5.0 feet				/ Trucks:			Grade Ad	iustment	: 0.0
P	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		La	ane Equ	ivalent D			'eet)		
	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degree	6			n Trucks:					
	Right View:	90.0 degree	6		Heavy	/ Trucks:	86.5	10			
FHWA Noise Mod	el Calculation	s		-							
VehicleType	REMEL	Traffic Flow	Distan	се	Finite I	Road	Fresne	el 🛛	Barrier Att	en Ber	m Atten
Autos:	64.30	1.88		-2.45		0.00	-	1.02	0.0	000	0.00
Medium Trucks:	75.75	-15.35		-2.45		0.00	-	1.15	0.0	000	0.00
Heavy Trucks:	81.57	-19.31		-2.45		0.00	-	1.50	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and b	arrier a	ttenu	ation)						
VehicleType	Leq Peak Hou			q Eve		Leq N			Ldn		VEL
Autos:	63		1.8		60.1		54.0		62.6		63
Medium Trucks:	57		6.4		50.1		48.5		57.0		57.
Heavy Trucks:			8.4		49.4		50.6		59.0		59
Vehicle Noise:	66	.0 6	4.2		60.8		56.4		64.9	9	65
Centerline Distan	ce to Noise Co	ontour (in feet)	-	70 /		05.0					10.4
				70 dE	3A	65 dE	3A	6	i0 dBA		dBA
			.dn: FI :	28 31		89 98			281 310		88 81

Wednesday, August 14, 2019

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PR	EDICTI		DEL			
	: Existing Wi : Central Av. : s/o Vernon						Name: F umber: 1		ew		
SITE S	PECIFIC IN	PUT DATA			-				L INPUTS	5	
Highway Data				S	ite Con	ditions (	Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt):	17,820 vehicles					A	Autos:	10		
Peak Hour F	Percentage:	10%			Mee	dium Tru	icks (2 A	xles):	10		
Peak Ho	ur Volume:	1,782 vehicles			Hea	avy Truc	:ks (3+ A	xles):	10		
Veh	icle Speed:	35 mph		V	ehicle N	Ai v					
Near/Far Lan	e Distance:	50 feet		V		cleType		Day	Evening	Night	Daily
Site Data					VOIII			77.5%	•	9.6%	97.429
Barr	ier Height:	0.0 feet			Me	edium Tr	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wa		0.0			E	leavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist		80.0 feet		N	loise So	urco Ek	ovations	(in fi	oot)		
Centerline Dist. to	Observer:	90.0 feet		14	0136 30	Autos			eel)		
Barrier Distance to	Observer:	10.0 feet			Modiur	n Trucks					
Observer Height (A	bove Pad):	5.0 feet				y Trucks			Grade Adj	istment <sup>.</sup>	0.0
Pad	d Elevation:	0.0 feet		L		·			,	Journorm.	0.0
Road	d Elevation:	0.0 feet		Li	ane Equ	ıivalent			feet)		
R	oad Grade:	0.0%				Autos					
	Left View:	-90.0 degree	s			n Trucks					
	Right View:	90.0 degree	s		Heav	y Trucks	8: 86.5	510			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	e/	Barrier Atte	en Berr	n Atten
Autos:	64.30	1.65		-2.45		0.00		1.02	0.0	00	0.00
Medium Trucks:	75.75	-15.59		-2.45		0.00		1.15	0.0	00	0.00
Heavy Trucks:	81.57	-19.54		-2.45		0.00		1.50	0.0	00	0.00
Unmitigated Noise	Levels (with	out Topo and I	barrier	attenu	ation)						
,	.eq Peak Hou			.eq Eve	~	Leq I	•		Ldn		JEL
Autos:	63		61.6		59.8		53.8		62.4		63.0
Medium Trucks:	57		56.2		49.8		48.3		56.8		57.0
Heavy Trucks:	59		58.2		49.1		50.4		58.7		58.8
Vehicle Noise:	65	.7 6	64.0		60.6		56.2		64.7		65.
Centerline Distance	e to Noise Co	ontour (in feet)		_		_					
				70 dł		65 0			60 dBA		dBA
		-	.dn:	27 29		84 93			266	-	41
			IFI :						294		29

Road Nan	rio: Existing Wi ne: Hooper Av. ent: n/o 33rd St	,				t Name Number				
SITE	SPECIFIC IN	PUT DATA				NOISE	MODE	L INPUT	s	
Highway Data				Site	Condition	6 (Hard	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	15,190 vehicle	6				Autos	: 10		
Peak Hour	Percentage:	10%			Medium 7	rucks (2	Axles)	: 10		
Peak I	lour Volume:	1,519 vehicle	5		Heavy Tr	ucks (3+	Axles)	: 10		
Ve	ehicle Speed:	25 mph		Mate	icle Mix					
Near/Far La	ne Distance:	12 feet		ven	VehicleTy	0	Day	Evening	Night	Daily
Site Data					veniciery	e Autos:	77.5%	~	9.6%	
				_	Medium		84.89		9.0%	1.84%
	rrier Height:	0.0 feet				Trucks:			10.3%	0.74%
Barrier Type (0-V	. ,	0.0			neavy	HUCKS.	00.07	0 Z.170	10.070	0.74%
	ist. to Barrier:	66.0 feet		Nois	se Source I	levatio	ns (in f	ieet)		
Centerline Dist.		76.0 feet			Aut	os: (	000.0			
Barrier Distance		10.0 feet		N	ledium Truc	ks: 2	2.297			
Observer Height	· /	5.0 feet			Heavy Truc	ks: 8	3.006	Grade Ad	justment.	0.0
-	ad Elevation:	0.0 feet		_					-	
Ro	ad Elevation:	0.0 feet		Lan	e Equivale			teet)		
	Road Grade:	0.0%			Aut		5.928			
	Left View:	-90.0 degree			ledium Truc		5.811			
	Right View:	90.0 degree	es		Heavy Truc	ks: 7	5.822			
	ol Calculation	s								
FHWA Noise Mod										
FHWA Noise Mod VehicleType	REMEL	Traffic Flow	Distan	ice F	inite Road	Fre	snel	Barrier Att	en Ber	m Atten
	REMEL	Traffic Flow 2.42		-1.88	inite Road 0.00		onel -0.99		en Ber	
VehicleType	REMEL 58.73							0.0		0.00
VehicleType Autos:	REMEL 58.73 70.80	2.42		-1.88	0.00		-0.99	0.0 0.0	000	0.00
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 58.73 70.80 77.97	2.42 -14.82 -18.78		-1.88 -1.88 -1.88	0.00		-0.99 -1.15	0.0 0.0	000 000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 58.73 70.80 77.97	2.42 -14.82 -18.78 out Topo and	barrier a	-1.88 -1.88 -1.88	0.00 0.00 0.00		-0.99 -1.15	0.0 0.0	000 000 000	0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b>	REMEL 58.73 70.80 77.97 e Levels (with Leq Peak Hou	2.42 -14.82 -18.78 <b>out Topo and</b> rr Leq Day	barrier a	-1.88 -1.88 -1.88 <i>ttenuat</i> eq Eveni	0.00 0.00 0.00		-0.99 -1.15 -1.57	0.0 0.0 0.0	200 200 200 <i>CI</i>	0.00 0.00 0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Nois</b> VehicleType	REMEL 58.73 70.80 77.97 e Levels (with Leg Peak Hou 59	2.42 -14.82 -18.78 out Topo and r Leq Day .3	barrier a	-1.88 -1.88 -1.88 attenuation	0.00 0.00 0.00 ion) Let	n Night	-0.99 -1.15 -1.57	0.0 0.0 0.0	2000 2000 2000 2000 <i>Cl</i> 2	0.000 0.000 0.000 VEL 58.8
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	REMEL 58.73 70.80 77.97 e Levels (with Leq Peak Hou 59 54	2.42 -14.82 -18.78 <b>out Topo and</b> rr Leq Day .3 .1	barrier a	-1.88 -1.88 -1.88 <i>ttenuat</i> eq Eveni	0.00 0.00 0.00 ion) ing Lea 55.6	n Night 49	-0.99 -1.15 -1.57 .5 .7	0.0 0.0 0.0 <i>Ldn</i> 58.2	2000 2000 2000 2000 20 2 1	0.000 0.000 0.000 VEL 58.8 53.4
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	REMEL 58.73 70.80 77.97 e Levels (with Leg Peak Hou 59 54 54	2.42 -14.82 -18.78 <b>out Topo and</b> r Leq Day .3 .1 .3	<i>barrier a</i> / <i>Le</i> 57.4 52.6	-1.88 -1.88 -1.88 attenuation	0.00 0.00 ion) 55.6 46.2	9 <i>Night</i> 49 44 48	-0.99 -1.15 -1.57 .5 .7	0.0 0.0 0.0 <i>Ldn</i> 58.2 53.2	2000 2000 2000 2000 22 1 5	0.000 0.000 0.000 VEL 58.8 53.4 56.6
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 58.73 70.80 77.97 e Levels (with Leq Peak Hou 59 54 57 62	2.42 -14.82 -18.78 <b>Dut Topo and</b> r Leq Day .3 .1 .3 .2	barrier a 57.4 52.6 55.9 60.5	-1.88 -1.88 -1.88 <b>ttenuat</b> eq Eveni	0.00 0.00 0.00 ing Lee 55.6 46.2 46.9 56.6	y Night 49 44 48 52	-0.99 -1.15 -1.57 .5 .7 .1 .7	0.( 0.( 0.( 58.2 53. 56.5 61.2	000 000 000 2 2 1 5 2	0.000 0.000 0.000 VEL 58.8 53.4 56.6 61.8
Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 58.73 70.80 77.97 e Levels (with Leq Peak Hou 59 54 57 62	2.42 -14.82 -18.78 <b>but Topo and</b> <i>r</i> Leq Day 3 .1 .1 .3 .2 <b>butour (in feet</b>	barrier a / Le 57.4 52.6 55.9 60.5	-1.88 -1.88 -1.88 <i>ttenuat</i> <i>eq Eveni</i> 70 dBA	0.00 0.00 0.00 ing Lee 55.6 46.2 46.9 56.6	y Night 49 44 48 52 5 dBA	-0.99 -1.15 -1.57 .5 .7 .1 .7	0.( 0.( 0.( 58.2 53. 56.( 61.2 60 dBA	200 200 200 200 2 1 5 2 2 55	0.000 0.000 VEL 58.E 53.4 56.6 61.5 dBA
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL 58.73 70.80 77.97 e Levels (with Leq Peak Hou 59 54 57 62	2.42 -14.82 -18.78 <b>out Topo and</b> <i>tr</i> Leq Day .3 .1 .3 .2 <i>ontour (in feet</i>	barrier a 57.4 52.6 55.9 60.5	-1.88 -1.88 -1.88 <b>ttenuat</b> eq Eveni	0.00 0.00 0.00 ing Lee 55.6 46.2 46.9 56.6	y Night 49 44 48 52	-0.99 -1.15 -1.57 .5 .7 .1 .7	0.( 0.( 0.( 58.2 53. 56.5 61.2	2000 2000 2000 22 11 55 22 2 55 3	0.000 0.000 VEL 58.8 53.4 56.6 61.8

Wednesday, August 14, 2019

	FHW	A-RD-77-108 HIG	HWAY I		REDICTIO				
	<ul> <li>D: Existing With</li> <li>D: Hooper Av.</li> <li>D: n/o 41st St.</li> </ul>	out Project				ame: Park nber: 1262			
SITE S	PECIFIC INP	UT DATA			NO	ISE MOD	DEL INPUT	'S	
Highway Data				Site Con	ditions (H	ard = 10,	Soft = 15)		
Average Daily 1	Traffic (Adt): 16	i,590 vehicles				Auto	s: 10		
Peak Hour I	Percentage:	10%				ks (2 Axle	· · ·		
		,659 vehicles		Hea	avy Truck	s (3+ Axles	s): 10		
	nicle Speed:	25 mph	ŀ	Vehicle N	<i>lix</i>				
Near/Far Lan	e Distance:	12 feet	ŀ	Vehi	cleType	Day	Evening	Night	Daily
Site Data					Au	tos: 77.5	5% 12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet		Me	edium Truc	cks: 84.8	3% 4.9%	10.3%	1.84%
Barrier Type (0-Wa	all, 1-Berm):	0.0		H	leavy Truc	cks: 86.5	5% 2.7%	10.8%	0.74%
Centerline Dis		66.0 feet	ŀ	Noise So	urce Elev	ations (in	feet)		
Centerline Dist. t		76.0 feet	ŀ		Autos:	0.000	,		
Barrier Distance t		10.0 feet		Mediun	n Trucks:	2.297			
Observer Height (A	,	5.0 feet		Heav	y Trucks:	8.006	Grade Ad	djustmen	t: 0.0
	d Elevation:	0.0 feet	ŀ	Lono Err	uivelent D	istance (i	n fact)		
	d Elevation: Road Grade:	0.0 feet	ł	Lane Equ	Autos:	75.928	n leel)		
R		0.0%		Modiur	n Trucks:	75.811			
	Right View:	-90.0 degrees 90.0 degrees			y Trucks:	75.822			
FHWA Noise Mode	l Calculations								
VehicleType	REMEL	Traffic Flow D	istance	Finite	Road	Fresnel	Barrier At	ten Be	rm Atten
Autos:	58.73	2.80	-1.8	8	0.00	-0.9	9 0.	000	0.00
Medium Trucks:	70.80	-14.44	-1.8	8	0.00	-1.1	5 0.	000	0.00
Heavy Trucks:	77.97	-18.39	-1.8	8	0.00	-1.5	7 0.	000	0.00
Unmitigated Noise	Levels (withou	It Topo and barr	ier atter	uation)					
	Leq Peak Hour			vening	Leq Ni		Ldn		NEL
Autos:	59.7			56.0		49.9	58.	-	59.2
Medium Trucks:	54.5			46.6		45.1	53.	-	53.8
Heavy Trucks:	57.7			47.2		48.5	56.	-	57.0
Vehicle Noise:	62.5			57.0		53.0	61.	.5	61.9
Centerline Distance	e to Noise Con	tour (in feet)	ar -	10.4					
				dBA	65 dE	8A	60 dBA		i dBA
		Ldn:		1	34		108		343
		CNEL:	1	2	37		119	3	375

	FHW	/A-RD-77-108 H	HIGHW	AY N	DISE PR	EDICTIC	ON MOI	DEL			
Road Nam	o: Existing Wit e: Hooper Av. nt: n/o Vernon	,				Project N Job Nu			ew .		
SITE S	SPECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				S	ite Cond	litions (F	lard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 1	5,630 vehicles					/	Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Truc	cks (2 A	xles):	10		
Peak H	our Volume:	1,563 vehicles			Hea	vy Truck	(3+ A	xles):	10		
Vel	hicle Speed:	25 mph		V	ehicle M	liv					
Near/Far Lar	ne Distance:	12 feet				leTvpe		Dav	Evening	Night	Daily
Site Data					VCINC			77.5%			97.429
				_	Me	dium Tru		84.8%		10.3%	
	rier Height:	0.0 feet				eavy Tru		86.5%		10.8%	
Barrier Type (0-W		0.0				outy na	ono.	00.070	2.770	10.070	0.7 17
Centerline Dis Centerline Dist.		66.0 feet		N	oise Sou	urce Ele	vations	s (in fe	et)		
		76.0 feet				Autos:	0.0	000			
Barrier Distance		10.0 feet			Medium	Trucks:	2.2	297			
Observer Height (	Above Pad): ad Elevation:	5.0 feet			Heavy	Trucks:	8.0	006	Grade Ad	ljustment	0.0
	ad Elevation: ad Elevation:	0.0 feet		1	ane Equ	ivalont l	Distanc	o (in t	(oot)		
	a Elevation: Road Grade:	0.0 feet		-	ane Lyu	Autos:			eel)		
r	Road Grade:	0.0%			Modium	n Trucks:					
	Right View:	-90.0 degrees 90.0 degrees				/ Trucks: / Trucks:					
FHWA Noise Mode	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite F	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	58.73	2.54		-1.88		0.00		-0.99	0.0	000	0.00
Medium Trucks:	70.80	-14.70		-1.88		0.00		-1.15	0.0	000	0.00
Heavy Trucks:	77.97	-18.65		-1.88		0.00		-1.57	0.0	000	0.00
Unmitigated Noise			-					-			
	Leq Peak Hou			eq Ev		Leq N			Ldn		VEL
Autos:	59.		7.5		55.7		49.7		58.3		58.
Medium Trucks:	54.		2.7		46.4		44.8		53.		53.
Heavy Trucks:	57.	-	6.0		47.0		48.2		56.		56.
Vehicle Noise:	62.		0.6		56.7		52.8		61.3	3	61.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 d	BA	65 d	BA	6	0 dBA	55	dBA
										1 50	
		1	dn:	10		32			102	3	23

Fł	IWA-RD-77-108 HI	GHWAY N	IOISE PF	REDICTIO	N MODEL		
Scenario: Existing V Road Name: Hooper A Road Segment: s/o Verno	v.				ame: Parkv nber: 12620		
SITE SPECIFIC I	NPUT DATA					EL INPUTS	
Highway Data			Site Con	ditions (H	ard = 10, S	oft = 15)	
Average Daily Traffic (Adt):	14,290 vehicles				Autos	a: 10	
Peak Hour Percentage:	10%		Me	dium Truci	ks (2 Axles,	): 10	
Peak Hour Volume:	1,429 vehicles		Hea	avy Trucks	s (3+ Axles,	): 10	
Vehicle Speed:	25 mph	-	Vehicle N	Niv			
Near/Far Lane Distance:	12 feet	-		cleType	Day	Evening	Night Daily
Site Data				Au		•	9.6% 97.42%
Barrier Height:	0.0 feet		Me	edium Truc	ks: 84.8	% 4.9%	10.3% 1.84%
Barrier Type (0-Wall, 1-Berm):			F	leavy Truc	ks: 86.5	% 2.7%	10.8% 0.74%
Centerline Dist. to Barrier:		H	Naiaa Ca	uree Elev	ations (in	faat	
Centerline Dist. to Observer:	76.0 feet	H	NUISE 30	Autos:	0.000	leel)	
Barrier Distance to Observer:	10.0 feet		Madium	n Trucks:	2.297		
Observer Height (Above Pad):	5.0 feet			y Trucks:	8.006	Grade Adiu	stment: 0.0
Pad Elevation:	0.0 feet					,	Stincine. 0.0
Road Elevation:	0.0 feet	1	Lane Equ	ivalent D	istance (in	feet)	
Road Grade:	0.0%			Autos:	75.928		
Left View:	-90.0 degrees		Mediur	n Trucks:	75.811		
Right View:	90.0 degrees		Heav	y Trucks:	75.822		
FHWA Noise Model Calculatio	ns	1					
VehicleType REMEL		Distance	Finite	Road	Fresnel	Barrier Atter	
Autos: 58.7	3 2.15	-1.8	8	0.00	-0.99	0.00	0 0.00
Medium Trucks: 70.8		-1.8	-	0.00	-1.15		
Heavy Trucks: 77.9	7 -19.04	-1.8	8	0.00	-1.57	0.00	0 0.00
Unmitigated Noise Levels (wit					ġ.	1	
VehicleType Leq Peak He			vening	Leq Ni		Ldn	CNEL
	i9.0 57.		55.3		49.3	57.9	58.
	52.		46.0		44.4	52.9	53.
	57.1 55.		46.6		47.8	56.2	56.
	60.	2	56.3		52.4	60.9	61.
Centerline Distance to Noise (	Contour (in feet)						
			dBA	65 dB	A	60 dBA	55 dBA
	Ldi		-	30		93	295
	CNEL	L: 1	0	32		102	323

	FHW	/A-RD-77-108	HIGHW	AY N		EDICT		DEL			
	: Existing Wit : Compton Av : s/o Adams B	<i>.</i>					Name: F umber: 1		ew		
SITE S	PECIFIC IN	PUT DATA				N	OISE N	IODE	L INPUTS	5	
Highway Data				S	ite Cond	litions	(Hard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt):	6,620 vehicles	6				A	Autos:	10		
Peak Hour P	ercentage:	10%			Med	lium Tru	icks (2 A	xles):	10		
Peak Ho	ur Volume:	662 vehicles	5		Hea	vy Truc	cks (3+ A	xles):	10		
Vehi	icle Speed:	25 mph		14	ehicle M	114					
Near/Far Lane	e Distance:	12 feet		V		leType		Day	Evening	Night	Daily
Site Data				-	Venic			77.5%	~	9.6%	
	ier Heiaht:	0.0 feet			Me	, dium Ti		B4.8%		10.3%	
Barrier Type (0-Wa		0.0 reet 0.0			Н	eavy Tr	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist.	. ,	66.0 feet									
Centerline Dist. to		76.0 feet		N	loise Sou				eet)		
Barrier Distance to		10.0 feet				Autos					
Observer Height (A		5.0 feet			Medium						
0 1	l Flevation:	0.0 feet			Heavy	/ Trucks	s: 8.0	06	Grade Adj	ustment	: 0.0
	l Elevation:	0.0 feet		L	ane Equ	ivalent	Distanc	e (in i	feet)		
	nad Grade:	0.0%		F		Auto			,		
70	Left View:	-90.0 degree	e.		Medium						
I	Right View:	90.0 degree			Heavy	Truck	s: 75.8	322			
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite F	Road	Fresn	el	Barrier Atte	en Bei	m Atten
Autos:	58.73	-1.19		-1.88		0.00		0.99	0.0	00	0.000
Medium Trucks:	70.80	-18.43		-1.88		0.00		1.15	0.0	00	0.000
Heavy Trucks:	77.97	-22.38		-1.88		0.00		1.57	0.0	00	0.000
Unmitigated Noise	Levels (witho	out Topo and	barrier a	attenı	uation)						
<i>,</i> ,	eq Peak Hou.			eq Ev	•	Leq	Night		Ldn		NEL
Autos:	55.	-	53.8		52.0		45.9		54.6		55.2
Medium Trucks:	50.	-	49.0		42.6		41.1		49.5		49.8
Heavy Trucks:	53.		52.3		43.3		44.5		52.9		53.0
Vehicle Noise:		5	56.9		53.0		49.0		57.6	5	57.9
venicie ivolse.	58.										
		-	)								
		ntour (in feet		70 d	BA		dBA	e	i0 dBA		dBA
Centerline Distance		ntour (in feet,	Ldn:	70 d 4 5	BA		4	Ê	60 dBA 43 47	1	dBA 137

Wednesday, August 14, 2019

	FHW	/A-RD-77-108 HIC	GHWAY	NOISE PF	REDICTION	N MODEL			
	o: Existing Wit e: Compton Av at: s/o 41st St.					ame: Parkvi nber: 12620			
	SPECIFIC IN	PUT DATA					L INPUTS	S	
Highway Data				Site Con	ditions (Ha	ard = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	7,970 vehicles				Autos.			
	Percentage:	10%				is (2 Axles).			
	our Volume:	797 vehicles		Hea	avy Trucks	(3+ Axles).	10		
	nicle Speed:	25 mph		Vehicle N	Nix				
Near/Far Lar	ne Distance:	12 feet		Vehi	cleType	Day	Evening	Night	Daily
Site Data					Aut	os: 77.5%	6 12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet		Me	edium Truc	ks: 84.8%	6 4.9%	10.3%	1.84%
Barrier Type (0-Wa	•	0.0		F	leavy Truc	ks: 86.5%	6 2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	66.0 feet	-	Noise So	urce Elev	ations (in f	eet)		
Centerline Dist. t		76.0 feet	ľ		Autos:	0.000	,		
Barrier Distance t		10.0 feet		Mediur	n Trucks:	2.297			
Observer Height (/	,	5.0 feet		Heav	y Trucks:	8.006	Grade Adj	iustment	: 0.0
	d Elevation:	0.0 feet	-	1 E	, desale and Di		6		
	d Elevation:	0.0 feet	-	Lane Equ	Autos:	istance (in 75.928	reet)		
F	Road Grade: Left View:	0.0%		Madium	n Trucks:	75.928			
	Right View:	-90.0 degrees 90.0 degrees			y Trucks:	75.822			
FHWA Noise Mode	l Calculations	;							
VehicleType	REMEL	Traffic Flow [	Distance	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atten
Autos:	58.73	-0.38	-1.8	38	0.00	-0.99	0.0	000	0.00
Medium Trucks:	70.80	-17.62	-1.8	38	0.00	-1.15	0.0	000	0.00
Heavy Trucks:	77.97	-21.58	-1.8	38	0.00	-1.57	0.0	000	0.00
Unmitigated Noise			The second se					T	
	Leq Peak Hou			vening	Leq Nig		Ldn		NEL
Autos:	56.		-	52.8		46.7	55.4		56.
Medium Trucks:	51.		-	43.4		41.9	50.3		50.
Heavy Trucks: Vehicle Noise:	54. 59			44.1 53.8		45.3 49.9	53.7 58.4		53.
			'	00.0		43.3	36.4	•	50.
Centerline Distanc	e lo Noise Co	mour (in reet)	70	dBA	65 dB	A	60 dBA	55	dBA
		Ldr		5	16		52		65
		CNEL		6	18		57		80
							-		

		RD-77-108 I	nor	INVAT IN							
Scenario: Existing		ut Project					Name:		ew		
Road Name: Compto						Job N	umber:	12620			
Road Segment: s/o Vern	on Av.										
SITE SPECIFIC	INPU	T DATA							L INPUT	'S	
Highway Data				s	ite Cond	litions	(Hard =	: 10, So	oft = 15)		
Average Daily Traffic (Adt,	): 12,3	60 vehicles						Autos:	10		
Peak Hour Percentage	e:	10%			Mea	lium Tri	ucks (2	Axles):	10		
Peak Hour Volume	e: 1,2	36 vehicles			Hea	vy Tru	cks (3+	Axles):	10		
Vehicle Speed	1:	25 mph		v	ehicle M	lix					
Near/Far Lane Distance	e:	50 feet		F		leType		Dav	Evening	Night	Dailv
Site Data					10/110		Autos:	77.5%	•		
Barrier Heigh	¢	0.0 feet			Me	dium Ti	rucks:	84.8%			
Barrier Type (0-Wall, 1-Berm		0.0			н	eavy Ti	rucks:	86.5%	2.7%	10.89	6 0.74
Centerline Dist. to Barrie		0.0 30.0 feet		L		,					
Centerline Dist. to Observe		30.0 feet		^	loise So				eet)		
Barrier Distance to Observe	-	10.0 feet				Auto		.000			
Observer Height (Above Pad		5.0 feet			Medium			297			
Pad Elevation		0.0 feet			Heavy	/ Truck	s: 8	.006	Grade A	djustmer	nt: 0.0
Road Elevation		0.0 feet		L	ane Equ	ivalent	Distan	ce (in	feet)		
Road Grade		0.0%				Auto		.603	,		
Left Viev	v: _0	0.0 degrees			Medium	Truck	s: 86	.500			
Right View		0.0 degrees			Heavy	/ Truck	s: 86	.510			
FHWA Noise Model Calculati	ons										
VehicleType REMEL	Tra	affic Flow	Dis	tance	Finite F	Road	Fres	nel	Barrier At	ten Be	erm Atter
Autos: 58.	73	1.52		-2.45		0.00		-1.02	0.	.000	0.00
Medium Trucks: 70.	80	-15.72		-2.45		0.00		-1.15		.000	0.00
Heavy Trucks: 77.	97	-19.67		-2.45		0.00		-1.50	0.	.000	0.00
Unmitigated Noise Levels (w			arrie								
VehicleType Leq Peak I		Leq Day		Leq Ev		Leq	Night		Ldn		ONEL
Autos:	57.8		5.9		54.1		48.		56		57
Medium Trucks:	52.6		1.1		44.8		43.		51		51
Heavy Trucks:	55.9		4.4		45.4		46.	-	55		55
Vehicle Noise:	60.7		9.0		55.1		51.	2	59	.7	60
Centerline Distance to Noise	Conto	our (in feet)						1			
			L	70 d			dBA	6	60 dBA		5 dBA
			.dn:	8			7		84		265
			FI :	9			9		92		290

Wednesday, August 14, 2019

Scenario: Existing	\A/i+	hout Project				Project	Vame: Parl	wiew		
Road Name: Long Be							mber: 126			
Road Segment: n/o 41st		Av.				000740	11001. 120	20		
SITE SPECIFIC		Ρυτ σάτα		1		N	DISE MOI	DEL INPUTS		
Highway Data		UT DATA			Site Con			Soft = 15)		
Average Daily Traffic (Adt	):	8,870 vehicles					Auto	os: 10		
Peak Hour Percentage		10%			Me	dium Tru	cks (2 Axle	s): 10		
Peak Hour Volume	e	887 vehicles			Hei	avy Truc	ks (3+ Axle	s): 10		
Vehicle Speed	l:	35 mph		-	V-6-1-1- 8			-		
Near/Far Lane Distance	e -	72 feet		-	Vehicle N	n <b>ix</b> cleType	Da	/ Evening	Night	Dailv
Site Data					veni		utos: 77.		9.6%	97.42
					1.10	edium Tru			10.3%	1.849
Barrier Heigh		0.0 feet				leavv Tru		5% 2.7%	10.8%	0.749
Barrier Type (0-Wall, 1-Berm		0.0 110.0 feet				icavy m	10/13. 00.	2.170	10.070	0.147
Centerline Dist. to Barrie Centerline Dist. to Observe		120.0 feet		4	Noise So	urce Ele	vations (ii	n feet)		
Barrier Distance to Observe	-	120.0 feet				Autos	0.000			
		5.0 feet			Mediur	n Trucks	2.297			
Observer Height (Above Pad Pad Elevation		0.0 feet			Heav	y Trucks	8.006	Grade Adju	istment:	0.0
Road Elevation		0.0 feet		E E	l ane Fru	ivalent	Distance (	in feet)		
Road Grade		0.0%		H	Lano Lqu	Autos		,		
Left View		-90.0 degree	~		Modiur		114.502			
Right View		90.0 degree					114.503			
rugin vici		Solo degree	3		mour	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
FHWA Noise Model Calculati	ons									
VehicleType REMEL		Traffic Flow	Di	stance	Finite		Fresnel	Barrier Atte	n Berr	m Atten
Autos: 64.	30	-1.38		-3.6	7	0.00	-1.0			0.00
Medium Trucks: 75.	75	-18.62		-3.6	7	0.00	-1.1	15 0.00	00	0.00
Heavy Trucks: 81.	57	-22.57		-3.6	7	0.00	-1.4	40 0.00	00	0.00
Unmitigated Noise Levels (w	itho	ut Topo and I	barri	ier atten	nuation)					
VehicleType Leq Peak I	loui	r Leq Day		Leq E	vening	Leq N	light	Ldn	CN	IEL
Autos:	59.	3 !	57.4		55.6		49.5	58.2		58.
Medium Trucks:	53.	5 !	52.0		45.6		44.0	52.5		52.
Heavy Trucks:	55.	3 !	53.9		44.9		46.1	54.5		54.
Vehicle Noise:	61.	5	59.8		56.3		51.9	60.5		60.
Centerline Distance to Noise	Со	ntour (in feet)								
					dBA	65 d		60 dBA		dBA
			dn:	1	3	42	2	133	42	22
			IFI :		5	47		147		66

	FHW	A-RD-77-108	HIGH	WAY N	NOISE PR	EDICT		DEL			
Scenario: Existing Road Name: Long Be Road Segment: s/o 41st	each <i>i</i>						Name: F umber: 1		ew		
SITE SPECIFIC	INP	PUT DATA				N	IOISE N	IODE	L INPUTS	S	
Highway Data				;	Site Cond	litions	(Hard =	10, So	oft = 15)		
Average Daily Traffic (Ad	·		5					Autos:			
Peak Hour Percentag		10%					ucks (2 A				
Peak Hour Volum	e: 1	1,081 vehicles	5		Hea	avy Truo	cks (3+ A	xles):	10		
Vehicle Spee	d:	35 mph		1	Vehicle N	lix					
Near/Far Lane Distanc	e:	72 feet		-		leType		Day	Evening	Night	Daily
Site Data								77.5%	<b>v</b>	9.6%	
Barrier Heigh	nt.	0.0 feet			Me	dium T	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Bern		0.0			н	eavy Ti	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrie		110.0 feet		7	Noise So	urce El	evations	(in f	eet)		
Centerline Dist. to Observe		120.0 feet				Auto		00			
Barrier Distance to Observe		10.0 feet			Mediun	Truck	s: 22	97			
Observer Height (Above Pac	1):	5.0 feet				/ Truck		06	Grade Ad	iustmen	: 0.0
Pad Elevatio	n:	0.0 feet			,				,		
Road Elevatio	n:	0.0 feet		1	Lane Equ				feet)		
Road Grad		0.0%				Auto					
Left Vier		-90.0 degree					s: 114.5				
Right Vier	W:	90.0 degree	s		Heavy	/ Truck	s: 114.5	512			
FHWA Noise Model Calculat	ions										
Mahiala Tura DEMEL	· 1	T (// E)	0.1								
VehicleType REMEL		Traffic Flow	Dist	ance	Finite I	Road	Fresn	el	Barrier Atte	en Be	m Atten
	.30	-0.52	Dist	ance -3.6		Road 0.00		el -1.05	Barrier Atte 0.0		
Autos: 64			Dist		7					000	0.000
Autos: 64 Medium Trucks: 75	.30	-0.52	Dist	-3.6	7 7	0.00		1.05	0.0	000	0.000
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81	.30 .75 .57	-0.52 -17.76 -21.72	barrie	-3.6 -3.6 -3.6 <b>r atten</b>	7 7 7 nuation)	0.00 0.00 0.00		1.05 1.15	0.0	000 000 000	0.000
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levels (w VehicleType Leq Peak	.30 .75 .57 vithou Hour	-0.52 -17.76 -21.72 ut <b>Topo and</b> Leq Day	barrie	-3.6 -3.6 -3.6 <b>r atten</b>	7 7 7 <b>nuation)</b> ivening	0.00 0.00 0.00	Night	1.05 1.15	0.0 0.0 0.0	000 000 000 <i>C</i>	0.000 0.000 0.000
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levels (w VehicleType Leg Peak Autos:	.30 .75 .57 <i>vithou</i> Hour 60.1	-0.52 -17.76 -21.72 ut Topo and I Leq Day	barrie 58.2	-3.6 -3.6 -3.6 <b>r atten</b>	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0.00 0.00 0.00	Night 50.4	1.05 1.15	0.0 0.0 0.0 <i>Ldn</i> 59.0	000 000 000 <i>C</i>	0.000 0.000 0.000 NEL 59.6
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levels (w VehicleType Leq Peak	.30 .75 .57 <i>vithou</i> <i>Hour</i> 60.1 54.3	-0.52 -17.76 -21.72 ut Topo and I Leq Day	58.2	-3.6 -3.6 -3.6 <b>r atten</b>	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0.00 0.00 0.00	Night 50.4 44.9	-1.05 -1.15 -1.40	0.0 0.0 0.0 <i>Ldn</i> 59.0 53.4	000 000 000 000 000	0.000 0.000 0.000 NEL 59.6 53.6
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levels (w VehicleType Leg Peak Autos:	.30 .75 .57 <i>vithou</i> Hour 60.1	-0.52 -17.76 -21.72 ut Topo and I Leq Day	barrie 58.2	-3.6 -3.6 -3.6 <b>r atten</b>	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0.00 0.00 0.00	Night 50.4	-1.05 -1.15 -1.40	0.0 0.0 0.0 <i>Ldn</i> 59.0	000 000 000 000 000	0.000 0.000 0.000 NEL 59.6 53.6
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levels (w VehicleType Leg Peak Autos: Medium Trucks:	.30 .75 .57 <i>vithou</i> <i>Hour</i> 60.1 54.3	-0.52 -17.76 -21.72 ut Topo and I Leq Day	58.2	-3.6 -3.6 -3.6 <b>r atten</b>	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0.00 0.00 0.00	Night 50.4 44.9	-1.05 -1.15 -1.40	0.0 0.0 0.0 <i>Ldn</i> 59.0 53.4	000 000 000 000 C	0.000 0.000 0.000 NEL 59.6 53.6
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levets (w Vehicle Type Leg Peak Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	.30 .75 .57 <i>withou</i> 60.1 54.3 56.2 62.3	-0.52 -17.76 -21.72 ut Topo and I Leq Day	58.2 52.8 54.8 60.6	-3.6 -3.6 -3.6 <b>r atten</b> Leg E	7 7 7 <i>vening</i> 56.4 46.5 45.7 57.2	0.00 0.00 0.00 Leq	Night 50.4 44.9 47.0 52.8	-1.05 -1.15 -1.40	0.0 0.0 0.0 59.0 53.4 55.3 61.3	000 000 000 000 000 0 0 4 3 3	0.000 0.000 0.000 NEL 59.6 53.6 55.5
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levets (w Vehicle Type Leg Peak Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	.30 .75 .57 <i>withou</i> 60.1 54.3 56.2 62.3	-0.52 -17.76 -21.72 ut Topo and I Leq Day	58.2 52.8 54.8 60.6	-3.6 -3.6 -3.6 <b>r atten</b> Leq E	7 7 7 <i>ivening</i> 56.4 46.5 45.7 57.2 <i>dBA</i>	0.00 0.00 0.00 Leq 65	Night 50.4 44.9 47.0 52.8 dBA	-1.05 -1.15 -1.40	0.0 0.0 0.0 59.0 53.4 55.3 61.3 60 dBA	000 000 000 000 000 000 0 4 3 3 3 55	0.000 0.000 NEL 59.6 53.6 55.5 61.8 dBA
Autos: 64 Medium Trucks: 75 Heavy Trucks: 81 Unmitigated Noise Levels (v VehicleType Leq Peak Autos: Autos: Heavy Trucks:	.30 .75 .57 <i>withou</i> 60.1 54.3 56.2 62.3	-0.52 -17.76 -21.72 ut Topo and u Leq Day	58.2 52.8 54.8 60.6	-3.6 -3.6 -3.6 <b>r atten</b> Leq E	7 7 7 <i>vening</i> 56.4 46.5 45.7 57.2	0.00 0.00 0.00 Leq 65	Night 50.4 44.9 47.0 52.8	-1.05 -1.15 -1.40	0.0 0.0 0.0 59.0 53.4 55.3 61.3	000 000 000 000 1 1 3 3 55 55	0.000 0.000 0.000 NEL 59.6 53.6 55.5 61.8

Wednesday, August 14, 2019

	FHW	A-RD-77-108 HIG	HWAY	NOISE PI	REDICTIO	N MOD	EL			
Scenario: Road Name: Road Segment:		,			Project N Job Nur			N		
SITE SP	PECIFIC INF	PUT DATA			NO	ISE M	ODEL	INPUTS	5	
Highway Data				Site Con	ditions (H	lard = 1	0, Sof	t = 15)		
Average Daily Tr	affic (Adt):	7,290 vehicles				A	utos:	10		
Peak Hour Pe	ercentage:	10%		Me	dium Truc	ks (2 Ax	des):	10		
Peak Hou	ır Volume:	729 vehicles		He	avy Truck	s (3+ Ax	des):	10		
	cle Speed:	25 mph	ŀ	Vehicle I	Mix					
Near/Far Lane	Distance:	12 feet	ľ	Veh	icleType	D	ay I	Evening	Night	Daily
Site Data					Au	tos: 7	7.5%	12.9%	9.6%	97.42%
Barrie	er Height:	0.0 feet		M	edium Tru	cks: 8	4.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall	l, 1-Berm):	0.0		1	Heavy Tru	cks: 8	6.5%	2.7%	10.8%	0.74%
Centerline Dist.		66.0 feet		Noise So	ource Elev	ations	(in fee	et)		
Centerline Dist. to		76.0 feet	ľ		Autos:	0.00	)0			
Barrier Distance to		10.0 feet		Mediu	m Trucks:	2.29	97			
Observer Height (Ab	,	5.0 feet		Heav	y Trucks:	8.00	6 0	Grade Adj	ustment	: 0.0
	Elevation:	0.0 feet	ŀ	Long Eg	uivalent D	Victoria	(in fo	o.4)		
	Elevation: ad Grade:	0.0 feet	-	Lane Eq	Autos:	75.9		el)		
	ad Grade: Left View:	0.0% -90.0 degrees		Modiu	m Trucks:	75.8				
	Right View:	90.0 degrees			y Trucks:	75.82				
FHWA Noise Model	Calculations									
VehicleType	REMEL	Traffic Flow D	listance	Finite	Road	Fresne	I B	Barrier Atte	en Ber	m Atten
Autos:	58.73	-0.77	-1.8	38	0.00	-(	0.99	0.0	00	0.00
Medium Trucks:	70.80	-18.01	-1.8	38	0.00	- '	1.15	0.0	00	0.00
Heavy Trucks:	77.97	-21.97	-1.8	38	0.00	-	1.57	0.0	00	0.00
Unmitigated Noise L	evels (witho	ut Topo and barr	rier attei	nuation)						
	eq Peak Hour			vening	Leq Ni		L	Ldn		NEL
Autos:	56.1			52.4		46.4		55.0		55.
Medium Trucks:	50.9			43.0		41.5		50.0		50.
Heavy Trucks:	54.1			43.7		44.9		53.3		53.
Vehicle Noise:	59.0		8	53.4		49.5		58.0	)	58.
Centerline Distance	to Noise Cor	ntour (in feet)	70	-/0.4	05 -15			-10.4		104
		l dn		dBA 5	65 dE 15	5A		0 dBA 48		dBA 51
		Lan. CNFL		5 5	15			48 52		51 65
		UNEL.		J	10			JZ		00

F	HWA-RD-77-108	HIGHW	AY NO	ISE PREC	ICTION	MODEL			
Scenario: Existing	Without Project					ne: Parkvi			
Road Name: 41st St.				J	ob Numb	er: 12620			
Road Segment: e/o Hoop	er Av.								
SITE SPECIFIC	INPUT DATA		-				L INPUT	s	
Highway Data			Si	te Conditi	ons (Har				
Average Daily Traffic (Adt)	8,370 vehicles	3				Autos.			
Peak Hour Percentage	10%			Mediur	n Trucks	(2 Axles)	: 10		
Peak Hour Volume	837 vehicles	3		Heavy	Trucks (	3+ Axles)	: 10		
Vehicle Speed	25 mph		Ve	hicle Mix					
Near/Far Lane Distance	12 feet		-	Vehicle	Tvpe	Day	Evening	Night	Daily
Site Data					Autos	,		9.6%	
Barrier Height	0.0 feet			Mediu	m Truck	s: 84.8%	6 4.9%	10.3%	1.84
Barrier Type (0-Wall, 1-Berm)				Hea	vy Truck	s: 86.5%	6 2.7%	10.8%	0.74
Centerline Dist. to Barrier				oise Sourd	- 51		41		
Centerline Dist. to Observer	76.0 feet		NC				eet)		
Barrier Distance to Observer	10.0 feet				Autos:	0.000			
Observer Height (Above Pad)				Medium T		2.297	Out de Au		
Pad Elevation	0.0 feet			Heavy T	rucks:	8.006	Grade Ad	ijusimeni.	0.0
Road Elevation			La	ne Equiva	lent Dis	tance (in	feet)		
Road Grade					Autos:	75.928			
Left View	-90.0 degree	es		Medium T	rucks:	75.811			
Right View	90.0 degree	is.		Heavy T	rucks:	75.822			
FHWA Noise Model Calculation	ons								
VehicleType REMEL	Traffic Flow	Distan	ce	Finite Roa	ad F	resnel	Barrier At	ten Ber	m Atter
Autos: 58.	'3 -0.17		-1.88	0	.00	-0.99	0.	000	0.00
Medium Trucks: 70.8	-17.41		-1.88	C	.00	-1.15	0.	000	0.00
Heavy Trucks: 77.9	-21.37		-1.88	C	.00	-1.57	0.	000	0.00
Unmitigated Noise Levels (wi	thout Topo and	barrier a	ttenua	ation)					
VehicleType Leq Peak F	our Leq Day	Le	eq Eve	ning	Leq Nigh	nt	Ldn		VEL
		54.8		53.0		47.0	55.		56
		50.0		43.6		42.1	50.		50
Heavy Trucks:	54.7	53.3		44.3		45.5	53.	9	54
Vehicle Noise:	59.6	57.9		54.0		50.1	58.	6	59
Centerline Distance to Noise	Contour (in feet)	)							
			70 dB	A	65 dBA	1	60 dBA		dBA
		Ldn:	5 6		17		55	1	73
		NFL:			19		60		89

Wednesday, August 14, 2019

						_					
	Existing With	hout Project					Name: F				
Road Name: Road Segment:		ach Au				JOD IN	Imber: 1	2620			
Road Seyment.	W/O LONG BE	ach Av.									
	PECIFIC IN	PUT DATA							L INPUTS	;	
Highway Data				s	ite Con	ditions (	Hard =	10, S	oft = 15)		
Average Daily Tra	affic (Adt):	8,660 vehicles						lutos.			
Peak Hour Pe		10%				dium Tru					
Peak Hou	ır Volume:	866 vehicles			Hea	avy Truc	ks (3+ A	xles).	10		
Vehic	cle Speed:	25 mph		v	ehicle N	Nix					
Near/Far Lane	Distance:	12 feet		F		cleType		Dav	Evening	Night	Daily
Site Data							utos:	77.5%	•	9.6%	
Parrie	er Height:	0.0 feet			Ме	edium Tr	ucks:	34.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall		0.0			H	leavy Tr	ucks:	36.5%	2.7%	10.8%	0.74%
Centerline Dist.	. ,	66.0 feet									
Centerline Dist. to		76.0 feet		N	loise So				eet)		
Barrier Distance to		10.0 feet				Autos					
Observer Height (Ab		5.0 feet				n Trucks					
<b>U</b> 1	Flevation:	0.0 feet			Heav	y Trucks	: 8.0	06	Grade Adji	ustment.	0.0
	Elevation:	0.0 feet		L	ane Equ	iivalent	Distanc	e (in	feet)		
	ad Grade:	0.0%				Autos	: 75.9	28	,		
	Left View:	-90.0 degrees			Mediur	n Trucks	: 75.8	11			
R	Right View:	90.0 degrees			Heav	y Trucks	: 75.8	22			
FHWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Distand	се	Finite	Road	Fresne	e/	Barrier Atte	n Ber	m Atten
Autos:	58.73	-0.02	-	1.88		0.00		0.99	0.0	00	0.00
Medium Trucks:	70.80	-17.26	-	1.88		0.00		1.15	0.0	00	0.00
Heavy Trucks:	77.97	-21.22	-	1.88		0.00		1.57	0.0	00	0.000
Unmitigated Noise L											
	eq Peak Houi			q Eve	ening	Leq I			Ldn	Cl	VEL
Autos:	56.				53.2		47.1		55.7		56.
Medium Trucks:	51.		).1		43.8		42.2		50.7		50.
Heavy Trucks:	54.		8.5		44.4		45.7		54.0		54.2
Vehicle Noise:	59.		8.0		54.1		50.2		58.7		59.
Centerline Distance	to Noise Co	ntour (in feet)	-	70 di	RA	65 0	IRΔ		SO dBA	55	dBA
			in:	6	D/1	1			57 57		ивд 79

	FHW	A-RD-77-108 HIG	HWAY I	NOISE PR	EDICTIO	N MODE	L		
Road Name	o: Existing With e: 41st St. ht: e/o Long Be	,			Project Na Job Nur				
SITE S	SPECIFIC INI	PUT DATA					DEL INPUT	S	
Highway Data				Site Cond	litions (H	ard = 10	, Soft = 15)		
Average Daily T Peak Hour I	Percentage:	7,360 vehicles 10%			lium Truci	ks (2 Axl	,		
	our Volume:	736 vehicles		Hea	vy Trucks	s (3+ Axl	es): 10		
Ver Near/Far Lar	nicle Speed: ne Distance:	25 mph 12 feet		Vehicle M	lix cleType	Da	evening	Night	Daily
Site Data				Venic			5% 12.9%	9.6%	
				Ma	dium Truc		.8% 4.9%	9.0%	
Barrier Type (0-Wa	rier Height: all. 1-Berm):	0.0 feet 0.0			leavy Truc		.5% 2.7%		
Centerline Dis		66.0 feet	ŀ	Noise So	uree Elev	ationa (	in fact)		
Centerline Dist. t	o Observer:	76.0 feet	ł	NOISE 30	Autos:		,		
Barrier Distance t	o Observer:	10.0 feet				0.00			
Observer Height (/	Above Pad):	5.0 feet			n Trucks:	2.29			
Pa	d Elevation:	0.0 feet		Heavy	/ Trucks:	8.006	6 Grade Ad	ijustment	: 0.0
Roa	d Elevation:	0.0 feet	ľ	Lane Equ	ivalent D	istance	(in feet)		
F	Road Grade:	0.0%			Autos:	75.92	8		
	Left View:	-90.0 degrees		Mediun	1 Trucks:	75.81	1		
	Right View:	90.0 degrees		Heavy	/ Trucks:	75.82	2		
FHWA Noise Mode	l Calculations		I						
VehicleType	REMEL	Traffic Flow Di	istance	Finite I	Road	Fresnel	Barrier At	ten Ber	m Atten
Autos:	58.73	-0.73	-1.8	88	0.00	-0.	.99 0.	000	0.000
Medium Trucks:	70.80	-17.97	-1.8		0.00			000	0.000
Heavy Trucks:	77.97	-21.92	-1.8	-	0.00	-1.	.57 0.	000	0.000
Unmitigated Noise			ier atter	nuation)				_	
	Leq Peak Hour		Leq E	vening	Leq Ni	·	Ldn		NEL
Autos:	56.			52.5		46.4	55.		55.6
Medium Trucks:	51.			43.1		41.5	50.		50.2
Heavy Trucks:	54.	2 52.8		43.7		45.0	53.	3	53.4
Vehicle Noise:	59.	0 57.3		53.4		49.5	58.	0	58.4
Centerline Distance	e to Noise Co	ntour (in feet)				_			_
				dBA	65 dB	A	60 dBA	55	dBA
		Ldn:		5	15		48		152
		CNEL:		5	17		53	1	66

	FHWA-F	RD-77-108 HIG	HWAY I	NOISE PR	EDICTIO	N MODEL		
Scenario: Exi Road Name: Ce Road Segment: n/o	ntral Av.	oject				ame: Parkv aber: 12620		
SITE SPEC	IFIC INPU	Γ DATA			NO	SE MOD	EL INPUTS	5
Highway Data				Site Cond	ditions (Ha	ard = 10, S	oft = 15)	
Average Daily Traffic Peak Hour Perce Peak Hour Ve	ntage: 1	30 vehicles 10% 13 vehicles				Autos (2 Axles, (3+ Axles,	: 10	
Vehicle S	Speed: 3	35 mph	ŀ	Vehicle M	liv			
Near/Far Lane Dis	tance: 5	50 feet	-		cleType	Dav	Evening	Night Daily
Site Data				10/110	Aut		0	9.6% 97.42
Barrier H	loight:	0.0 feet		Me	dium Truc	ks: 84.8	% 4.9%	10.3% 1.849
Barrier Type (0-Wall, 1-	Berm): (	0.0		Н	leavy Truc	ks: 86.5	% 2.7%	10.8% 0.74
Centerline Dist. to E		0.0 feet		Noise So	urce Elev	ations (in	feet)	
Centerline Dist. to Obs		0.0 feet			Autos:	0.000		
Barrier Distance to Obs		0.0 feet		Mediun	n Trucks:	2.297		
Observer Height (Above Pad Fle	,	5.0 feet 0.0 feet		Heavy	/ Trucks:	8.006	Grade Adj	ustment: 0.0
Road Fle		0.0 feet	-	Lane Equ	ivalent Di	istance (in	feet)	
		0.0%	-	Lano Lqu	Autos:	86.603	1000)	
		0.0 /degrees		Mediun	1 Trucks:	86.500		
		0.0 degrees			/ Trucks:	86.510		
FHWA Noise Model Cald	culations							
VehicleType RE	MEL Tra	ffic Flow Di	istance	Finite F	Road	Fresnel	Barrier Atte	en Berm Atter
Autos:	64.30	2.03	-2.4	-	0.00	-1.02		
Medium Trucks:	75.75	-15.21	-2.4	-	0.00	-1.15		
Heavy Trucks:	81.57	-19.17	-2.4	5	0.00	-1.50	0.0	00 0.00
Unmitigated Noise Leve		Topo and barr	ier atter	nuation)				
	Peak Hour	Leq Day	Leq E	vening	Leq Nig		Ldn	CNEL
Autos:	63.9	62.0		60.2		54.2	62.8	
Medium Trucks:	58.1	56.6		50.2		48.7	57.1	÷.
Heavy Trucks: Vehicle Noise:	59.9 66.1	58.5 64.4		49.5		50.7	59.1 65.1	
				60.9		56.6	05.1	65
Centerline Distance to I	voise Contoi	ur (in teet)	70	-10.4	05 -10		00 -10 4	55 JDA
		l da		dBA 19	65 dB. 92	А	60 dBA 290	55 dBA 917
		Ldn: CNFL:		19 12	92		290 320	
		GIVEL:	3	2	101		320	1,013

	FHV	/A-RD-77-108 F	IIGHV	AY NO	DISE PR	EDICTIO	N MO	DEL			
	Existing Wit Central Av. s/o 41st St.	h Project				Project N Job Nui			ew		
SITE S	PECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				S	te Cond	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt): 1	8,870 vehicles						Autos:	10		
Peak Hour P	ercentage:	10%			Med	dium Truc	:ks (2 /	Axles):	10		
Peak Ho	ur Volume:	1,887 vehicles			Hea	avy Truck	:s (3+ /	Axles):	10		
Vehi	cle Speed:	35 mph		V	ehicle N	lix					
Near/Far Lane	e Distance:	50 feet		-		cleTvpe		Dav	Evening	Night	Daily
Site Data					10/110			77.5%			97.42
	ier Height:	0.0 feet			Me	dium Tru		84.8%		10.3%	
Barrier Type (0-Wa	•	0.0 teet 0.0				leavy Tru		86.5%	2.7%	10.8%	
Centerline Dist.		80.0 feet				,					
Centerline Dist. to		90.0 feet		N	oise So	urce Elev			eet)		
Barrier Distance to		10.0 feet				Autos:		000			
Observer Height (A		5.0 feet				n Trucks:		297			
	Elevation:	0.0 feet			Heavy	y Trucks:	8.	006	Grade Ad	justment	0.0
Road	Elevation:	0.0 feet		La	ane Equ	ivalent E	Distan	ce (in i	feet)		
R	oad Grade:	0.0%				Autos:	86.	603			
	Left View:	-90.0 degrees			Mediun	n Trucks:	86.	500			
1	Right View:	90.0 degrees			Heavy	Y Trucks:	86.	510			
FHWA Noise Model	Calculations	;									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite I	Road	Fresr	nel	Barrier Att	en Ber	m Atten
Autos:	64.30	1.90		-2.45		0.00		-1.02	0.0	000	0.00
Medium Trucks:	75.75	-15.34		-2.45		0.00		-1.15	0.0	000	0.00
Heavy Trucks:	81.57	-19.30		-2.45		0.00		-1.50	0.0	000	0.00
Unmitigated Noise											
	eq Peak Hou			eq Eve	· ·	Leq N			Ldn		VEL
Autos:	63.		1.8		60.1		54.0		62.6		63
Medium Trucks:	58.		6.5		50.1		48.5		57.0		57
Heavy Trucks:	59.		3.4		49.4		50.6		59.0	-	59
Vehicle Noise:	66		4.3		60.8		56.4	1	65.0	)	65
Centerline Distance	to Noise Co	ntour (in feet)		70 -1	24	05 -1	24				-/D 4
		,	dn:	70 dE 28	м	65 dE 89		6	0 dBA 282		dBA 91
		CN		28		89 98			282 311		91 84
		CN		31					011	9	04

	FH	WA-RD-77-108	B HIGH	IWAY I	NOISE PI	REDICTI	ION MO	DDEL			
Road Nar	rio: Existing W ne: Central Av ent: s/o Vernor						Name: umber:	Parkvie 12620	9W		
	SPECIFIC I	NPUT DATA			<u></u>					s	
Highway Data					Site Cor	ditions	(Hard =				
• •	. ,	17,880 vehicle	s					Autos:			
	r Percentage:	10%				edium Tru eavy Truc					
	Hour Volume:	1,788 vehicle	s		He	avy rruc	CKS (3+	Axies):	10		
	ehicle Speed:	35 mph			Vehicle	Mix					
Near/Far La	ane Distance:	50 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						ŀ	Autos:	77.5%	12.9%	9.6%	97.42%
Ba	arrier Height:	0.0 feet			М	edium Ti	rucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-V		0.0				Heavy Ti	rucks:	86.5%	2.7%	10.8%	0.74%
Centerline D	ist. to Barrier:	80.0 feet		ł	Noise So	ourco El	ovatio	ac (in fr	not)		
Centerline Dist	to Observer:	90.0 feet		ł	110136 30	Auto:		000	el)		
Barrier Distance	to Observer:	10.0 feet			Modiu	m Truck		297			
Observer Height	(Above Pad):	5.0 feet				/y Truck		.006	Grade Ad	liustment	0.0
F	Pad Elevation:	0.0 feet								Juotimorit	0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Distar	nce (in i	feet)		
	Road Grade:	0.0%				Auto	s: 86	603			
	Left View:	-90.0 degre	es			m Truck		.500			
	Right View:	90.0 degre	es		Hear	/y Truck	s: 86	5.510			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow		tance		Road	Fres		Barrier Att		m Atten
Autos.				-2.4	-	0.00		-1.02		000	0.00
Medium Trucks				-2.4	-	0.00		-1.15		000	0.00
Heavy Trucks				-2.4	-	0.00		-1.50	0.	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Ho			Leq E	vening	Leq	Night		Ldn		VEL
Autos.		3.5	61.6		59.8		53		62.		63.
Medium Trucks.	-	7.7	56.2		49.9		48	-	56.	-	57.
Heavy Trucks. Vehicle Noise		9.6 5.7	58.2 64.0		49.1		50. 56		58. 64.		58. 65
Centerline Distan					00.0		00	-	04.		00.
Genternite Distan	00 10 110/36 0	ontour (III lee	9	70	dBA	65	dBA	6	0 dBA	55	dBA
			Ldn:	2	27	8	4		267	8	44
		С	NEL:	2	29	9	3		295	9	32

	FHW	A-RD-77-108	HIGHV	VAY N	IOISE PF	REDICT		DDEL			
Road Nan	rio: Existing With ne: Hooper Av. nt: n/o 33rd St.	Project					t Name: Number:		ew		
	SPECIFIC INP	UT DATA			o:- 0					s	
Highway Data				-	Site Con	ditions	(Hard :		,		
,	Traffic (Adt): 15							Autos:			
	Percentage:	10%					rucks (2				
		1,525 vehicles			He	avy Iru	icks (3+	Axles):	10		
	hicle Speed:	25 mph			Vehicle I	lix					
Near/Far La	ne Distance:	12 feet			Vehi	cleType	e	Day	Evening	Night	Daily
Site Data							Autos:	77.5%	12.9%	9.69	6 97.42%
Ba	rrier Height:	0.0 feet			Me	dium 1	rucks:	84.8%	4.9%	10.39	6 1.84%
Barrier Type (0-N		0.0			ŀ	leavy 1	rucks:	86.5%	2.7%	10.89	6 0.749
Centerline Di	ist. to Barrier:	66.0 feet			Noise So	urce E	levatio	ns (in fe	et)		
Centerline Dist.	to Observer:	76.0 feet		F		Auto		.000	,		
Barrier Distance	to Observer:	10.0 feet			Mediur			297			
Observer Height	(Above Pad):	5.0 feet				y Truck		.006	Grade Ac	liustmer	ot: 0.0
P	ad Elevation:	0.0 feet				·				juounoi	. 0.0
Ro	ad Elevation:	0.0 feet		1	Lane Equ	iivalen	t Distaı	nce (in i	feet)		
	Road Grade:	0.0%				Auto	os: 75	5.928			
	Left View:	-90.0 degree	s		Mediur	n Truck	(s: 75	5.811			
	Right View:	90.0 degree	s		Heav	y Truck	(S: 75	5.822			
FHWA Noise Mod											
VehicleType		Traffic Flow	Dista		Finite		Fres		Barrier At		erm Atten
Autos:		2.43		-1.8	-	0.00		-0.99		000	0.00
Medium Trucks:		-14.80		-1.8	-	0.00		-1.15		000	0.00
Heavy Trucks:	77.97	-18.76		-1.8	8	0.00		-1.57	0.	000	0.00
Unmitigated Nois					,	,					
VehicleType	Leq Peak Hour	Leq Day		Leq E	vening	Leq	Night		Ldn		ONEL
Autos: Medium Trucks:	59.3 54.1		57.4 52.6		55.6 46.2		49 44	-	58. 53.	-	58.
			5.9		46.9		44		53. 56		53.
Heavy Trucks: Vehicle Noise:			30.5		46.9		48		50. 61.	-	56. 61.
Centerline Distan	ce to Noise Con	ntour (in feet)					-		-		-
					dBA		dBA	e	60 dBA	5	5 dBA
			dn:		0		32		100		315
		CN	IEL:	1	1	:	34		109		345

#### Wednesday, August 14, 2019

Wednesday, August 14, 2019

	FHWA	-RD-77-108 HIG	HWAY I	NOISE PR	EDICTION	N MODEL			
Scenario: Road Name: Road Segment:		Project				ame: Park aber: 1262			
SITE SF	PECIFIC INPL	JT DATA			NO	ISE MOD	EL INPUT	s	
Highway Data				Site Cond	litions (Ha	ard = 10, S	Soft = 15)		
Average Daily Tr Peak Hour Pe Peak Hou	ercentage:	600 vehicles 10% 660 vehicles				Autos s (2 Axles (3+ Axles	): 10		
Vehi	cle Speed:	25 mph	ł	Vehicle M	liv.				
Near/Far Lane	Distance:	12 feet	-		leType	Dav	Evening	Night	Daily
Site Data				vonic	Aut		0	9.6%	
		0.0 feet		Me	dium Truc			10.3%	1.84%
Barrier Type (0-Wal		0.0		Н	leavy Truc	ks: 86.5	% 2.7%	10.8%	0.74%
Centerline Dist.		66.0 feet	ŀ	Noise So	urce Eleva	ations (in	feet)		
Centerline Dist. to		76.0 feet	ŀ		Autos:	0.000			
Barrier Distance to		10.0 feet		Mediun	Trucks:	2 297			
Observer Height (Al Pad	bove Pad): Flevation:	5.0 feet 0.0 feet		Heavy	/ Trucks:	8.006	Grade Ad	justment	0.0
Road	Elevation:	0.0 feet	ľ	Lane Equ	ivalent Di	istance (ir	feet)		
Ro	ad Grade:	0.0%	ľ		Autos:	75.928			
	Left View: -	90.0 degrees		Mediun	n Trucks:	75.811			
F		90.0 degrees		Heavy	/ Trucks:	75.822			
FHWA Noise Model	Calculations								
VehicleType	REMEL TI	raffic Flow Di	istance	Finite F	Road	Fresnel	Barrier Att	en Ber	m Atten
Autos:	58.73	2.80	-1.8	8	0.00	-0.99	0.0	000	0.00
Medium Trucks:	70.80	-14.44	-1.8	8	0.00	-1.15	5 0.0	000	0.000
Heavy Trucks:	77.97	-18.39	-1.8	18	0.00	-1.57	° 0.0	000	0.00
Unmitigated Noise L	evels (without	Topo and barr	ier atter	nuation)					
	eq Peak Hour	Leq Day	Leq E	vening	Leq Nig		Ldn		NEL
Autos:	59.7	57.8		56.0		49.9	58.6		59.3
Medium Trucks:	54.5	53.0		46.6		45.1	53.5	-	53.8
Heavy Trucks:	57.7	56.3		47.2		48.5	56.9	-	57.0
Vehicle Noise:	62.5	60.9		57.0		53.0	61.5	5	61.9
Centerline Distance	to Noise Cont	our (in feet)							
				dBA	65 dB/	A	60 dBA		dBA
		Ldn:		1	34		108	-	43
		CNEL:	1	12	38		119	3	75

	FHW	/A-RD-77-108 I	HIGHW	AY NC	DISE PRI	EDICTIC	N MO	DEL			
Scenario: Road Name: Road Segment:		,			ŀ	Project N Job Nu			ew		
·										_	
SITE SP Highway Data	ECIFIC IN	PUT DATA		5	te Cond				L INPUT	5	
				31	le conu	100115 (1					
Average Daily Tra	, ,							Autos:			
Peak Hour Pe		10%				ium Truc					
		1,572 vehicles			Hea	vy Truck	:s (3+ A	(xles	10		
	le Speed:	25 mph		Ve	ehicle M	ix					
Near/Far Lane	Distance:	12 feet			Vehic	leType		Day	Evening	Night	Daily
Site Data						AL	itos:	77.5%	12.9%	9.6%	97.42
Barrie	er Height:	0.0 feet			Med	dium Tru	cks:	84.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall		0.0			He	avy Tru	cks:	86.5%	2.7%	10.8%	0.74
Centerline Dist.		66.0 feet				-					
Centerline Dist. to		76.0 feet		N	oise Sou				eet)		
Barrier Distance to		10.0 feet				Autos:		000			
Observer Height (Ab		5.0 feet			Medium			297			
	Elevation:	0.0 feet			Heavy	Trucks:	8.0	006	Grade Ad	ljustment	0.0
Road	Elevation:	0.0 feet		Lá	ane Equi	ivalent L	Distand	ce (in	feet)		
	ad Grade:	0.0%				Autos:					
	Left View:	-90.0 degrees			Medium	Trucks:	75.	B11			
R	ight View:	90.0 degrees			Heavy	Trucks:	75.	822			
FHWA Noise Model (	Calculations										
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite R	Road	Fresn	el	Barrier At	ten Ber	m Atter
Autos:	58.73	2.57		-1.88		0.00		-0.99	0.	000	0.00
Medium Trucks:	70.80	-14.67		-1.88		0.00		-1.15	0.	000	0.00
Heavy Trucks:	77.97	-18.63		-1.88		0.00		-1.57	0.	000	0.00
Unmitigated Noise L										1	
	eq Peak Hou			eq Eve		Leq N			Ldn		VEL
Autos:	59.		7.5		55.8		49.7		58.	-	58
Medium Trucks:	54.		2.7		46.4		44.8		53.		53
Heavy Trucks:	57.		6.0		47.0		48.3		56.		56
Vehicle Noise:	62.		0.6		56.7		52.8	3	61.	3	61
Centerline Distance	to Noise Co	ntour (in feet)		70 /		CE -!!	24		C dBA	57	dD A
		,		70 dE	5A	65 dl			0 dBA		dBA
			dn: FI :	10 11		32 36			103 112		25 55

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: Existing With Project Road Name: Hooper Av. Project Name: Parkview Job Number: 12620 Road Segment: s/o Vernon Av SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Autos: 10 Average Daily Traffic (Adt): 14,320 vehicles Peak Hour Percentage: 10% Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): Peak Hour Volume: 1,432 vehicles 10 Vehicle Speed: 25 mph Vehicle Mix pe Day Evening Night Daily Autos: 77.5% 12.9% 9.6% 97.42% Near/Far Lane Distance: 12 feet VehicleType 9.6% 97.42% Site Data Medium Trucks: 84.8% 4.9% 10.3% 1.84% Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 0.74% Centerline Dist. to Barrier: Centerline Dist. to Observer: 66.0 feet Noise Source Elevations (in feet) 76.0 feet 0.000 Autos: Barrier Distance to Observer: Observer Height (Above Pad): 10.0 feet Medium Trucks: 2.297 5.0 feet Heavy Trucks: 8.006 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: Medium Trucks: Road Grade: 0.0% 75.928 75.811 Left View: -90.0 degrees Right View: 90.0 degrees Heavy Trucks: 75.822 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel -0.99 Barrier Atten Berm Atten Autos 58.73 2.16 -1.88 0.00 0.000 Medium Trucks: 70.80 -15.08 0.00 -1.15 0.000 0.000 -1.88 Heavy Trucks: 77.97 -19.03 -1.88 0.00 -1.57 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Night 49.3 
 VehicleType
 Leq Peak Hour
 Leq Day
 Leq Evening

 Autos:
 59.0
 57.1
 55.3
 Ldn CNEL 57.9 58.5 Medium Trucks: 53.8 52.3 46.0 44.4 52.9 53.1 46.6 47.9 Heavy Trucks: 57.1 55.6 56.2 56.3 Vehicle Noise: 61.9 56.3 52.4 61.3 60.2 60.9 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 9 30 32 94 296 10 102 324 CNEL:

	FH\	VA-RD-77-108 H	GHWAY	NOISE PR	EDICTIC				
Road Nam	io: Existing Wi ie: Compton A nt: s/o Adams	v.				Vame: Parkv Imber: 1262			
SITE	SPECIFIC IN	IPUT DATA			N	DISE MOD	EL INPUT	s	
Highway Data				Site Con	ditions (l	Hard = 10, S	Soft = 15)		
Average Daily	Traffic (Adt):	6,750 vehicles				Auto	s: 10		
Peak Hour	Percentage:	10%		Mee	dium True	cks (2 Axles	): 10		
Peak H	lour Volume:	675 vehicles		Hea	avy Truck	ks (3+ Axles	): 10		
Ve	hicle Speed:	25 mph		Vehicle N	<i>Ni</i> v				
Near/Far La	ne Distance:	12 feet			cleType	Dav	Evening	Night	Daily
Site Data						utos: 77.5	•	9.6%	
Bai	rrier Height:	0.0 feet		Me	dium Tru	icks: 84.8	% 4.9%	10.3%	1.84%
Barrier Type (0-W		0.0		E	leavy Tru	icks: 86.5	% 2.7%	10.8%	0.74%
Centerline Dis	. ,	66.0 feet		Noiso So	urco Elo	vations (in	foot)		
Centerline Dist.	to Observer:	76.0 feet		140136 30	Autos		ieel)		
Barrier Distance	to Observer:	10.0 feet		Modiur	n Trucks.				
Observer Height (	Above Pad):	5.0 feet			v Trucks:		Grade Ac	liustment	.00
Pa	ad Elevation:	0.0 feet						juounone	. 0.0
Roa	ad Elevation:	0.0 feet		Lane Equ		Distance (ir	i feet)		
	Road Grade:	0.0%			Autos:				
	Left View:	-90.0 degrees			n Trucks.				
	Right View:	90.0 degrees		Heav	y Trucks:	75.822			
FHWA Noise Mode	el Calculation	s							
VehicleType	REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier At	ten Ber	m Atten
Autos:	58.73	-1.11	-1.	88	0.00	-0.99	9 0.	000	0.000
Medium Trucks:	70.80	-18.34	-1.		0.00	-1.15		000	0.000
Heavy Trucks:	77.97	-22.30	-1.	88	0.00	-1.57	<b>0</b> .	000	0.000
Unmitigated Noise			rrier atte	nuation)					
	Leq Peak Hou	1 1	,	Evening	Leq N	0	Ldn		VEL
Autos:	55			52.1		46.0	54.		55.3
Medium Trucks:	50			42.7		41.2	49.		49.9
Heavy Trucks:	53			43.3		44.6	52.		53.1
Vehicle Noise:	58	.6 57	.0	53.0		49.1	57.	6	58.0
Centerline Distance	ce to Noise Co	ontour (in feet)							
				) dBA	65 d		60 dBA		dBA
		Ld		4	14		44		39
		CNE	L:	5	15	5	48	1	53

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Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Height:         0.0         Centetine Dist. to Barrier:         66.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Dist. to Observer:         76.0 feet         Noise Source Elevations (in feet)         Noise Model Calculations         Noise Model Calculations         Noise Model Calculations         Noise Model Calculations         Medium Trucks:         75.811         Heavy Trucks:         75.82           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten         Medium Trucks:         75.82           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berrier Atten         Medium Trucks:         75.82           Ummitgate Moise Levels (without Topo and barrier attenuation)         Ummitgate Moise Levels (without Topo and barrier a		FHW	/A-RD-77-108 HIG	GHWAY		EDICTION					
Highway Data         Site Conditions (Hard = 10, Soft = 15)           Average Daily Traffic (Adt):         8,070 vehicles         Autos::<10           Peak Hour Procendage:         10%         Medium Trucks (2 Akes):         10           Peak Hour Procendage:         10%         Medium Trucks (2 Akes):         10           Vehicle Speed:         25 mph         Medium Trucks (2 Akes):         10           Near/Far Lane Distance:         12 feet         Vehicle Type         Day         Evening         Night         Daily           Site Data         Earrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Type (0-Wail, 1-Berm):         0.0         feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Centerline Dist. to Observer:         76.0 feet         Moise Source Elevations (in feet)         Autos:         0.000           Road Grade:         0.0%         Left View:         -90.0 degrees         Medium Trucks:         75.811         Heavy Trucks:         75.82           FHWA Noise Model Calculations         Vehicle Type         REMEL         Traffic Flow         Distance         Finite Road         Freshel         Barrier Atten         Bern Atter	Road Nam	e: Compton Av									
Average Daily Traffic (Adt):         8,070 vehicles         Autos:         10           Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         10           Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         10           Vehicle Speed:         25 mph         Medium Trucks (2 Axles):         10           Vehicle Speed:         25 mph         Vehicle Type         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Autos:         77.5%         10.3%         1.84           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Dserver:         76.0 feet         Autos:         0.000           Barrier Jobserver         76.0 feet         Autos:         0.000         Medium Trucks:         2.297           Observer Height (Above Pad):         5.0 feet         Autos:         75.981         Heavy Trucks:         8.000         Grade Adjustment:         0.0           Road Grade:         0.0%         Left Wive:         90.0 degrees         Medium Trucks:         75.821           Heavy Trucks:         58.73         -0.33         -1.88         0.00		SPECIFIC IN	PUT DATA						5		
Peak Hour Percentage:         10%         Medium Trucks (2 Axles):         10           Peak Hour Volume:         807 vehicles         Heavy Trucks (3 + Axles):         10           Vehicle Speed:         25 mph         Vehicle Mix         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.44           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.44           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.74           Centerline Dist. to Barrier:         66.0 feet         Moise Source Elevations:         0.00         0.74           Observer:         10.0 feet         Medium Trucks:         2.297         Heavy Trucks:         8.006         Grade Adjustment: 0.0           Road Elevation:         0.0 feet         Medium Trucks:         75.928         Medium Trucks:         75.928           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresn	Highway Data				Site Con	ditions (Ha	ard = 10, S	oft = 15)			
Peak Hour Volume:         807 vehicles           Vehicle Speed:         25 mph           Near/Far Lane Distance:         12 feet         Vehicle Type         Day         Evening         Night         Daily           Site Data         Autos:         77.5%         12.9%         9.8%         97.42           Barrier Height:         0.0 feet         Heavy Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Dist. to Observer:         76.0 feet         Heavy Trucks:         86.5%         2.7%         10.8%         0.74           Observer Height (Abov Pad):         5.0 feet         Heavy Trucks:         8.000         Grade Adjustment:         0.0           Road Grade:         0.0%         Lane Equivalent Distance (in feet)         Autos:         75.811           Road Grade:         0.0%         Late Size         Medium Trucks:         75.811           Heavy Trucks:         75.812         Heavy Trucks:         75.82         Heavy Trucks:         75.82           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berner Atten           VehicleType         REMEL         Traffic Flow         Distance </td <td>• •</td> <td>. ,</td> <td>- 1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	• •	. ,	- 1								
Vehicle Speed:         25 mph           Vehicle Mix           Near/Far Lane Distance:         12 feet           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.44           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Diserver:         10.0         Medium Trucks:         84.8%         4.9%         0.3%         0.74           Barrier Type (0-Wall, 1-Berm):         0.0         Centerline Dist. to Diserver:         10.0 feet         Moles Source Elevations (in feet)           Barrier Distance to Observer:         10.0 feet         Autos:         2.297         Heavy Trucks:         8.000         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Autos:         75.828         Medium Trucks:         75.828           Right View:         -90.0 degrees         Iter any Trucks:         75.811         Heavy Trucks:         75.822           FHWA Noise Model Calculations           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fersnel         Barrier Atten         Berm Atten											
Near/Far Lane Distance:         12 fet         Vehicle Mix         Vehicle Mix         Vehicle Mix         Vehicle Mix         Night         Daily         Vehicle Mix           Site Data         Autos:         77.5%         12.9%         9.6%         97.42           Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.44           Barrier Type (V-Wall, 1-Berm):         0.0         Centerline Dist. to Barrier:         66.0 feet         Medium Trucks:         86.5%         2.7%         10.3%         0.74           Centerline Dist. to Dserver:         76.0 feet         Autos:         0.000         Medium Trucks:         82.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Medium Trucks:         75.928         Medium Trucks:         75.928           EHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Metru           Autos:         57.91         -21.52         -1.88         0.00         -1.57         0.000         0.00           Medium Trucks:         7					He	avy Trucks	(3+ Axles).	10			
Vehicle i ype         Let y         Vehicle i ype         Super i ype         Vehicle i ype <th colspan<="" td=""><td></td><td></td><td></td><td></td><td>Vehicle N</td><td>lix</td><td></td><td></td><td></td><td></td></th>	<td></td> <td></td> <td></td> <td></td> <td>Vehicle N</td> <td>lix</td> <td></td> <td></td> <td></td> <td></td>					Vehicle N	lix				
Barrier Height:         0.0 feet         Medium Trucks:         84.8%         4.9%         10.3%         1.84           Barrier Type (0-Wall, 1-Berm):         0.0         10.4%         Heavy Trucks:         86.5%         2.7%         10.8%         0.74           Centerline Dist. to Dserver:         16.0 feet         Noise Source Elevations (in feet)         Noise Source Adjustment: 0.0         Medium Trucks:         2.297         Heavy Trucks:         7.5.81         Heavy Trucks:         75.811         Heavy Trucks:         75.811         Heavy Trucks:         75.811         Heavy Trucks:         75.82         Medium Trucks:         75.813         0.00         -0.00         0.00         0.00           Medium Trucks:         70.80         -17.57         -1.88         0.00         -1.	Near/Far Lar	ne Distance:	12 feet		Vehi	cleType	Day	Evening	Night	Daily	
Barrier Type (D-Wall, 1-Berrin:         0.0           Heavy Trucks:         86.5%         2.7%         10.8%         0.7%           Centerline Dist. to Diserver:         60.0         Moise Source Elevations (in feet)           Centerline Dist. to Diserver:         10.0 feet         Autos::         0.000           Pad Elevation:         0.0 feet         Autos::         2.297           Meany Trucks:         8.000         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Autos::         75.928           Medium Trucks:         75.828           Medium Trucks:         75.821           Meany Trucks: <td>Site Data</td> <td></td> <td></td> <td></td> <td></td> <td>Auto</td> <td>os: 77.5%</td> <td>6 12.9%</td> <td>9.6%</td> <td>97.42%</td>	Site Data					Auto	os: 77.5%	6 12.9%	9.6%	97.42%	
Barrier Type (lowaii, robin), Centerline Dist. to Barrier: 66.0 feet         Noise Source Elevations (in feet)           Centerline Dist. to Diserver:         76.0 feet           Barrier Distance to Observer:         10.0 feet           Barrier Distance to Observer:         10.0 feet           Pad Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Grade:         0.0%           Left View:         -90.0 degrees           Right View:         90.0 degrees           PHWA Noise Model Calculations         Distance           VehicleType         REMEL           Autos:         58.73           -0.33         -1.88           0.00         -1.15           Medium Trucks:         76.99           VehicleType         Leg Hour           Leaves:         58.73           -0.33         -1.88           0.00         -1.57           VehicleType         Leg Peak Hour           Leq Qay         Leq Evening           VehicleType         Leg Qay           Leq Vehicle Type         Leg Abu           VehicleType         Leg Peak Hour           Leq Qay         Leq Evening	Bar	rier Height:	0.0 feet							1.849	
Koise Source Elevations (in feet)           Barrier Distance to Observer:         10.0 feet           Barrier Distance to Observer:         10.0 feet           Observer Height (Abov Pad):         5.0 feet           Pad Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Calculations:         0.0 feet           Road Calculations:         0.0 feet           Road Calculations:         0.0 degrees           Right View:         -90.0 degrees           Right View:         -90.0 degrees           FHWA Noise Model Calculations:         VehicleType           VehicleType         REMEL           Autos:         76.0.3           -17.57         -1.88         0.00           Medium Trucks:         77.9           -21.52         -1.88         0.00           Medium Trucks:         76.3           -17.57         -1.88         0.00           Medium Trucks:         76.5           S4.6         52.9           Autos:         56.5           S4.6         52.9           Autos:         56.5           S4.6         52.9           Autos:         56.5           S5.4	Barrier Type (0-W	all, 1-Berm):	0.0		F	leavy Truc	ks: 86.5%	6 2.7%	10.8%	0.749	
Centerline Dist. to Observer:         T6.0 feet         Autos:         0.000           Barrier Distance to Observer:         10.0 feet         Autos:         2.297           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         2.297           Pad Elevation:         0.0 feet         Heavy Trucks:         2.297           Road Elevation:         0.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Heavy Trucks:         75.928         Medium Trucks:         75.928           FHWA Noise Model Calculations         90.0 degrees         Heavy Trucks:         75.822         Medium Trucks:         75.822           FHWA Noise Model Calculations         VehicleType         RBMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bernier Atten           Autos:         58.73         -0.33         -1.88         0.00         -1.15         0.000         0.00           Medium Trucks:         77.9         -21.52         -1.88         0.00         -1.75         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Lch         CNEL	Centerline Dis	t. to Barrier:	66.0 feet	ŀ	Noise So	urce Eleva	ations (in f	eet)			
Barrier Distance to Observer:         10.0 feet         Medium Trucks:         2.297           Observer Height (Abov Pad):         5.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Pad Elevation:         0.0 feet         Lane Equivalent Distance (in feet)         Lane Equivalent Distance (in feet)           Road Grade         0.0 %         Autos:         75.811         Heavy Trucks:         75.811           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Bern Atter           Autos:         58.73         -0.33         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         77.90         -17.57         -1.88         0.00         -1.57         0.000         0.00           Medium Trucks:         76.95         54.6         52.9         46.8         55.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Medium Trucks:         59.4         57.7         53.8         49.9         58.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4			76.0 feet	ľ							
Pad Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Elevation:         0.0 feet           Road Calculation:         0.0 feet           Road Calculation:         0.0 degrees           FHWA Noise Model Calculations:         Distance         Finite Road         Freshel         Barrier Atten         Berrier Atten           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Freshel         Barrier Atten         Berrier Atten           Wedium Trucks:         70.80         -17.57         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         77.9         -21.52         -1.88         0.00         -1.57         0.000         0.00           Untitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Ldn         CNEL           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50.3           Medium Trucks:         59.4         57.7         53.8         49.9         58.4         56.5           Medium Trucks:         59.4         57.7         53.8         49.9					Mediur	n Trucks:					
Road Elevation:         0.0 feet         Lane Equivalent Distance (in feet)           Road Grade:         0.0%         Autos:         75.928           Left View:         90.0 degrees         Medium Trucks:         75.811           Right View:         90.0 degrees         Heavy Trucks:         75.822           FHWA Noise Model Calculations         Finite Road         Fresnel         Barrier Atten         Berm Atter           Autos:         58.73         -0.33         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         77.90         -1.75         -1.88         0.00         -1.15         0.00         0.00           Medium Trucks:         77.97         -21.52         -1.88         0.00         -1.15         0.00         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leq Peak Hour         Leq Zvening         Leq Night         Ldn         CNEL           Autos:         56.5         54.6         52.9         46.8         55.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Heavy Trucks:         54.6         53.2         44.1 <td< td=""><td>0 1</td><td>,</td><td></td><td></td><td>Heav</td><td>v Trucks:</td><td>8.006</td><td>Grade Adj</td><td>ustment:</td><td>0.0</td></td<>	0 1	,			Heav	v Trucks:	8.006	Grade Adj	ustment:	0.0	
Road Grade:         0.0%         Autos:         75.928           Left View:         -90.0 degrees         Medium Trucks:         75.811           Heavy Trucks:         75.822           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atter           Autos:         58.73         -0.33         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         77.9         -21.52         -1.88         0.00         -1.75         0.000         0.00           VehicleType         Leg Peak Hour         Leg Qay         Leg Evening         Leg Night         Ldn         CNEL           VehicleType         Lag Peak Hour         Leg Qay         Leg Evening         Leg Night         Ldn         CNEL           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Medium Trucks:         59.4         57.7         53.8         49.9         58.4         58           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58           Vehicle Noise:         59.4				-	1 F		-4 (1	6			
Left View:         -90.0 degrees         Medium Trucks:         75.811           Right View:         90.0 degrees         Medium Trucks:         75.811           VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Bernier Atten           Autos:         58.73         -0.33         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         70.80         -17.57         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         77.97         -21.52         -1.88         0.00         -1.57         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         UencleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         56.5         54.6         52.9         46.8         55.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Heavy Trucks:         59.4         57.7         53.8         49.9         58.4         58           Vehicle Noise:         59.4         57.7				-	Lane Equ			leel)			
Right View:         90.0 degrees         Heavy Trucks:         75.822           FHWA Noise Model Calculations         Image: Calculation of the state of t	F				Modiur						
VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atter           Autos:         58.73         -0.33         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         70.80         -17.57         -1.88         0.00         -1.15         0.000         0.00           Heavy Trucks:         77.97         -21.52         -1.88         0.00         -1.57         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         VehicleType         Leg Peak Hour         Leg Day         Leg Evening         Leq Night         Ldn         CNEL           Autos:         56.5         54.6         52.9         46.8         55.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Heavy Trucks:         59.4         57.7         53.8         49.9         58.4         58           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58           Centerline Distance to Noise Contour (In feet)         70 dBA         65 dBA         60 dBA         55 dBA <td></td>											
Autos:         58.73         -0.33         -1.88         0.00         -0.99         0.000         0.00           Medium Trucks:         70.80         -17.57         -1.88         0.00         -1.15         0.000         0.00           Heavy Trucks:         77.97         -21.52         -1.88         0.00         -1.57         0.000         0.00           Unitigated Noise Levels (without Topo and barrier attenuation)         UehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Heavy Trucks:         54.6         53.2         44.1         45.4         53.7         53           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         56           Centerline Distance to Noise Contour (In feet)         70 dBA         65 dBA         60 dBA         55 dBA	FHWA Noise Mode	l Calculations	;								
Medium Trucks:         70.80         -17.57         -1.88         0.00         -1.15         0.000         0.00           Heavy Trucks:         77.97         -21.52         -1.88         0.00         -1.57         0.000         0.00           Umitigated Noise Levels (without Topo and barrier attenuation)         Leq Evening         Leq Night         Ldn         CNEL           Autos:         56.5         54.6         52.9         46.8         55.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50.4           Heavy Trucks:         51.4         49.8         43.5         41.9         50.4         50.4           Vehicle Noise:         59.4         57.7         53.8         49.9         56.4         58.4           Vehicle Noise:         59.4         57.7         53.8         49.9         56.4         53.7           Vehicle Noise:         59.4         57.7         53.8         49.9         56.4         58.4           Centerline Distance to Noise Contour (in feet)         Equation 1.2         70 dBA         65 dBA         60 dBA         55 dBA	VehicleType	REMEL	Traffic Flow	Distance	Finite	Road I	Fresnel	Barrier Atte	en Berm	Atten	
Heavy Trucks:         77.97         -21.52         -1.88         0.00         -1.57         0.000         0.00           Unnitigated Noise Levels (without Topo and barrier attenuation)         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         56.5         54.6         52.9         46.8         55.4         56.6           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50.9           Heavy Trucks:         54.6         53.2         44.1         45.4         53.7         53.8           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58.4           Centerline Distance to Noise Contour (In feet)         70 dBA         65 dBA         60 dBA         55 dBA										0.00	
Unmitigated Noise Levels (without Topo and barrier attenuation)           VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         56.5         54.6         52.9         46.8         55.4         56.4         50.4										0.00	
VehicleType         Leq Peak Hour         Leq Day         Leq Evening         Leq Night         Ldn         CNEL           Autos:         56.5         54.6         52.9         46.8         55.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Heavy Trucks:         54.6         53.2         44.1         45.4         53.7         53           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58           Centerline Distance to Noise Contour (In feet)         70 dBA         65 dBA         60 dBA         55 dBA						0.00	-1.57	0.0	00	0.00	
Autos:         56.5         54.6         52.9         46.8         55.4         56           Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Heavy Trucks:         54.6         53.2         44.1         45.4         53.7         53           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA	-			÷	,						
Medium Trucks:         51.4         49.8         43.5         41.9         50.4         50           Heavy Trucks:         54.6         53.2         44.1         45.4         53.7         53           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58           Centerline Distance to Noise Contour (In feet)         70 dBA         65 dBA         60 dBA         55 dBA						Leq Nig					
Heavy Trucks:         54.6         53.2         44.1         45.4         53.7         53           Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58           Centerline Distance to Noise Contour (in feet)           70 dBA         65 dBA         60 dBA         55 dBA				-							
Vehicle Noise:         59.4         57.7         53.8         49.9         58.4         58           Centerline Distance to Noise Contour (in feet)         70 dBA         65 dBA         60 dBA         55 dBA		• · ·		-							
70 dBA 65 dBA 60 dBA 55 dBA	-			-						58.	
70 dBA 65 dBA 60 dBA 55 dBA	Centerline Distanc	e to Noise Co	ntour (in feet)								
Ldn: 5 17 53 167			. /	70	dBA	65 dB/	4	60 dBA	55 d	BA	
			Ldr	n:	5	17		53	16	7	
CNEL: 6 18 58 182			CNEL		6	18		58	18	2	

Fi	IWA-RD-77-108	HIGHWA	Y NO			DEL			
Scenario: Existing V Road Name: Compton Road Segment: s/o Verno	Av.			Project I Job NL	Vame: I Imber: '		ew		
SITE SPECIFIC	NPUT DATA			N	DISE N	<b>IODE</b>	L INPUT	s	
Highway Data			Sit	e Conditions (	Hard =	10, So	oft = 15)		
Average Daily Traffic (Adt):	12,420 vehicles					Autos:	10		
Peak Hour Percentage:	10%			Medium Tru	cks (2 A	Axles):	10		
Peak Hour Volume:	1,242 vehicles			Heavy Truc	ks (3+ A	Axles):	10		
Vehicle Speed:	25 mph		Va	hicle Mix					
Near/Far Lane Distance:	50 feet		Ve	VehicleType		Dav	Evening	Night	Daily
Site Data						77.5%			97.429
	0.0 feet			Medium Tri		84.8%		10.3%	
Barrier Height:				Heavy Tri				10.8%	
Barrier Type (0-Wall, 1-Berm): Centerline Dist, to Barrier.				,					
Centerline Dist. to Observer.			No	ise Source Ele	vation	s (in fe	et)		
Barrier Distance to Observer.				Autos		000			
Observer Height (Above Pad):			1	Medium Trucks	: 2.1	297			
Pad Elevation:	0.0 feet			Heavy Trucks	: 8.0	006	Grade Ad	ljustment	: 0.0
Road Elevation:			La	ne Equivalent	Distan	ce (in f	feet)		
Road Grade:			20	Autos		603	000)		
Left View		c .		Medium Trucks					
Right View:	90.0 degree			Heavy Trucks		510			
FHWA Noise Model Calculation	-								
VehicleType REMEL	Traffic Flow	Distan		Finite Road	Fresn		Barrier Att		m Atten
Autos: 58.7			2.45	0.00		-1.02		000	0.00
Medium Trucks: 70.8			2.45	0.00		-1.15		000	0.00
Heavy Trucks: 77.9	7 -19.65	-	2.45	0.00		-1.50	0.0	000	0.00
Unmitigated Noise Levels (with	hout Topo and I	barrier at	tenua	tion)					
VehicleType Leq Peak H			q Ever				Ldn	-	VEL
		55.9		54.2	48.1		56.		57.
		51.1		44.8	43.2		51.		51.
		54.5		45.4	46.7		55.		55.
Vehicle Noise:	0.7	59.0		55.1	51.2	2	59.	7	60.
Centerline Distance to Noise	Contour (in feet)	1		1					
			70 dB,			6	60 dBA		dBA
		dn:	8	27			84		66
		IFL:	9	29			92		91

Wednesday, August 14, 2019

0-	. Estation 2011	h Desis at				Desises: *		and as d			
	o: Existing Wil					Project N	iame: Pa mber: 12		ew		
	e: Long Beach nt: n/o 41st St.	AV.				JOD INU	mber. 12	2020			
ů											
	SPECIFIC IN	PUT DATA							L INPUTS		
Highway Data				S	Site Con	ditions (l	lard = 1	0, So	oft = 15)		
Average Daily	Traffic (Adt):	8,890 vehicles					A	utos:	10		
Peak Hour	Percentage:	10%			Med	dium True	cks (2 Ax	des):	10		
Peak H	our Volume:	889 vehicles			Hea	avy Truck	(3+ Ax	des):	10		
Ve	hicle Speed:	35 mph		L	/ehicle N	lix					
Near/Far La	ne Distance:	72 feet		H		cleType	D	av	Evening	Night	Dailv
Site Data				-				7.5%	•	9.6%	
	rier Heiaht:	0.0 feet			Me	dium Tru		4.8%		10.3%	1.849
Barrier Type (0-W		0.0 reet			H	leavy Tru	cks: 8	6.5%	2.7%	10.8%	0.749
Centerline Dis	. ,	110.0 feet									
Centerline Dist.		120.0 feet		٨	loise So	urce Ele			et)		
Barrier Distance		10.0 feet				Autos:					
Observer Height (		5.0 feet				n Trucks:					
	ad Flevation:	0.0 feet			Heav	y Trucks:	8.00	)6	Grade Adju	istment:	0.0
	ad Elevation:	0.0 feet		L	ane Eau	ivalent l	Distance	(in f	eet)		
	Road Grade:	0.0%				Autos			,		
	Left View:	-90.0 degrees			Mediur	n Trucks	114.50	05			
	Right View:	90.0 degrees			Heav	y Trucks:	114.5	12			
FHWA Noise Mode	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fresne	1 1	Barrier Atte	n Ber	m Atten
Autos:	64.30	-1.37		-3.67	7	0.00	- '	1.05	0.00	00	0.00
Medium Trucks:	75.75	-18.61		-3.67	,	0.00	-	1.15	0.00	00	0.00
Heavy Trucks:	81.57	-22.56		-3.67	7	0.00	-	1.40	0.00	00	0.00
Unmitigated Noise											
VehicleType	Leq Peak Hou			eq Ev	ening	Leq N	•		Ldn	CI	IEL
Autos:	59		7.4		55.6		49.5		58.2		58.
Medium Trucks:	53		2.0		45.6		44.1		52.5		52.
Heavy Trucks:	55	-	3.9		44.9		46.1		54.5		54.
Vehicle Noise:	61		9.8		56.3		51.9		60.5		60.
Centerline Distand	e to Noise Co	ntour (in feet)		70 d	04	05 4	04		0.104		
		,				65 d		6	0 dBA		dBA
		1	dn:	13	5	42			134	4	23
		CN		15	-	47			148		67

Scenario: Existing With Project Road Name: Long Beach Av. Road Segment: slo 41st St.     Project Name: Parkview Job Number: 12620       SITE SPECIFIC INPUT DATA     NOISE MODEL INPUTS       Highway Data     Site Conditions (Hard = 10, Soft = 15)       Average Daily Traffic (Adt): 10,830 vehicles Peak Hour Volume: 1,083 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 72 feet     Medium Trucks (2 Avles): 10       Vehicle Mix     Vehicle Mix       Barrier Height: 0.0 feet Barrier Type (0.Wall, 1-Berm): 0.0 Centerline Dist. to Observer: 120.0 feet Barrier Distance to Observer: 120.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees     Noise Source Elevations (in feet)       Heavy Trucks: 8.006     Grade Adjustment: 0.0 Medium Trucks: 2.297 Heavy Trucks: 114.505       How of Grade Adjustment: 0.0     Interesting Mit Noise       Kood Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees     Medium Trucks: 114.505       HWA Noise Model Calculations     Vehicle Type     Darrier Atten       Vehicle Type     Darrier Atten     Barrier Atten
Highway Data     Site Conditions (Hard = 10, Soft = 15)       Average Daily Traffic (Adt): 10,830 vehicles     Autos:: 10       Peak Hour Percentage:     10%       Peak Hour Volume:     1,083 vehicles       Vehicle Speed:     35 mph       Near/Far Lane Distance:     72 feet       Barrier Height:     0.0 feet       Barrier Height:     0.0 feet       Barrier Distance to Observer:     120.0 feet       Barrier Distance to Observer:     10.0 feet       Road Elevation:     0.0 f
Average Daily Traffic (Adt): 10,830 vehicles     Autos: 10       Peak Hour Percentage:     10%       Peak Hour Volume:     1,083 vehicles       Vehicle Speed:     35 mph       Near/Far Lane Distance:     72 feet       Site Data     Autos: 77.5% 12.9%       Barrier Height:     0.0 feet       Barrier Height:     0.0 feet       Barrier Height:     0.0 feet       Barrier Height:     10.0 feet       Centerline Dist. to Barrier:     120.0 feet       Barrier Jost. to Dobserver:     120.0 feet       Pad Elevation:     0.0 feet       Road Elevation:     0.0 feet       Road Elevation:     0.0 feet       Road Grade:     0.0%       Left View:     -90.0 degrees       Right View:     90.0 degrees       Heavy Trucks:     8.006       Grade Activation:     14.582       Medium Trucks:     114.582       Heavy Trucks:     114.512
Braik Hour Percentage:     10%     Medium Trucks (2 Axles):     10       Peak Hour Volume:     1.083 vehicles     Heavy Trucks (3+ Axles):     10       Vehicle Speed:     35 mph     Vehicle Mix     Day     Evening     Night     Dai       Site Data     Barrier Height:     0.0 feet     Medium Trucks:     84.8%     4.9%     10.3%     1.8       Barrier Height:     10.0 feet     Medium Trucks:     86.8%     2.7%     10.8%     0.7       Centerline Dist. to Darrier:     120.0 feet     Heavy Trucks:     8.006     Grade Adjustment:     0.0       Barrier Distance to Observer:     10.0 feet     Autos:     0.000     Medium Trucks:     2.27%     10.8%     0.7       Observer Height (Above Pad):     5.0 feet     Heavy Trucks:     8.006     Grade Adjustment:     0.0       Pad Elevation:     0.0 feet     Autos:     114.582     Heavy Trucks:     114.505       Road Grade:     0.0%     Autos:     114.512     FHWA Noise Model Calculations     Finite Road     Fresnet     Barrier Atten     Berrier Atten
Peak Hour Volume:     1,083 vehicles       Vehicle Speed:     35 mph       Near/Far Lane Distance:     72 feet       Barrier Height:     0.0 feet       Barrier Type (0-Wall, 1-Berm):     0.0       Centerline Dist. to Observer:     10.0 feet       Barrier Jostance to Observer:     10.0 feet       Barrier Jostance to Observer:     10.0 feet       Barrier Jestance to Observer:     10.0 feet       Road Elevation:     0.0 feet       Road Grade:     0.0%       Left View:     -90.0 degrees       Right View:     -90.0 degrees       Right View:     90.0 degrees       Heavy Trucks:     114.512
Vehicle Speed: Near/Far Lane Distance:     Site Data       Vehicle Mix       Site Data       Site Data       Autos:       Type (0-Wall, 1-Berm): 0.0       Centerline Dist. to Daserver: 10.0 feet       Moise Source Elevations (in feet)       Centerline Dist. to Doserver: 10.0 feet       Barrier Height: Centerline Dist. to Doserver: 10.0 feet     Noise Source Elevations (in feet)       Moise Source Elevations (in feet)       Dead Elevation: Road Elevation: 0.0 feet     Noise Source (in feet)       Road Grade: Right View: VehicleType     0.0       Heavy Trucks: Right View: VehicleType     Day     Evening       FHWA Noise Model Calculations     Traffic Flow     Distance       VehicleType     Remit Traffic Flow     Distance
Near/Far Lane Distance:         72 feet         Vehicle Mix         Day         Evening         Night         Dail           Site Data         Autos:         77.5%         12.9%         9.6%         97.4           Barrier Type         Object         Medium Trucks:         84.8%         4.9%         10.3%         18.8           Barrier Type         Object         Medium Trucks:         86.8%         2.7%         10.8%         0.7           Centerline Dist. to Barrier:         110.0 feet         Meais Source Elevations (in feet)         Noise Noise
Near/Far Lane Distance:     72 feet       VehicleType     Day     Evening     Night     Dail       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     Centerline Dist. to Dasrver:     110.0 feet     Medium Trucks:     86.5%     2.7%     10.8%     0.7       Centerline Dist. to Observer:     120.0 feet     Medium Trucks:     2.297     Medium Trucks:     2.297       Dead Elevation:     0.0 feet     Autos:     114.582     Medium Trucks:     2.145       Road Grade:     0.0%     Left View:     -90.0 degrees     Medium Trucks:     114.505       Right View:     90.0 degrees     Medium Trucks:     114.505       FHWA Noise Model Calculations     Traffic Flow     Distance     Finite Road     Fresnel     Barrier Atten     Bern Atter
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 Type (0-Wall, 1-Berm):         0.0         Medium Trucks:         86.4%         2.7%         10.8%         0.7           Centerline Dist. to Barrier:         110.0 feet         Medium Trucks:         86.5%         2.7%         10.8%         0.7           Diserver Ibist. to Dserver:         120.0 feet         Noise Source Elevations (in feet)         7         10.8%         0.7           Observer Height (Above Pad):         5.0 feet         Heavy Trucks:         8.006         Grade Adjustment:         0.0           Road Elevation:         0.0 feet         Modium Trucks:         8.006         Grade Adjustment:         0.0           Left View:         -90.0 degrees         Medium Trucks:         114.505         Heavy Trucks:         114.505           Heavy Trucks:         114.512         FHWA Noise Model Calculations         YenkicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnet         Barrier Atten         Bermier Atten
Barrier Type (IV-Wall, 1-Berm):     0.0       Barrier Type (IV-Wall, 1-Berm):     0.0       Centerline Dist. to Barrier:     110.0 feet       Centerline Dist. to Doserver:     120.0 feet       Barrier Type (IV-Wall, 1-Berm):     0.0       Centerline Dist. to Doserver:     120.0 feet       Barrier Type (IV-Wall, 1-Berm):     0.0       Barrier Type (IV-Wall, 1-Berm):     0.0 feet       Barrier Type (IV-Wall, 1-Berm):     0.0 feet       Road Elevation:     0.0 feet       Road Grade:     0.0%       Left View:     -90.0 degrees       Right View:     90.0 degrees       Heavy Trucks:     114.505       Heavy Trucks:     114.512
Barrier Type (0-Wall, 1-Berm):     0.0     Heavy Trucks:     86.5%     2.7%     10.8%     0.7       Centerline Dist. to Dasriver:     110.0 feet     Noise Source Elevations (in feet)     Noise Source Elevations (in feet)       Centerline Dist. to Doserver:     10.0 feet     Autos:     0.00       Barrier Distance to Observer:     10.0 feet     Autos:     0.00       Pad Elevation:     0.0 feet     Autos:     114.582       Road Grade:     0.0%     Autos:     114.582       Left View:     -90.0 degrees     Heavy Trucks:     114.512       FHMA Noise Model Calculations     Traffic Flow     Distance     Finite Road     Fresnel
Centerline Dist. to Barrier:     110.0 feet       Centerline Dist. to Observer:     120.0 feet       Barrier Distance to Observer:     120.0 feet       Observer Height (Above Pad):     5.0 feet       Pad Elevation:     0.0 feet       Road Grade:     0.0%       Left View:     90.0 degrees       Right View:     90.0 degrees       Heavy Trucks:     114.505       Heavy Trucks:     114.512
Centerline Dist. to Observer: 120.0 feet Barrier Distance to Observer: 10.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Grade: 0.0% Left View: 90.0 degrees Right Right Rig
Barrier Distance to Observer:     10.0 feet     Medium Trucks:     2.297       Observer Height (Above Pad):     5.0 feet     Heavy Trucks:     8.006     Grade Adjustment:     0.0       Pad Elevation:     0.0 feet     Left View:     9.0.0 degrees     Autos:     114.562       Right View:     90.0 degrees     Heavy Trucks:     114.512       FHWA Noise Model Calculations     Traffic Flow     Distance     Finite Road     Fresnel     Barrier Atten     Berma Atten
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:     114.582       Left View:     -90.0 degrees     Medium Trucks:     114.505       Road Elevations:     0.0 degrees     Heavy Trucks:     114.512
Pad Elevation:     0.0 feet       Road Clevation:     0.0 feet       Left View:     -90.0 degrees       Right View:     90.0 degrees       Heavy Trucks:     114.505       Heavy Trucks:     114.512
Road Grade:         0.0%         Autos:         114.582           Left View:         -90.0 degrees         Medium Trucks:         114.505           Right View:         90.0 degrees         Heavy Trucks:         114.512           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atter
Left View:         -90.0 degrees         Medium Trucks:         114.505           Right View:         90.0 degrees         Heavy Trucks:         114.512           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Barrier Atten         Berm Atten
Right View:         90.0 degrees         Heavy Trucks:         114.512           FHWA Noise Model Calculations         VehicleType         REMEL         Traffic Flow         Distance         Finite Road         Fresnel         Berrier Atten         Berri Atten
FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrn Atte
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrn Atte
Autos: 64.30 -0.51 -3.67 0.00 -1.05 0.000 0.0
Medium Trucks: 75.75 -17.75 -3.67 0.00 -1.15 0.000 0.0
Heavy Trucks: 81.57 -21.71 -3.67 0.00 -1.40 0.000 0.0
Unmitigated Noise Levels (without Topo and barrier attenuation)
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL
Autos: 60.1 58.2 56.5 50.4 59.0 5
Medium Trucks: 54.3 52.8 46.5 44.9 53.4 5
Heavy Trucks: 56.2 54.8 45.7 47.0 55.3 5
Vehicle Noise: 62.3 60.6 57.2 52.8 61.3 6
Centerline Distance to Noise Contour (in feet)
70 dBA 65 dBA 60 dBA 55 dBA
Ldn: 16 52 163 515
CNEL: 18 57 180 569

Wednesday, August 14, 2019

	FHW	A-RD-77-108 HIG	HWAY I	NOISE PR	EDICTION	MODEL		
Scenario: Road Name: Road Segment:						me: Parkvi ber: 12620		
SITE SF	PECIFIC INF	UT DATA			NOI	SE MODE		s
Highway Data				Site Cond	litions (Ha	ard = 10, Se	oft = 15)	
Average Daily Tr	affic (Adt): 7	,450 vehicles				Autos.	10	
Peak Hour Pe	ercentage:	10%		Med	lium Truck	s (2 Axles).	10	
Peak Hou	ır Volume:	745 vehicles		Hea	vy Trucks	(3+ Axles).	10	
Vehio	cle Speed:	25 mph	-	Vehicle N	liv			
Near/Far Lane	Distance:	12 feet	ŀ		leType	Dav	Evening	Night Daily
Site Data				venic	Auto		•	9.6% 97.42
		0.0 feet		Me	dium Truc			10.3% 1.84
	er Height:	0.0			eavy Truc			10.8% 0.74
Barrier Type (0-Wal Centerline Dist.		0.0 66.0 feet						
Centerline Dist. to		76.0 feet		Noise So		ations (in f	eet)	
Barrier Distance to		10.0 feet			Autos:	0.000		
Observer Height (At		5.0 feet			n Trucks:	2.297		
0 1	Elevation:	0.0 feet		Heavy	/ Trucks:	8.006	Grade Ad	justment: 0.0
	Elevation:	0.0 feet	ŀ	Lane Equ	ivalent Di	stance (in	feet)	
Ro	ad Grade:	0.0%	ŀ		Autos:	75.928		
	Left View:	-90.0 degrees		Mediun	n Trucks:	75.811		
F	Right View:	90.0 degrees		Heavy	/ Trucks:	75.822		
FHWA Noise Model	Calculations							
VehicleType	REMEL	Traffic Flow D	listance	Finite F	Road I	Fresnel	Barrier Att	en Berm Atter
Autos:	58.73	-0.68	-1.8	38	0.00	-0.99	0.0	0.0 000
Medium Trucks:	70.80	-17.92	-1.8		0.00	-1.15		0.0 000
Heavy Trucks:	77.97	-21.87	-1.8	38	0.00	-1.57	0.0	0.0 000
Unmitigated Noise L			1	<u> </u>				
	eq Peak Hour			vening	Leq Nig		Ldn	CNEL
Autos:	56.2			52.5		46.5	55.1	
Medium Trucks:	51.0			43.1		41.6	50.1	
Heavy Trucks:	54.2			43.8		45.0	53.4	
Vehicle Noise:	59.1			53.5		49.6	58.1	1 58
Centerline Distance	to Noise Con	tour (in feet)	70	-10.4	05.15		00 -/D4	FF -10 1
		I da		dBA	65 dB/	4 1	60 dBA	55 dBA
		Ldn. CNFL		5 5	15 17		49	154 168
		CNEL.		c	17		53	168

FF	IWA-RD-77-108 I	HIGHWA	Y NOISE	PREDICTIC								
Scenario: Existing V Road Name: 41st St. Road Segment: e/o Hoope	,				lame: Parl mber: 126							
9												
SITE SPECIFIC I Highway Data	NPUT DATA		NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)									
			Sile C			,						
Average Daily Traffic (Adt):	8,630 vehicles				Auto							
Peak Hour Percentage:	10%			Medium Truc		,						
Peak Hour Volume:	863 vehicles		1	Heavy Truck	is (3+ Axle	s): 10						
Vehicle Speed:	25 mph		Vehicl	e Mix								
Near/Far Lane Distance:	12 feet			ehicleType	Dav	/ Evening	Night	Daily				
Site Data		-		AL	itos: 77.	5% 12.9%	6 9.6%	6 97.42				
Barrier Height:	0.0 feet			Medium Tru	cks: 84.	8% 4.9%	6 10.3%	6 1.84				
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy Tru	cks: 86.	5% 2.7%	6 10.8%	6 0.74				
Centerline Dist. to Barrier:	66.0 feet											
Centerline Dist. to Observer:	76.0 feet		Noise	Source Ele		1 feet)						
Barrier Distance to Observer:	10.0 feet			Autos:								
Observer Height (Above Pad):	5.0 feet			lium Trucks:								
Pad Elevation:	0.0 feet		He	avy Trucks:	8.006	Grade A	ldjustmen	t: 0.0				
Road Elevation:	0.0 feet		Lane E	quivalent l	Distance (	in feet)						
Road Grade:	0.0%			Autos:	75.928	,						
Left View:	-90.0 degree	9	Med	lium Trucks:	75.811							
Right View:	90.0 degree		He	avy Trucks:	75.822							
FHWA Noise Model Calculatio	ns		1									
VehicleType REMEL	Traffic Flow	Distand	e Fini	ite Road	Fresnel	Barrier A	tten Be	erm Atter				
Autos: 58.7	3 -0.04	-	1.88	0.00	-0.9	99 (	0.000	0.0				
Medium Trucks: 70.8		-	1.88	0.00	-1.1	15 (	0.000	0.0				
Heavy Trucks: 77.9	7 -21.23	-	1.88	0.00	-1.5	57 (	0.000	0.00				
Unmitigated Noise Levels (wit				<i>,</i>								
VehicleType Leq Peak Ho			q Evening			Ldn		NEL				
		54.9	53		47.1		5.7	56				
		50.1	43		42.2		).7	50				
		53.4	44		45.7		1.0	54				
Vehicle Noise: 5	9.7 5	58.0	54	.1	50.2	54	3.7	59				
Centerline Distance to Noise (	Contour (in feet)		_									
			70 dBA	65 d		60 dBA		5 dBA				
	L	dn:	6	18		56		178				
		IFL :	6	20		62		195				

Wednesday, August 14, 2019

Scenario	: Existing Wi	th Project		Project Name: Parkview							
Road Name							umber: 126				
Road Segmen	t: w/o Long B	each Av.									
SITE S	PECIFIC IN	IPUT DATA						DEL INPUTS			
Highway Data				S	ite Con	ditions	(Hard = 10	Soft = 15)			
Average Daily T	raffic (Adt):	8,730 vehicles					Au	os: 10			
Peak Hour F	Percentage:	10%			Me	dium Tr	ucks (2 Axle	es): 10			
Peak Ho	our Volume:	873 vehicles			Hei	avy Tru	cks (3+ Axk	es): 10			
Veh	icle Speed:	25 mph		V	ehicle N	Ai~					
Near/Far Lan	e Distance:	12 feet		-		cleType	Da	y Evening	Night	Daily	
Site Data								.5% 12.9%	9.6%	97.42%	
Barr	rier Height:	0.0 feet			Me	edium T	rucks: 84	.8% 4.9%	10.3%	1.84%	
Barrier Type (0-Wa		0.0			F	leavy T	rucks: 86	.5% 2.7%	10.8%	0.74%	
Centerline Dis	. ,	66.0 feet					evations (i				
Centerline Dist. to	o Observer:	76.0 feet		N	ioise So	Auto		,			
Barrier Distance to	o Observer:	10.0 feet			1 4 m all 1 m	n Truck					
Observer Height (A	Above Pad):	5.0 feet				n Truck v Truck			istmont:	0.0	
Pa	d Elevation:	0.0 feet			neav	у писк	s. 0.000	Grade Auju	isuneni.	0.0	
Roa	d Elevation:	0.0 feet		L	ane Equ	uivalent	Distance	(in feet)			
R	oad Grade:	0.0%				Auto	s: 75.928	3			
	Left View:	-90.0 degree	s		Mediur	n Truck	s: 75.81	I			
	Right View:	90.0 degree	S		Heav	y Truck	s: 75.822	2			
FHWA Noise Mode	I Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresnel	Barrier Atte	n Bern	n Atten	
Autos:	58.73	0.01		-1.88		0.00	-0.	99 0.00	00	0.00	
Medium Trucks:	70.80	-17.23		-1.88		0.00	-1.	15 0.00	00	0.00	
Heavy Trucks:	77.97	-21.18		-1.88		0.00	-1.	57 0.00	00	0.00	
<b>Inmitigated Noise</b>	Levels (with	out Topo and	barrier a	ttenu	lation)						
VehicleType I	Leq Peak Hou	ır Leq Day	Le	q Ev	ening	Leq	Night	Ldn	CN	EL	
Autos:	56	.9	55.0		53.2		47.1	55.8		56.	
Medium Trucks:	51	.7	50.2		43.8		42.3	50.7		51.0	
Heavy Trucks:	54	.9	53.5		44.5		45.7	54.1		54.3	
Vehicle Noise:	59	.7	58.1		54.2		50.2	58.8		59.	
Centerline Distance	e to Noise Co	ontour (in feet)									
				70 d	BA		dBA	60 dBA	55 0		
			Ldn: JFI :	6 6			8 0	57 62	18 19		

	FH\	VA-RD-77-108 I	HIGHW	AY NO	ISE PR	EDICT	ION MOD	DEL			
Road Nam	io: Existing Wi ie: 41st St. nt: e/o Long Be						Name: F umber: 1		ew		
SITE	SPECIFIC IN	IPUT DATA				N	IOISE N	IODE	L INPUTS	5	
Highway Data				Si	te Cond		(Hard =				
Average Daily	Traffic (Adt):	7,390 vehicles					A	Autos:	10		
Peak Hour	Percentage:	10%			Med	lium Tri	ucks (2 A	xles):	10		
Peak H	lour Volume:	739 vehicles			Hea	vy Tru	cks (3+ A	xles):	10		
Ve	hicle Speed:	25 mph		1/0	hicle M	llu					
Near/Far La	ne Distance:	12 feet		ve		leType		Day	Evening	Night	Daily
Site Data				_	Venno			77.5%	•	9.6%	
				_	Me	dium T		84.8%		10.3%	
Barrier Type (0-W	rrier Height:	0.0 feet 0.0				eavy Ti		B6.5%		10.8%	
Centerline Di	. ,	0.0 66.0 feet								10.070	0.1170
Centerline Dist.		76.0 feet		No	ise So		evations		eet)		
Barrier Distance		10.0 feet				Auto					
Observer Height (		5.0 feet			Medium						
	ad Elevation:	0.0 feet			Heavy	/ Truck	s: 8.0	06	Grade Adj	ustment	: 0.0
	ad Elevation:	0.0 feet		La	ne Equ	ivalent	Distanc	e (in i	feet)		
	Road Grade:	0.0%				Auto	s: 75.9	128	,		
·	Left View:	-90.0 degree			Medium	Truck					
	Right View:	90.0 degree			Heavy	Truck	s: 75.8	322			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite F	Road	Fresn	el	Barrier Atte	en Bei	m Atten
Autos:	58.73	-0.71		-1.88		0.00		0.99	0.0	00	0.000
Medium Trucks:	70.80	-17.95		-1.88		0.00		1.15	0.0	00	0.000
Heavy Trucks:	77.97	-21.91		-1.88		0.00		1.57	0.0	00	0.000
Unmitigated Noise											
VehicleType	Leq Peak Hou			eq Eve		Leq	Night		Ldn		NEL
Autos:	56		4.2		52.5		46.4		55.0		55.6
Medium Trucks:	51		9.5		43.1		41.6		50.0		50.2
Heavy Trucks:	54		2.8		43.7		45.0		53.3		53.5
Vehicle Noise:	59	-	7.3		53.4		49.5		58.0	)	58.4
Centerline Distand	ce to Noise Co	ontour (in feet)						_			
				70 dB	A		dBA	6	60 dBA		dBA
											53
			.dn: FI :	5 5			5 7		48 53		67

Wednesday, August 14, 2019

FHWA-RD-77-1	108 HIGHWA	Y NOISE PF	REDICTION	MODEL						
Scenario: Future Without Project Road Name: Central Av. Road Segment: n/o 41st St.			Project Nan Job Numb		ew					
SITE SPECIFIC INPUT DAT	A	NOISE MODEL INPUTS								
Highway Data		Site Con	ditions (Har	d = 10, Sc	oft = 15)					
Average Daily Traffic (Adt): 20,290 vehi Peak Hour Percentage: 10%			dium Trucks							
Peak Hour Volume: 2,029 vehi Vehicle Speed: 35 mph		Hei	avy Trucks (	3+ Axies):	10					
Vehicle Speed: 35 mph Near/Far Lane Distance: 50 feet		Vehicle I								
Near/Far Lane Distance. 50 leet		Vehi	icleType	Day	0	Night Daily				
Site Data			Autos			9.6% 97.42%				
Barrier Height: 0.0 fee Barrier Type (0-Wall, 1-Berm): 0.0	t		edium Trucks Ieavy Trucks			10.3% 1.84% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 fee	t	Noise So	ource Elevat	ions (in fe	et)					
Centerline Dist. to Observer: 90.0 fee Barrier Distance to Observer: 10.0 fee Observer Height (Above Pad): 5.0 fee Pad Elevation: 0.0 fee Road Elevation: 0.0 fee	t t	Mediur Heav	Autos: m Trucks: m Trucks: y Trucks: uivalent Dis	0.000 2.297 8.006	Grade Adji	ustment: 0.0				
Road Elevation: 0.0 fee Road Grade: 0.0%	t	Lane Ly		86.603	001)					
Left View: -90.0 deg Right View: 90.0 deg	,		n Trucks: y Trucks:	86.500 86.510						
FHWA Noise Model Calculations										
VehicleType REMEL Traffic Flor	w Distan	ce Finite	Road Fi	resnel	Barrier Atte	n Berm Atten				
Autos: 64.30 2.	21 ·	2.45	0.00	-1.02	0.00	0.00 0.00				
Medium Trucks: 75.75 -15.		2.45	0.00	-1.15	0.00					
Heavy Trucks: 81.57 -18.	98 -	2.45	0.00	-1.50	0.00	0.00				
Unmitigated Noise Levels (without Topo a		,		T	1					
VehicleType Leq Peak Hour Leq L		q Evening	Leq Nigh		Ldn	CNEL				
Autos: 64.1	62.2	60.4		54.3	63.0	63.				
Medium Trucks: 58.3 Heavy Trucks: 60.1	56.8 58.7	50.4 49.7		48.9 50.9	57.3 59.3	57. 59.				
Heavy Trucks: 60.1 Vehicle Noise: 66.3	58.7 64.6	49.7		56.7	59.3 65.3					
		01.1			00.0	00.				
Contorlino Distanco to Noiso Contour (in fr	not)									
Centerline Distance to Noise Contour (in fe	,	70 dBA	65 dBA	F	0 dBA	55 dBA				
Centerline Distance to Noise Contour (in fo	,	70 dBA 30	65 dBA 96	6	0 dBA 303	55 dBA 958				

	FHW	/A-RD-77-108 H	IIGHWA	AY NO	DISE PRI	EDICTIC	ON MO	DEL			
Scenario: Fi Road Name: C Road Segment: s/	entral Av.	out Project			ŀ	Project N Job Nu			ew		
SITE SPE	CIFIC IN	PUT DATA				NO	DISE N	/ODE	L INPUT	s	
Highway Data				Si	te Cond	itions (F	lard =	10, Sc	oft = 15)		
Average Daily Traff	ic (Adt): 1	9,560 vehicles						Autos:	10		
Peak Hour Perc	entage:	10%			Med	ium Truc	cks (2 A	Axles):	10		
Peak Hour	/olume:	1,956 vehicles			Hea	vy Truck	(3+ A	Axles):	10		
Vehicle	Speed:	35 mph		16	ehicle M						
Near/Far Lane D	istance:	50 feet		Ve		leType		Day	Evening	Night	Daily
Site Data					venic			77.5%			97.42
				_	Mor	dium Tru		84.8%		10.3%	
Barrier		0.0 feet				avy Tru		86.5%		10.3 %	
Barrier Type (0-Wall, 1		0.0			110	avy IIu	UNS.	00.370	2.170	10.070	0.74
Centerline Dist. to		80.0 feet		N	oise Sou	ırce Ele	vation	s (in fe	et)		
Centerline Dist. to Ol		90.0 feet				Autos:	0.0	000			
Barrier Distance to Ol		10.0 feet			Medium	Trucks:	2.1	297			
Observer Height (Abov	,	5.0 feet			Heavy	Trucks:	8.0	006	Grade Ad	ljustment	0.0
	evation:	0.0 feet					N-4		(4)		
Road El		0.0 feet		Lä	ane Equi				reet)		
	Grade:	0.0%				Autos:		603			
	eft View:	-90.0 degrees			Medium		00.	500			
Rigi	ht View:	90.0 degrees			Heavy	Trucks:	86.	510			
FHWA Noise Model Ca	Iculations										
	EMEL	Traffic Flow	Distan		Finite R		Fresn	-	Barrier Att		m Atter
Autos:	64.30	2.05		-2.45		0.00		-1.02		000	0.00
Medium Trucks:	75.75	-15.18		-2.45		0.00		-1.15		000	0.00
Heavy Trucks:	81.57	-19.14		-2.45		0.00		-1.50	0.0	000	0.00
Unmitigated Noise Lev	els (witho	out Topo and ba	arrier a	ttenu	ation)						
	Peak Hou			q Eve		Leq N			Ldn		VEL
Autos:	63.		2.0		60.2		54.2		62.	-	63
Medium Trucks:	58.		5.6		50.2		48.7		57.3		57
Heavy Trucks:	60.	0 58	3.6		49.5		50.8	3	59.	1	59
Vehicle Noise:	66.	1 64	1.4		61.0		56.6	5	65.	1	65
Centerline Distance to	Noise Co	ntour (in feet)									
				70 dE	3A	65 di		e	60 dBA		dBA
			dn:	29		92			292		24
			-1:	32		102			322		020

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: Future Without Project Road Name: Central Av. Project Name: Parkview Job Number: 12620 Road Segment: s/o Vernon Av SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Autos: 10 Average Daily Traffic (Adt): 18,460 vehicles Peak Hour Percentage: 10% Medium Trucks (2 Axles): 10 Peak Hour Volume: 1,846 vehicles Heavy Trucks (3+ Axles): 10 35 mph Vehicle Speed: Vehicle Mix pe Day Evening Night Daily Autos: 77.5% 12.9% 9.6% 97.42% Near/Far Lane Distance: 50 feet VehicleType 9.6% 97.42% Site Data Medium Trucks: 84.8% 4.9% 10.3% 1.84% Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 0.74% Centerline Dist. to Barrier: Centerline Dist. to Observer: 80.0 feet Noise Source Elevations (in feet) 90.0 feet 0.000 Autos: Barrier Distance to Observer: Observer Height (Above Pad): 10.0 feet Medium Trucks: 2.297 5.0 feet Heavy Trucks: 8.006 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: Medium Trucks: Road Grade: 0.0% 86.603 86.500 Left View: -90.0 degrees Right View: 90.0 degrees Heavy Trucks: 86.510 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel -1.02 Barrier Atten Berm Atten Autos 64.30 1.80 -2.45 0.00 0.000 Medium Trucks: 75.75 -15.44 -2.45 0.00 -1.15 0.000 Heavy Trucks: 81.57 -19.39 -2.45 0.00 -1.50 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Night 53.9 Leq Day Leq Evening 61.8 60.0 VehicleType Leq Peak Hour Ldn CNEL 62.6 Autos. 63.7 Medium Trucks: 57.9 56.4 50.0 48.5 56.9 58.9 Heavy Trucks: 59.7 58.3 49.3 50.5 Vehicle Noise: 64.2 64.9 65.9 60.7 56.3 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA

Ldn:

CNEL:

28

30

87

96

276

304

	FHV	/A-RD-77-108 HI	GHWA	r NC	ISE PR	EDICTI	ON MC	DEL			
Road Nam	o: Future With e: Hooper Av. nt: n/o 33rd St.		Project Name: Parkview Job Number: 12620								
SITE	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	s	
Highway Data				Si	te Conc	litions	(Hard =	: 10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 1	5,700 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Mec	lium Tru	ıcks (2	Axles):	10		
Peak H	our Volume:	1,570 vehicles			Hea	avy Truc	cks (3+	Axles):	10		
Vel	hicle Speed:	25 mph		Ve	hicle N	lix					
Near/Far Lar	ne Distance:	12 feet		-	Vehio	leType		Day	Evening	Night	Daily
Site Data				-		- 4	Autos:	77.5%	12.9%	9.6%	97.42%
Bar	rier Heiaht:	0.0 feet			Me	dium Ti	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	. ,	66.0 feet		N	oise So	urco El	ovation	e (in fr	not)		
Centerline Dist.	to Observer:	76.0 feet		////	JISE 30	Auto		.000			
Barrier Distance	to Observer:	10.0 feet			Mediun			.000			
Observer Height (J	Above Pad):	5.0 feet				/ Trucks		.006	Grade Ac	liustmen	t: 0.0
Pad Elevation: 0.0 feet										,	
	ad Elevation:	0.0 feet		La	ne Equ				feet)		
F	Road Grade:	0.0%				Autos		.928			
	Left View:	-90.0 degrees			Mediun			.811			
	Right View:	90.0 degrees			Heavy	/ Trucks	s: 75	.822			
FHWA Noise Mode	el Calculations	5		_							
VehicleType	REMEL	Traffic Flow	Distanc	е	Finite I	Road	Fres	nel	Barrier At	ten Be	rm Atten
Autos:	58.73	2.56	-1	.88		0.00		-0.99	0.	000	0.000
Medium Trucks:	70.80	-14.68		88.1		0.00		-1.15		000	0.000
Heavy Trucks:	77.97	-18.63	-1	88.1		0.00		-1.57	0.	000	0.000
Unmitigated Noise											
	Leq Peak Hou			Eve	•	Leq	Night		Ldn		NEL
Autos:	59.		-		55.7		49.		58.		58.9
Medium Trucks:	54.				46.4		44.		53.		53.5
Heavy Trucks:	57.		-		47.0		48.	_	56.		56.7
Vehicle Noise:	62		6		56.7		52.	в	61.	3	61.7
Centerline Distanc	e to Noise Co	ntour (in feet)	-	0 45		67			C dBA		dD A
				10 dE	5A		dBA	6	0 dBA		dBA
		Ld. CNE		10 11			2 5		103 112		324 355
		CIVE	L.			3	5		112		555

EUWA PD 77 100 LICHWAY NOISE PREDICTION MODE

Wednesday, August 14, 2019

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Wednesday, August 14, 2019

0.000

0.000

0.000

63.2

57.1

59.0

65.3

872

962

	FHWA-F	RD-77-108 HIGI	HWAY I	NOISE PF	REDICTIO	N MODEL						
Scenario: Fi Road Name: H Road Segment: n/		Project				ame: Park nber: 1262						
SITE SPE	CIFIC INPUT	T DATA		NOISE MODEL INPUTS								
Highway Data				Site Con	ditions (H	ard = 10, S	Soft = 15)					
Average Daily Traff. Peak Hour Perc Peak Hour \	entage: 1	20 vehicles 10% 12 vehicles				Auto ks (2 Axles s (3+ Axles	): 10					
Vehicle	Speed: 2	25 mph	-	Vehicle I	liv							
Near/Far Lane D	istance: 1	2 feet	-		cleType	Dav	Evening	Night	Daily			
Site Data				von	Au		0	9.6%	97.42%			
	H-l-ht.	0.0 feet		Me	dium Truc	ks: 84.8	% 4.9%	10.3%	1.84%			
Barrier Barrier Type (0-Wall, 1	-Berm): (	0.0		ŀ	leavy Truc	cks: 86.5	% 2.7%	10.8%	0.74%			
Centerline Dist. to		5.0 feet		Noise So	urce Elev	ations (in	feet)					
Centerline Dist. to Ol		5.0 feet			Autos:	0.000						
Barrier Distance to Ol		0.0 feet		Mediur	n Trucks:	2.297						
Observer Height (Abov Pad Fl	,	5.0 feet		Heav	y Trucks:	8.006	Grade Ad	justment:	0.0			
Road El		0.0 feet	-	Lane Eau	uivalent D	istance (ir	i feet)					
		0.0%	-		Autos:	75,928	,					
l e		0.0 degrees		Mediur	n Trucks:	75.811						
		0.0 degrees		Heav	y Trucks:	75.822						
FHWA Noise Model Ca	lculations											
VehicleType R	EMEL Tra	ffic Flow Di	stance	Finite	Road	Fresnel	Barrier Att	en Berr	n Atten			
Autos:	58.73	2.94	-1.8	-	0.00	-0.9		000	0.00			
Medium Trucks:	70.80	-14.30	-1.8	-	0.00	-1.1		000	0.00			
Heavy Trucks:	77.97	-18.26	-1.8	8	0.00	-1.5	7 0.0	000	0.00			
Unmitigated Noise Lev	els (without 1	Topo and barri	ier atter	nuation)								
	Peak Hour	Leq Day	Leq E	vening	Leq Ni		Ldn	CN				
Autos:	59.8	57.9		56.1		50.1	58.		59.3			
Medium Trucks:	54.6	53.1		46.7		45.2	53.		53.9			
Heavy Trucks:	57.8	56.4		47.4		48.6	57.0	-	57.			
Vehicle Noise:	62.7	61.0		57.1		53.2	61.	7	62.			
Centerline Distance to	Noise Contor	ur (in feet)						1				
		l		dBA	65 dB	A	60 dBA	55 0				
		Ldn:		11	35		112	35				
		CNEL:	1	12	39		122	38	37			

		A-RD-77-108 I	IIGHW	AY NO	DISE PR	EDICTIO	ON MOI	DEL					
Road Name	o: Future With e: Hooper Av. ht: n/o Vernon	,			Project Name: Parkview Job Number: 12620								
SITE S	SPECIFIC IN	PUT DATA				N	DISE N	IODE	L INPUT	s			
Highway Data				S	ite Conc	litions (	Hard =	10, Sc	oft = 15)				
Average Daily 1	Traffic (Adt): 1	6,230 vehicles						Autos:	10				
Peak Hour I	Percentage:	10%			Med	lium Tru	cks (2 A	xles):	10				
Peak He	our Volume:	1,623 vehicles			Hea	vy Truci	ks (3+ A	xles):	10				
Veh	hicle Speed:	25 mph		V	ehicle M	liv							
Near/Far Lar	ne Distance:	12 feet		V		leTvpe	1	Dav	Evening	Night	Dailv		
Site Data					Venne			77.5%			97.42		
				_	Mo	dium Tru		84.8%		10.3%			
	rier Height:	0.0 feet				eavy Tru		86.5%		10.3 %			
Barrier Type (0-Wa		0.0				cuvy m	ions.	00.070	2.170	10.070	0.747		
Centerline Dis		66.0 feet		N	oise So	urce Ele	vations	s (in fe	et)				
Centerline Dist. t		76.0 feet				Autos	: 0.0	000					
Barrier Distance t		10.0 feet 5.0 feet			Medium	Trucks	: 2.2	297					
Observer Height (/	Above Pad): Id Elevation:			Heavy	Trucks	: 8.0	006	Grade Ad	ljustment	0.0			
		1	ane Equ	ivalont	Distanc	o (in i	foot)						
	d Elevation: Road Grade:	0.0 feet		-	апе сци	Autos			eel)				
F	l eft View:	0.0%			Madium	Trucks							
	Right View:	-90.0 degrees 90.0 degrees				Trucks							
FHWA Noise Mode	l Calculations												
VehicleType	REMEL	Traffic Flow	Distar	nce	Finite F	Road	Fresn	el	Barrier Att	en Ber	m Atter		
Autos:	58.73	2.70		-1.88		0.00		-0.99	0.0	000	0.00		
Medium Trucks:	70.80	-14.53		-1.88		0.00		-1.15	0.0	000	0.00		
Heavy Trucks:	77.97	-18.49		-1.88		0.00		-1.57	0.0	000	0.00		
Unmitigated Noise	Levels (witho	ut Topo and b	arrier a	attenu	ation)								
	Leq Peak Hou			eq Eve		Leq N			Ldn		VEL		
Autos:	59.		7.7		55.9		49.8		58.		59		
Medium Trucks:	54.		2.9		46.5		45.0		53.4		53.		
Heavy Trucks:	57.		6.2		47.1		48.4		56.	-	56.		
Vehicle Noise:	62.		0.8		56.9		52.9		61.4	4	61		
	e to Noise Co	ntour (in feet)		70 dl	DA I	65 d	DA	6	0 dBA	55	dBA		
Centerline Distanc													
Centerline Distanc		,	dn.	11		3/							
Centerline Distanc		L	dn: =ı ·	11 12		34 37			106 116		35 67		

Wednesday, August 14, 2019

C	iou Eutruro 14/24	out Droject				Drojant *	lomo -	Jorla -			
	io: Future With e: Hooper Av.					Project N Job Nu			ew		
	nt: s/o Vernon					300 140	nber.	2020			
-	SPECIFIC IN								L INPUT	s	
Highway Data				S	ite Con	ditions (F	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	14,770 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 A	(xles):	10		
Peak H	lour Volume:	1,477 vehicles			Hea	avy Truck	's (3+ A	(xles):	10		
Ve	hicle Speed:	25 mph		V	ehicle N	lix					
Near/Far La	ne Distance:	12 feet				cleType		Day	Evening	Night	Daily
Site Data								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-V		0.0			H	leavy Tru	cks:	86.5%	2.7%	10.8%	0.74
Centerline D	st. to Barrier:	66.0 feet		N	loise So	urce Ele	vations	s (in fe	et)		
Centerline Dist.	to Observer:	76.0 feet				Autos		000	.,		
Barrier Distance	to Observer:	10.0 feet			Mediur	n Trucks:		97			
Observer Height	· ,	5.0 feet			Heav	v Trucks:	8.0	006	Grade Ad	justment	: 0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equ	ivalent l			leet)		
	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degree				n Trucks:					
	Right View:	90.0 degree	s		Heav	y Trucks:	75.8	322			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresn	-	Barrier Att		m Atter
Autos:		2.30		-1.88		0.00		-0.99		000	0.0
Medium Trucks:		-14.94		-1.88		0.00		-1.15		000	0.0
Heavy Trucks:	77.97	-18.90		-1.88		0.00		-1.57	0.0	000	0.0
Unmitigated Nois											
VehicleType	Leq Peak Hou			.eq Eve	~	Leq N	<u> </u>		Ldn		NEL
Autos:	59		57.2		55.5		49.4		58.0		58
Medium Trucks:			52.5		46.1		44.6		53.0		53
Heavy Trucks:			55.8		46.7		48.0		56.3	-	56
	62	2.0 6	50.4		56.4		52.5		61.0	)	61
Vehicle Noise:		antour (in foot)									
Vehicle Noise: Centerline Distan	ce to Noise Co	mour (mileer)	1								
	ce to Noise Co	, , ,		70 di		65 di		L	60 dBA		dBA
	ce to Noise Co		_dn: IFL :	70 dl 10 11	)	65 di 31 33			96 106	3	05 34

	FHW	/A-RD-77-108 H	IIGHWA	Y NO	DISE PR	EDICT	ION MO	DEL			
Road Nam	o: Future With e: Compton Av at: s/o Adams B					Name: lumber:		W			
SITE S	SPECIFIC IN	PUT DATA				I	IOISE N	/ODE	L INPUT	s	
Highway Data				S	ite Cond	ditions	(Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	7,040 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Tr	ucks (2 /	Axles):	10		
Peak H	our Volume:	704 vehicles			Hea	avy Tru	cks (3+ /	Axles):	10		
Vel	hicle Speed:	25 mph		V	ehicle N	liv					
Near/Far Lar	ne Distance:	12 feet				leType		Day	Evening	Night	Daily
Site Data				_	Verne		Autos:	77.5%	12.9%	9.6%	
					Me	dium T		84.8%		10.3%	
Barrier Type (0-W	rier Height:	0.0 feet 0.0				leavy T		86.5%		10.8%	
Centerline Dis	. ,	66.0 feet									
Centerline Dist.		76.0 feet		N	oise So		evation		et)		
Barrier Distance		10.0 feet				Auto		000			
Observer Height (J		5.0 feet			Mediun	n Truck	s: 2.	297			
	d Elevation:	0.0 feet			Heavy	y Truck	s: 8.	006	Grade Ad	ljustmen	t: 0.0
	d Elevation: d Elevation:	0.0 feet			ane Fau	ivalen	Distan	e (in f	eet)		
	lu Elevalion. Road Grade:	0.0%		-	ino Equ	Auto		928	001)		
r	Left View:	-90.0 degrees			Mediun						
	Right View:	90.0 degrees				Y Truck					
FHWA Noise Mode	Calculations	;									
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite I	Road	Fresr	el	Barrier Att	en Be	rm Atten
Autos:	58.73	-0.92	-	1.88		0.00		-0.99	0.0	000	0.000
Medium Trucks:	70.80	-18.16	-	1.88		0.00		-1.15	0.0	000	0.000
Heavy Trucks:	77.97	-22.12	-	1.88		0.00		-1.57	0.0	000	0.000
Unmitigated Noise	Levels (witho										
	Leq Peak Hou			q Eve	ening	Leq	Night		Ldn		NEL
Autos:	55.		4.0		52.3		46.2		54.6		55.4
Medium Trucks:	50.	•	9.3		42.9		41.3		49.		50.0
Heavy Trucks:	54.	0 53	2.6		43.5		44.8	}	53.	1	53.3
Vehicle Noise:	58.	8 5	7.1		53.2		49.3	5	57.	В	58.2
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dl	54	67	dD A		0 dBA		: dDA
		,	dn:	70 al	м		dBA 5	6	0 dBA 46		5 dBA 145
		CNI		5			5		46 50		
		CIVI	=L:	э		1	0		50		159

Wednesday, August 14, 2019

Scenario: Future Without Project									
Road Name: Compton Av. Road Segment: s/o 41st St.		Vame: Parkview Imber: 12620							
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (	Hard = 10, Soft	= 15)						
Average Daily Traffic (Adt): 8,280 vehicles		Autos:	10						
Peak Hour Percentage: 10%	Medium Tru	cks (2 Axles):	10						
Peak Hour Volume: 828 vehicles	Heavy Truck	ks (3+ Axles):	10						
Vehicle Speed: 25 mph	Vehicle Mix								
Near/Far Lane Distance: 12 feet	VehicleType	Day E	vening Ni	ght Daily					
Site Data		utos: 77.5%	0,00	9.6% 97.42%					
Barrier Height: 0.0 feet	Medium Tru	ucks: 84.8%	4.9% 10	0.3% 1.84%					
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Tru	ucks: 86.5%	2.7% 10	0.8% 0.74%					
Centerline Dist. to Barrier: 66.0 feet	Noise Source Ele	vations (in feet	f)						
Centerline Dist. to Observer: 76.0 feet	Autos		9						
Barrier Distance to Observer: 10.0 feet	Medium Trucks								
Observer Height (Above Pad): 5.0 feet	Heavy Trucks		rade Adjusti	ment: 0.0					
Pad Elevation: 0.0 feet									
Road Elevation: 0.0 feet	Lane Equivalent		et)						
Road Grade: 0.0%	Autos.								
Left View: -90.0 degrees Right View: 90.0 degrees	Medium Trucks. Heavy Trucks								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dista	Finite Road	Fresnel Ba	arrier Atten	Berm Atten					
Autos: 58.73 -0.22	.88 0.00	-0.99	0.000	0.000					
Medium Trucks: 70.80 -17.46	.88 0.00	-1.15	0.000	0.000					
Heavy Trucks: 77.97 -21.41	.88 0.00	-1.57	0.000	0.00					
Unmitigated Noise Levels (without Topo and barrier	enuation)								
	Evening Leq N		dn	CNEL					
Autos: 56.6 54.7	53.0	46.9	55.5	56.					
Medium Trucks: 51.5 50.0	43.6	42.0	50.5	50.					
Heavy Trucks: 54.7 53.3	44.2	45.5	53.8	54.0					
Vehicle Noise: 59.5 57.8	53.9	50.0	58.5	58.					
Centerline Distance to Noise Contour (in feet)	) dBA 65 d	IBA 60	dBA	55 dBA					
Ldn:	5 17		dBA 54	55 dBA 171					
CNEL:	5 17 6 19	-	59 59	1/1					
Chet.	0 18	, 5	15	107					

	FHV	VA-RD-77-108 H	HIGHV	VAY NO	DISE PR	EDICTIC	N MO	DEL			
	: Future With : Compton A : s/o Vernon	v.				Project N Job Nu			ew.		
SITE S	PECIFIC IN	PUT DATA				NC	DISE N	/IODE	L INPUT	s	
Highway Data				S	ite Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily T	raffic (Adt): 1	12,850 vehicles						Autos:	10		
Peak Hour P	ercentage:	10%			Mee	dium Truc	:ks (2 A	(xles)	10		
Peak Ho	ur Volume:	1,285 vehicles			Hea	avy Truck	is (3+ A	(xles)	10		
Veh	icle Speed:	25 mph		V	ehicle N	lix					
Near/Far Lane	e Distance:	50 feet		-		cleTvpe		Dav	Evening	Night	Dailv
Site Data					10/11			77.5%			97.429
	ior Holebti	0.0 feet			Me	dium Tru		84.8%		10.3%	
Barrier Type (0-Wa	ier Height:	0.0 reet 0.0				leavy Tru		86.5%		10.8%	
Centerline Dist		80.0 feet				,					
Centerline Dist. to		90.0 feet		N	oise So	urce Ele			et)		
Barrier Distance to		10.0 feet				Autos:		000			
Observer Height (A		5.0 feet				n Trucks:		297			
	Flevation:	0.0 feet			Heav	y Trucks:	8.0	006	Grade Ad	justment	: 0.0
Road	Elevation:	0.0 feet		La	ane Equ	ivalent I	Distand	ce (in i	eet)		
R	oad Grade:	0.0%				Autos:	86.	603			
	Left View:	-90.0 degrees			Mediur	n Trucks:	86.	500			
	Right View:	90.0 degrees	6		Heav	y Trucks:	86.	510			
FHWA Noise Model	Calculation	5									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresn		Barrier At	en Ber	m Atten
Autos:	58.73	1.69		-2.45		0.00		-1.02	0.	000	0.00
Medium Trucks:	70.80	-15.55		-2.45		0.00		-1.15		000	0.00
Heavy Trucks:	77.97	-19.50		-2.45		0.00		-1.50	0.	000	0.00
Unmitigated Noise	Levels (with	out Topo and b	arrier	attenu	ation)						
	eq Peak Hou.			Leq Eve		Leq N			Ldn		VEL
Autos:	58		6.1		54.3		48.3		56.		57.
Medium Trucks:	52		1.3		44.9		43.4		51.		52.
Heavy Trucks:	56		4.6		45.6		46.8		55.		55.
Vehicle Noise:	60		9.2		55.3		51.4	ļ	59.	9	60.
Centerline Distance	to Noise Co	ontour (in feet)	-	70 /							10.4
		,		70 dE	5A	65 dl		e	0 dBA		dBA
		L	dn:	9		28			87		76
		CN		10		30			95		01

Wednesday, August 14, 2019

Sec	io: Future With	aut Draia-4				Droino! 1	lama: D-	elo de			
	ie: Long Beac					Project N	name: Pa mber: 12		/		
	nt: n/o 41st St					300 140	nber. 12	020			
÷											
	SPECIFIC IN	IPUT DATA							INPUTS		
Highway Data				3	site Con	ditions (F		·			
Average Daily	. ,		es					itos:	10		
	Percentage:	10%				dium Truc			10		
	lour Volume:	1,001 vehicl	es		Hea	avy Truck	's (3+ Ax	les):	10		
	hicle Speed:	35 mph		1	/ehicle N	<i>lix</i>				-	
Near/Far La	ne Distance:	72 feet			Vehi	cleType	Di	ay E	vening	Night	Daily
Site Data						AL	itos: 7	7.5%	12.9%	9.6%	97.42
Ba	rrier Heiaht:	0.0 feet			Me	edium Tru	cks: 84	4.8%	4.9%	10.3%	1.84
Barrier Type (0-W		0.0			F	łeavy Tru	cks: 86	6.5%	2.7%	10.8%	0.749
Centerline Di		110.0 feet		-	laine Ca	urce Ele	ations (	in foo	4)		
Centerline Dist.	to Observer:	120.0 feet		1	voise So	Autos:			t)		
Barrier Distance	to Observer:	10.0 feet				Autos: n Trucks:		-			
Observer Height	(Above Pad):	5.0 feet							irade Adju	internet	
P	ad Elevation:	0.0 feet			Heav	y Trucks:	8.00	0 0	naue Auju	istinent.	0.0
Ro	ad Elevation:	0.0 feet		1	ane Equ	ivalent I	Distance	(in fee	et)		
	Road Grade:	0.0%				Autos:	114.58	2			
	Left View:	-90.0 degr	ees		Mediur	n Trucks:	114.50	5			
	Right View:	90.0 degr	ees		Heav	y Trucks:	114.51	2			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresnel	Bi	arrier Atte	n Beri	m Atter
Autos:	64.30	-0.8	-	-3.67		0.00		.05	0.0		0.00
Medium Trucks:	75.75	-18.0	9	-3.67	7	0.00	-1	.15	0.0	00	0.00
Heavy Trucks:	81.57	-22.0	5	-3.67	7	0.00	-1	.40	0.0	00	0.00
Unmitigated Noise											
VehicleType	Leq Peak Ho		/	Leq E	~	Leq N	•	L	.dn		VEL
Autos:		9.8	57.9		56.1		50.1		58.7		59
Medium Trucks:		1.0	52.5		46.1		44.6		53.0		53
Heavy Trucks:		5.9	54.4		45.4		46.6		55.0		55
Vehicle Noise:	62	2.0	60.3		56.8		52.5		61.0		61
Centerline Distand	ce to Noise C	ontour (in fee	et)								
				70 c		65 di			dBA		dBA
			Ldn: CNFL:	1	-	48 53			51 66		76 26

	FHW	A-RD-77-108	HIGHW	AY NO	DISE PR	EDICTI	ON MOD	DEL			
	o: Future Witho e: Long Beach at: s/o 41st St.					Project I Job NL	Vame: F Imber: 1		ew		
SITE S	SPECIFIC INF	UT DATA				N	DISE N	IODE	L INPUT	S	
Highway Data				Si	ite Cond	litions (	Hard =	10, Sc	oft = 15)		
Average Daily	, ,		5					Autos:	10		
	Percentage:	10%				lium Tru					
		,168 vehicles	5		Hea	vy Truc	ks (3+ A	xles):	10		
	hicle Speed:	35 mph		Ve	ehicle M	lix					
Near/Far Lar	ne Distance:	72 feet			Vehic	leType	1	Day	Evening	Night	Daily
Site Data						A	utos:	77.5%	12.9%	9.6%	97.42%
Bar	rier Height:	0.0 feet			Me	dium Tri	ucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			н	eavy Tri	ucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	t. to Barrier:	110.0 feet		No	oise Sol	urce Ele	vations	in fe	et)		
Centerline Dist.	to Observer:	120.0 feet				Autos					
Barrier Distance	to Observer:	10.0 feet			Medium	Trucks					
Observer Height (J	Above Pad):	5.0 feet				/ Trucks			Grade Ad	iustment	.00
Pa	d Elevation:	0.0 feet							-		
Roa	d Elevation:	0.0 feet		La	ane Equ	ivalent	Distanc	e (in i	feet)		
F	Road Grade:	0.0%				Autos	: 114.5	582			
	Left View:	-90.0 degree	s		Medium	n Trucks	: 114.5	505			
	Right View:	90.0 degree	s		Heavy	/ Trucks	: 114.5	512			
FHWA Noise Mode	Calculations										
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite F	Dood		. 1			
vonioio i ypo					1 11 11 10 1	toau	Fresn	e/	Barrier Att	en Ber	m Atten
Autos:	64.30	-0.19		-3.67	1 11110 1	0.00		e/ -1.05	Barrier Atte 0.0		<i>m Atten</i> 0.000
		-0.19 -17.42			7 11110 1					000	0.000
Autos:	64.30			-3.67		0.00		1.05	0.0 0.0	000	0.000
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	64.30 75.75 81.57 Levels (without	-17.42 -21.38 ut Topo and	barrier a	-3.67 -3.67 -3.67	ation)	0.00 0.00 0.00		1.05 1.15	0.0 0.0 0.0	000 000 000	0.000 0.000 0.000
Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	64.30 75.75 81.57 Levels (without Leg Peak Hour	-17.42 -21.38 <b>It Topo and</b> Leq Day	barrier a	-3.67 -3.67 -3.67	ation)	0.00 0.00	light	1.05 1.15	0.0 0.0 0.0	000 000 000 <i>Cl</i>	0.000 0.000 0.000 VEL
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	64.30 75.75 81.57 Levels (without Leq Peak Hour 60.4	-17.42 -21.38 It Topo and Leq Day	barrier a	-3.67 -3.67 -3.67	ation) ening 56.8	0.00 0.00 0.00	light 50.7	-1.05 -1.15 -1.40	0.0 0.0 0.0 <i>Ldn</i> 59.3	000 000 000 <i>CI</i>	0.000 0.000 0.000 VEL 60.0
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	64.30 75.75 81.57 Levels (withou Leq Peak Hour 60.4 54.7	-17.42 -21.38 It Topo and I Leq Day	<b>barrier a</b> Le 58.5 53.2	-3.67 -3.67 -3.67	ation) ening 56.8 46.8	0.00 0.00 0.00	<i>light</i> 50.7 45.2	-1.05 -1.15 -1.40	0.0 0.0 0.0 <i>Ldn</i> 59.3 53.7	000 000 000 <i>CI</i> 3	0.000 0.000 0.000 VEL 60.0 53.9
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	64.30 75.75 81.57 Levels (withou Leq Peak Hour 60.4 54.7 56.5	-17.42 -21.38 It Topo and Leq Day	barrier a Le 58.5 53.2 55.1	-3.67 -3.67 -3.67	ation) ening 56.8 46.8 46.1	0.00 0.00 0.00	<i>light</i> 50.7 45.2 47.3	-1.05 -1.15 -1.40	0.0 0.0 0.0 <i>Ldn</i> 59.3 53.7 55.7	000 000 000 C/	0.000 0.000 0.000 <u>VEL</u> 60.0 53.9 55.8
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	64.30 75.75 81.57 Levels (withou Leq Peak Hour 60.4 54.7	-17.42 -21.38 It Topo and Leq Day	<b>barrier a</b> Le 58.5 53.2	-3.67 -3.67 -3.67	ation) ening 56.8 46.8	0.00 0.00 0.00	<i>light</i> 50.7 45.2	-1.05 -1.15 -1.40	0.0 0.0 0.0 <i>Ldn</i> 59.3 53.7	000 000 000 C/	0.000 0.000 0.000 VEL
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks:	64.30 75.75 81.57 Levels (withou Leq Peak Hour 60.4 54.7 56.5 62.7	-17.42 -21.38 Leq Day	barrier a 58.5 53.2 55.1 61.0	-3.67 -3.67 -3.67 attenua	ation) ening 56.8 46.8 46.1 57.5	0.00 0.00 0.00	<i>light</i> 50.7 45.2 47.3 53.1	-1.05 -1.15 -1.40	0.0 0.0 <i>Ldn</i> 59.3 53.7 55.7 61.7	000 000 000 200 200 200 200 200 200 200	0.000 0.000 0.000 VEL 60.0 53.9 55.8 62.1
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	64.30 75.75 81.57 Levels (withou Leq Peak Hour 60.4 54.7 56.5 62.7	-17.42 -21.38 <i>It Topo and it</i> <i>Leq Day</i>	barrier a Le 58.5 53.2 55.1 61.0	-3.67 -3.67 -3.67 -3.67 <i>ttenua</i> <i>q Eve</i>	ation) ening 56.8 46.8 46.1 57.5	0.00 0.00 0.00 Leq N	<i>light</i> 50.7 45.2 47.3 53.1 <i>BA</i>	-1.05 -1.15 -1.40	0.0 0.0 0.0 59.3 53.7 55.7 61.7 60 dBA	000 000 000 7 7 7 7 7 7 7 7 7 7 7 7	0.000 0.000 0.000 VEL 60.0 53.9 55.8 62.1 dBA
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	64.30 75.75 81.57 Levels (withou Leq Peak Hour 60.4 54.7 56.5 62.7	-17.42 -21.38 It Topo and I Leq Day	barrier a 58.5 53.2 55.1 61.0	-3.67 -3.67 -3.67 attenua	ation) ening 56.8 46.8 46.1 57.5	0.00 0.00 0.00	light 50.7 45.2 47.3 53.1 BA	-1.05 -1.15 -1.40	0.0 0.0 <i>Ldn</i> 59.3 53.7 55.7 61.7	000 000 000 7 7 7 7 7 7 7 7 7 7 7 7 7 7	0.000 0.000 0.000 VEL 60.0 53.9 55.8 62.1

Wednesday, August 14, 2019

Fł	IWA-RD-77-108 HI	IGHWAY	NOISE PR	EDICTION	MODEL			
Scenario: Future Wi Road Name: 41st St. Road Segment: e/o Centra					me: Parkvi ber: 12620	ew		
SITE SPECIFIC I	NPUT DATA			NO	SE MODE	L INPUTS	5	
Highway Data			Site Con	ditions (Ha	rd = 10, So	oft = 15)		
Average Daily Traffic (Adt):	8,060 vehicles				Autos:	10		
Peak Hour Percentage:	10%		Med	dium Truck	s (2 Axles):	10		
Peak Hour Volume:	806 vehicles		Hea	avy Trucks	(3+ Axles):	10		
Vehicle Speed:	25 mph		Vehicle N	lix				
Near/Far Lane Distance:	12 feet		Vehi	cleType	Day	Evening	Night [	Daily
Site Data				Auto	os: 77.5%	12.9%	9.6% 9	7.429
Barrier Height:	0.0 feet		Me	dium Truck	ks: 84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm):	0.0		H	leavy Truck	ks: 86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier:	66.0 feet		Noise So	urce Eleva	tions (in f	eet)		
Centerline Dist. to Observer:	76.0 feet			Autos:	0.000			
Barrier Distance to Observer:	10.0 feet		Mediun	n Trucks:	2.297			
Observer Height (Above Pad):	5.0 feet		Heav	y Trucks:	8.006	Grade Adj	ustment: 0.	.0
Pad Elevation:	0.0 feet		Long Equ	ivalent Di	tonoo (in	fa a 4)		
Road Elevation: Road Grade:	0.0 feet		Lane Equ	Autos:	75.928	ieel)		
Road Grade: Left View:	0.0% -90.0 degrees		Modiur	n Trucks:	75.811			
Right View:	90.0 degrees			y Trucks:	75.822			
FHWA Noise Model Calculatio	ns							
VehicleType REMEL	Traffic Flow	Distance	Finite	Road F	resnel	Barrier Atte	en Berm	Atten
Autos: 58.7	3 -0.33	-1.8	88	0.00	-0.99	0.0	00	0.00
Medium Trucks: 70.8	0 -17.57	-1.4	88	0.00	-1.15	0.0	00	0.00
Heavy Trucks: 77.9	7 -21.53	-1.8	88	0.00	-1.57	0.0	00	0.00
Unmitigated Noise Levels (wit	hout Topo and ba	rrier atte	nuation)					
VehicleType Leq Peak He			Evening	Leq Nig		Ldn	CNE	
	6.5 54		52.9		46.8	55.4		56.
	1.3 49		43.5		41.9	50.4		50.
	4.6 53		44.1		45.4	53.7		53.
	i9.4 57	.7	53.8		49.9	58.4		58.
Centerline Distance to Noise	Contour (in feet)	70	dBA	65 dB/		60 dBA	55 dB	24
	1 d		dBA 5	65 dBA 17		53	55 dB 167	
	La CNE		5 6	17		53 58	167	
	CNE	L.	0	10		30	102	

	FHV	VA-RD-77-108 H	HIGHW	AY NO	DISE PR	EDICTIO	N MOI	DEL			
Road Nam	o: Future With e: 41st St. nt: e/o Hooper	,				Project N Job Nui			ew .		
SITE	SPECIFIC IN	PUT DATA				NC	ISE N	IODE	L INPUT	s	
Highway Data				S	ite Cond	ditions (H	lard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	9,170 vehicles					,	Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Truc	ks (2 A	xles):	10		
Peak H	our Volume:	917 vehicles			Hea	avy Truck	s (3+ A	(xles):	10		
Ve	hicle Speed:	25 mph		V	ehicle N	liv					
Near/Far La	ne Distance:	12 feet		-		cleTvpe		Dav	Evening	Night	Dailv
Site Data					10111			77.5%			97.42
	vier Height	0.0 feet			Me	dium Tru		84.8%		10.3%	
Barrier Type (0-W	rier Height:	0.0 feet 0.0				leavy Tru		86.5%		10.8%	
Centerline Dis		66.0 feet				,					
Centerline Dist.		76.0 feet		N	oise So	urce Elev			et)		
Barrier Distance		10.0 feet				Autos:		000			
Observer Height (		5.0 feet				n Trucks:		297			
	d Flevation:	0.0 feet			Heav	y Trucks:	8.0	006	Grade Ad	ljustment	: 0.0
	d Elevation:	0.0 feet		Li	ane Equ	ivalent D	Distand	e (in f	eet)		
	Road Grade:	0.0%			,	Autos:	75.9	928	,		
	Left View:	-90.0 degrees			Mediun	n Trucks:	75.8	311			
	Right View:	90.0 degrees			Heav	y Trucks:	75.8	322			
FHWA Noise Mode	Calculation:	5									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite I	Road	Fresn	el	Barrier At	ten Ber	m Atter
Autos:	58.73	0.23		-1.88		0.00		-0.99	0.	000	0.00
Medium Trucks:	70.80	-17.01		-1.88		0.00		-1.15	0.	000	0.00
Heavy Trucks:	77.97	-20.97		-1.88		0.00		-1.57	0.	000	0.00
Unmitigated Noise	Levels (with	out Topo and b	arrier	attenu	ation)						
	Leq Peak Hou			eq Eve		Leq N			Ldn		VEL
Autos:	57		5.2		53.4		47.4		56.		56
Medium Trucks:	51		0.4		44.0		42.5		51.		51
Heavy Trucks:	55		3.7		44.7		45.9		54.		54
Vehicle Noise:	60		8.3		54.4		50.5		59.	0	59
Centerline Distanc	e to Noise Co	ntour (in feet)		70 "	24	05 "	24	_			-/D 4
				70 dl	BA	65 dE	3A	6	i0 dBA		dBA
			dn: EL:	6 7		19 21			60 66		89 07

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: Future Without Project Road Name: 41st St. Project Name: Parkview Job Number: 12620 Road Segment: w/o Long Beach Av. SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Autos: 10 Average Daily Traffic (Adt): 9,310 vehicles Peak Hour Percentage: 10% Medium Trucks (2 Axles): 10 Peak Hour Volume: 931 vehicles Heavy Trucks (3+ Axles): 10 Vehicle Speed: 25 mph Vehicle Mix pe Day Evening Night Daily Autos: 77.5% 12.9% 9.6% 97.42% Near/Far Lane Distance: 12 feet VehicleType 9.6% 97.42% Site Data Medium Trucks: 84.8% 4.9% 10.3% 1.84% Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 0.74% Centerline Dist. to Barrier: Centerline Dist. to Observer: 66.0 feet Noise Source Elevations (in feet) 76.0 feet 0.000 Autos: Barrier Distance to Observer: Observer Height (Above Pad): 10.0 feet Medium Trucks: 2.297 5.0 feet Heavy Trucks: 8.006 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: Medium Trucks: Road Grade: 0.0% 75.928 75.811 Left View: -90.0 degrees Right View: 90.0 degrees Heavy Trucks: 75.822 FHWA Noise Model Calculations VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten -0.99 0.000 0.00 58.73 Autos 0.29 -1.88 0.00 0.000 Medium Trucks: 70.80 -16.95 0.00 -1.15 0.000 0.000 -1.88 Heavy Trucks: 77.97 -20.90 -1.88 0.00 -1.57 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) 
 VehicleType
 Leq Peak Hour
 Leq Day
 Leq Evening

 Autos:
 57.1
 55.2
 53.5
 Leq Night 47.4 Ldn CNEL 56.0 Medium Trucks: 52.0 50.5 44.1 42.6 51.0 44.7 Heavy Trucks: 55.2 53.8 46.0 54.3 Vehicle Noise: 58.4 54.4 60.0 50.5 59.0 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 6 7 19 21 61 192

CNEL:

	FHV	VA-RD-77-108	HIGHW	AY NO	DISE PRI	EDICTI	ON MC	DEL					
Road Nam	io: Future With e: 41st St. nt: e/o Long Be			Project Name: Parkview Job Number: 12620									
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	s			
Highway Data				S	ite Cond	litions	(Hard =	= 10, So	oft = 15)				
Average Daily	Traffic (Adt):	7,640 vehicles						Autos:	10				
Peak Hour	Percentage:	10%			Med	ium Tru	icks (2	Axles):	10				
Peak H	our Volume:	764 vehicles			Hea	vy Truc	cks (3+	Axles):	10				
Ve	hicle Speed:	25 mph		14	ehicle M								
Near/Far La	ne Distance:	12 feet		-		leType		Day	Evening	Night	Daily		
Site Data					101110		lutos:	77.5%	<b>v</b>	9.6%			
		0.0 feet			Med	, dium Ti		84.8%		10.3%			
ваг Barrier Type (0-W	rrier Height:	0.0 feet 0.0				eavy Tr		86.5%		10.8%			
Centerline Dis	. ,	66.0 feet											
Centerline Dist.		76.0 feet		N	oise Sou				eet)				
Barrier Distance		10.0 feet				Autos		.000					
Observer Height (		5.0 feet			Medium			.297					
	ad Flevation:	0.0 feet			Heavy	Trucks	s: 8	.006	Grade Ad	justment	: 0.0		
	ad Elevation:	0.0 feet		La	ane Equi	ivalent	Distan	ce (in	feet)				
	Road Grade:	0.0%				Autos	s: 75	.928					
	Left View:	-90.0 degree	5		Medium	Truck	s: 75	.811					
	Right View:	90.0 degree			Heavy	Truck	s: 75	.822					
FHWA Noise Mode	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite F	Road	Fres	nel	Barrier Att	en Ber	m Atten		
Autos:	58.73	-0.57		-1.88		0.00		-0.99	0.0	000	0.000		
Medium Trucks:	70.80	-17.81		-1.88		0.00		-1.15	0.0	000	0.000		
Heavy Trucks:	77.97	-21.76		-1.88		0.00		-1.57	0.0	000	0.000		
Unmitigated Noise	e Levels (with		arrier a	ttenu	ation)								
,1	Leq Peak Hou			eq Eve		Leq	Night		Ldn		NEL		
Autos:	56		4.4		52.6		46.		55.3		55.8		
Medium Trucks:	51		9.6		43.2		41.		50.3		50.4		
Heavy Trucks:	54	-	2.9		43.9		45.		53.		53.6		
Vehicle Noise:	59		7.5		53.6		49.	7	58.3	2	58.6		
Centerline Distance	e to Noise Co	ontour (in feet)	-				10.4						
				70 dE	BA		dBA	1 6	60 dBA		dBA		
			dn:	5		1	6		50	1	58		
			EL:	5			7		55		73		

EUWA PD 77 100 LICHWAY NOISE PREDICTION MODE

Wednesday, August 14, 2019

Wednesday, August 14, 2019

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56.7

51.3

54.5

59.4

210

67

	FHWA-	RD-77-108 HIG	HWAY N	IOISE PR	EDICTION	MODEL							
Scenario: I Road Name: ( Road Segment: r		oject				ame: Parkv ber: 12620							
	ECIFIC INPU	T DATA		NOISE MODEL INPUTS									
Highway Data				Site Conc	litions (Ha	ard = 10, S	oft = 15)						
Average Daily Tra	ffic (Adt): 20,3	40 vehicles				Autos							
Peak Hour Per	0	10%				s (2 Axles)							
Peak Hour		34 vehicles		Hea	avy Trucks	(3+ Axles)	: 10						
		35 mph		Vehicle M	lix								
Near/Far Lane I	Distance:	50 feet		Vehic	cleType	Day	Evening	Night Dai					
Site Data					Aut	os: 77.5	% 12.9%	9.6% 97.4					
Barrie	r Height:	0.0 feet			dium Truc			10.3% 1.8					
Barrier Type (0-Wall,	1-Berm):	0.0		Н	leavy Truc	ks: 86.5	% 2.7%	10.8% 0.7					
Centerline Dist. to	o Barrier: 8	30.0 feet		Noise So	urce Eleva	ations (in i	feet)						
Centerline Dist. to C		90.0 feet	Ē		Autos:	0.000							
Barrier Distance to C		10.0 feet		Mediun	1 Trucks:	2.297							
Observer Height (Abo	,	5.0 feet		Heavy	/ Trucks:	8.006	Grade Adj	ustment: 0.0					
	levation:	0.0 feet	-	·	lucia de la contenida de la	stance (in	6						
	Elevation: ad Grade:	0.0 feet	- H	Lane Equ	Autos:	86.603	leel)						
		0.0% 0.0 dearees		Modium	n Trucks:	86.500							
		90.0 degrees 90.0 degrees			/ Trucks:	86.510							
FHWA Noise Model C	alculations												
VehicleType I	REMEL Tr		stance	Finite F	Road	Fresnel	Barrier Atte	en Berm Atte					
Autos:	64.30	2.22	-2.4	-	0.00	-1.02							
Medium Trucks:	75.75	-15.01	-2.4	-	0.00	-1.15							
Heavy Trucks:	81.57	-18.97	-2.4	-	0.00	-1.50	0.0	00 0.0					
Unmitigated Noise Le				/				01/5/					
VehicleType Lee Autos:	q Peak Hour 64.1	Leq Day 62.2	Leq E	vening 60.4	Leq Nig	54.4	Ldn 63.0	CNEL					
Medium Trucks:	58.3	56.8		50.4		54.4 48.9	57.3	-					
Heavy Trucks:	50.5 60.1	58.7		49.7		40.9 50.9	59.3	-					
Vehicle Noise:	66.3	64.6		61.1		56.8	65.3						
Centerline Distance to	o Noise Conto	our (in feet)											
			70 (	dBA	65 dB/	4	60 dBA	55 dBA					
		Ldn:	3	0	96		304	960					

FH	WA-RD-77-108 HIC	GHWAY	NOISE PR	EDICTION	MODEL			
Scenario: Future Wit				Project Na				
Road Name: Central Av				Job Numi	ber: 1262	:0		
Road Segment: s/o 41st S	i.							
SITE SPECIFIC I	NPUT DATA					EL INPUT	'S	
Highway Data			Site Cond	ditions (Ha	rd = 10,	Soft = 15)		
Average Daily Traffic (Adt):	19,620 vehicles				Auto			
Peak Hour Percentage:	10%			dium Trucks		,		
Peak Hour Volume:	1,962 vehicles		Hea	avy Trucks	(3+ Axles	s): 10		
Vehicle Speed:	35 mph	ľ	Vehicle N	lix				
Near/Far Lane Distance:	50 feet		Vehi	cleType	Day	Evening	Night	Daily
Site Data				Auto	s: 77.5	% 12.9%	9.6%	97.42
Barrier Height:	0.0 feet		Me	dium Truck	(s: 84.8	% 4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-Berm):	0.0		h	leavy Truck	s: 86.5	% 2.7%	10.8%	0.749
Centerline Dist. to Barrier:	80.0 feet	-	N-/ 0-	urce Eleva	41 (1	6		
Centerline Dist. to Observer:	90.0 feet	-	Noise So			reet)		
Barrier Distance to Observer:	10.0 feet		Ma di un	Autos: n Trucks:	0.000			
Observer Height (Above Pad):	5.0 feet			v Trucks:	8.006	Grade Ad	liustmont	
Pad Elevation:	0.0 feet		neav,	y muchs.	0.000	0/000/10	ijaoanom	. 0.0
Road Elevation:	0.0 feet		Lane Equ	ivalent Dis	stance (i	n feet)		
Road Grade:	0.0%			Autos:	86.603			
Left View:	-90.0 degrees			n Trucks:	86.500			
Right View:	90.0 degrees		Heav	y Trucks:	86.510			
FHWA Noise Model Calculation	-							
VehicleType REMEL		Distance	Finite I		resnel	Barrier At		m Atter
Autos: 64.30		-2.4		0.00	-1.0		000	0.00
Medium Trucks: 75.75		-2.4		0.00	-1.1		000	0.00
Heavy Trucks: 81.5		-2.4		0.00	-1.5	υ 0.	000	0.00
Unmitigated Noise Levels (with		1	<u> </u>					
VehicleType Leq Peak Ho			vening	Leq Nigi		Ldn		NEL
	3.9 62.0		60.2		54.2	62.		63
	8.1 56.0 0.0 58.0	-	50.3 49.5		48.7 50.8	57. 59.		57 59
	6.1 64.4	1	61.0		56.6	65.	.1	65
Centerline Distance to Noise C	contour (in feet)	70	dBA	ee dD/		60 dB4	55	dD A
	Ldn		dBA 29	65 dBA 93		60 dBA 293		dBA 126
		. 4				233	5	20

	FHW	A-RD-77-108 H	IGHWA	Y NOISE PI	REDICTIO	MODEL			
Scenari	o: Future With P	Project				ame: Parkv			
	e: Central Av.				Job Nun	nber: 12620	)		
Road Segmer	nt: s/o Vernon A	V.							
	SPECIFIC INF	UT DATA				ISE MODE		s	
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)		
Average Daily	Traffic (Adt): 18	3,520 vehicles				Autos			
Peak Hour	Percentage:	10%		Me	dium Truci	ks (2 Axles)	: 10		
Peak H	our Volume: 1	,852 vehicles		He	avy Trucks	; (3+ Axles)	: 10		
Vei	hicle Speed:	35 mph		Vehicle	Mix				
Near/Far La	ne Distance:	50 feet			icleType	Day	Evening	Night	Daily
Site Data						os: 77.59	· ·	9.6%	
D	rier Heiaht:	0.0 feet		M	edium Truc	ks: 84.89	6 4.9%	10.3%	1.84
Barrier Type (0-W		0.0 teet			Heavy Truc	ks: 86.5%	6 2.7%	10.8%	0.74
Centerline Dis	. ,	80.0 feet							
Centerline Dist.		90.0 feet		Noise So		ations (in f	eet)		
Barrier Distance		10.0 feet			Autos:	0.000			
Observer Height (		5.0 feet			m Trucks:	2.297			
0 (	d Flevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Ad	justment:	0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent D	istance (in	feet)		
F	Road Grade:	0.0%			Autos:	86.603			
	Left View:	-90.0 degrees		Mediu	m Trucks:	86.500			
	Right View:	90.0 degrees		Heav	y Trucks:	86.510			
	-								
FHWA Noise Mode		Traffic Flow	0.1	<b>E</b> 1		Fresnel			
VehicleType Autos:	REMEL 64.30	1.82	Distand	2.45	Road 0.00	-1.02	Barrier Att	on Ben	m Atter 0.0
Medium Trucks:	75.75	-15.42		2.45	0.00	-1.15		000	0.0
Heavy Trucks:	81.57	-19.38		2.45	0.00	-1.50		000	0.0
					0.00	-1.00	0.	500	0.0
Unmitigated Noise				,					
VehicleType Autos:	Leq Peak Hour 63.7			q Evening 60.0	Leq Ni	53.9	Ldn 62		VEL 63
Medium Trucks:	57.9	• •		50.0		53.9 48.5	56	-	57
Heavy Trucks:	57.8			50.0 49.3		48.5 50.5	58.	-	57
Vehicle Noise:	65.9		.2	49.3		56.3	64.		65
Centerline Distanc				20.1			51.		50
Jointernine Distant	e to moise COI	nour (mileel)	-	70 dBA	65 dB	A	60 dBA	55	dBA
		Lo	in:	28	87		277		74

	FH	WA-RD-77-108	B HIGI	HWAY N	OISE PR	EDICTIC	ON MOI	DEL			
Road Nam	io: Future Wit e: Hooper Av nt: n/o 33rd S					Project N Job Nu			W		
SITE	SPECIFIC II	NPUT DATA								s	
Highway Data				s	ite Cond	ditions (F	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	15,760 vehicle	s				,	Autos:	10		
Peak Hour	Percentage:	10%			Med	dium Truc	cks (2 A	(xles):	10		
Peak H	lour Volume:	1,576 vehicle	s		Hea	avy Truck	(3+ A	(xles):	10		
Ve	hicle Speed:	25 mph		N.	ehicle N	liv					
Near/Far La	ne Distance:	12 feet		-		cleType		Day	Evening	Night	Daily
Site Data					vonie			77.5%	12.9%	9.6%	
Pa	rrier Heiaht:	0.0 feet			Me	dium Tru	icks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-W		0.0			Н	leavy Tru	icks:	86.5%	2.7%	10.8%	0.74%
Centerline Dis	st. to Barrier:	66.0 feet			loise So	urce Ele	vation	: (in fe	et)		
Centerline Dist.	to Observer:	76.0 feet			0.00 00.	Autos		000	01)		
Barrier Distance	to Observer:	10.0 feet			Mediun	n Trucks:		297			
Observer Height (	Above Pad):	5.0 feet				v Trucks:			Grade Ad	iustment	0.0
Pa	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		L	ane Equ	ivalent l			eet)		
1	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degre				n Trucks:					
	Right View:	90.0 degre	es		Heavy	Y Trucks:	75.8	322			
FHWA Noise Mode	el Calculatior	15		I							
VehicleType	REMEL	Traffic Flow	Di	stance	Finite I	Road	Fresn	el I	Barrier Att	en Ber	m Atten
Autos:	58.73	3 2.58		-1.88		0.00		-0.99	0.0	000	0.000
Medium Trucks:	70.80	-14.66		-1.88		0.00		-1.15	0.0	000	0.000
Heavy Trucks:	77.97	-18.62		-1.88		0.00		-1.57	0.0	000	0.000
Unmitigated Noise	e Levels (with	nout Topo and	barri	ier attenı	uation)						
	Leq Peak Ho			Leq Ev	•	Leq N	· ·		Ldn	-	NEL
Autos:		9.4	57.5		55.8		49.7		58.3		58.9
Medium Trucks:	-	4.3	52.8		46.4		44.8		53.3		53.5
Heavy Trucks:	-	7.5	56.1		47.0		48.3		56.6		56.8
Vehicle Noise:	6	2.3	60.6		56.7		52.8		61.3	3	61.7
Centerline Distance	ce to Noise C	ontour (in feet	t)								
			[	70 d		65 d		6	0 dBA		dBA
			Ldn:	10		33			103		26
		C	NEL:	11		36			113	3	56

Wednesday, August 14, 2019

Wednesday, August 14, 2019

FHWA-RD-77-108 HIGHWA	NOISE PREDICTION MODEL
Scenario: Future With Project Road Name: Hooper Av. Road Segment: n/o 41st St.	Project Name: Parkview Job Number: 12620
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 17,130 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 1.713 vehicles	Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10
Vehicle Speed: 25 mph	
Near/Far Lane Distance: 12 feet	Vehicle Mix
	VehicleType Day Evening Night Daily Autos: 77.5% 12.9% 9.6% 97.42%
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: 84.8% 4.9% 10.3% 1.64% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%
Centerline Dist. to Barrier: 66.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 76.0 feet	Autos: 0.000
Barrier Distance to Observer: 10.0 feet	Medium Trucks: 2,297
Observer Height (Above Pad): 5.0 feet 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: 75.928
Left View: -90.0 degrees	Medium Trucks: 75.811
Right View: 90.0 degrees	Heavy Trucks: 75.822
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distanc	e Finite Road Fresnel Barrier Atten Berm Atten
	.88 0.00 -0.99 0.000 0.00
	.88 0.00 -1.15 0.000 0.00
Heavy Trucks: 77.97 -18.25 -	.88 0.00 -1.57 0.000 0.00
Unmitigated Noise Levels (without Topo and barrier at	,
	Evening Leq Night Ldn CNEL
Autos: 59.8 57.9	56.1 50.1 58.7 59.
Medium Trucks: 54.6 53.1	46.8 45.2 53.7 53.4
Heavy Trucks: 57.8 56.4	47.4 48.6 57.0 57.
Vehicle Noise: 62.7 61.0	57.1 53.2 61.7 62.
Centerline Distance to Noise Contour (in feet)	
	0 dBA 65 dBA 60 dBA 55 dBA
Ldn: CNEL:	11 35 112 354 12 39 122 387

	FHV	VA-RD-77-108 I	HIGHW	AY NO	DISE PR	EDICTIC	ON MOI	DEL			
	io: Future With e: Hooper Av.	Project				Project N Job Nu			ew		
	nt: n/o Vernon	Av.				300 140	mber.	12020			
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	16,320 vehicles						Autos:	10		
Peak Hour	Percentage:	10%			Mee	dium Truc	cks (2 A	(xles):	10		
Peak H	lour Volume:	1,632 vehicles			Hea	avy Truck	(3+ A	(xles):	10		
Ve	hicle Speed:	25 mph		V	ehicle N	Nix					
Near/Far La	ne Distance:	12 feet		-		cleType		Day	Evening	Night	Daily
Site Data					1011			77.5%			97.429
		0.0 feet			Me	dium Tru		84.8%		10.3%	
ва Barrier Type (0-И	rrier Height:	0.0 reet 0.0				leavy Tru		86.5%		10.8%	
	ist. to Barrier:	0.0 66.0 feet									
Centerline Dist.		76.0 feet		N	oise So	urce Ele	vations	s (in fe	et)		
Barrier Distance		10.0 feet				Autos:		000			
Observer Height		5.0 feet				n Trucks:		297			
	ad Flevation:	0.0 feet			Heav	y Trucks:	8.0	006	Grade Ad	justment	: 0.0
	ad Elevation:	0.0 feet		Li	ane Equ	ivalent L	Distand	e (in i	eet)		
	Road Grade:	0.0%				Autos:	75.9	928	,		
	Left View:	-90.0 degrees			Mediur	n Trucks:	75.8	311			
	Right View:	90.0 degrees			Heav	y Trucks:	75.8	322			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	58.73	2.73		-1.88		0.00		-0.99	0.0	000	0.00
Medium Trucks:	70.80	-14.51		-1.88		0.00		-1.15	0.0	000	0.00
Heavy Trucks:	77.97	-18.47		-1.88		0.00		-1.57	0.0	000	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			.eq Eve		Leq N			Ldn		VEL
Autos:			7.7		55.9		49.9		58.		59.
Medium Trucks:			2.9		46.5		45.0		53.		53.
Heavy Trucks:			6.2		47.2		48.4		56.		56.
Vehicle Noise:			0.8		56.9		53.0		61.	5	61.
Centerline Distan	ce to Noise Co	ontour (in feet)		70 dl	24	65 dl	DA.	6	0 dBA	55	dBA
		1	.dn:	11		34			107		37
			EL:	12		37			117		69
		011		12							

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: Future With Project Road Name: Hooper Av. Project Name: Parkview Job Number: 12620 Road Segment: s/o Vernon Av SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Highway Data Site Conditions (Hard = 10, Soft = 15) Autos: Average Daily Traffic (Adt): 14,800 vehicles 10 Peak Hour Percentage: 10% Medium Trucks (2 Axles): 10 Peak Hour Volume: 1,480 vehicles Heavy Trucks (3+ Axles): 10 Vehicle Speed: 25 mph Vehicle Mix Near/Far Lane Distance: 12 feet pe Day Evening Night Daily Autos: 77.5% 12.9% 9.6% 97.42% VehicleType 9.6% 97.42% Site Data Medium Trucks: 84.8% 4.9% 10.3% 1.84% Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 86.5% 2.7% 10.8% 0.74% Centerline Dist. to Barrier: Centerline Dist. to Observer: 66.0 feet Noise Source Elevations (in feet) 76.0 feet 0.000 Autos: Barrier Distance to Observer: Observer Height (Above Pad): 10.0 feet Medium Trucks: 2.297 5.0 feet Heavy Trucks: 8.006 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: Medium Trucks: Road Grade: 0.0% 75.928 75.811 Left View: -90.0 degrees Right View: 90.0 degrees Heavy Trucks: 75.822 FHWA Noise Model Calculations VehicleType REMEL 
 Traffic Flow
 Distance
 Finite Road

 3
 2.30
 -1.88
 0.00
 Fresnel -0.99 Barrier Atten Berm Atten Autos 58.73 0.000 Medium Trucks: 70.80 -14.93 0.00 -1.15 0.000 0.000 -1.88 Heavy Trucks: 77.97 -18.89 -1.88 0.00 -1.57 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Leq Day Leq Evening 57.3 55.5 Leq Night 49.4 VehicleType Leq Peak Hour Ldn CNEL 58.1 58.7 Autos. 59.2 Medium Trucks: 54.0 52.5 46.1 44.6 53.0 53.3 46.7 Heavy Trucks: 57.2 55.8 48.0 56.4 56.5 Vehicle Noise: 56.5 52.5 61.4 62.0 60.4 61.0 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn. 10 11 31 33 97 306

CNEL:

	FHV	VA-RD-77-108	HIGHWA	AY NO	ISE PR	EDICTI	ON MOI	DEL					
Road Nan	io: Future With ne: Compton A nt: s/o Adams	v.		Project Name: Parkview Job Number: 12620									
SITE	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS									
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	7.170 vehicles					A	Autos:	10				
,	Percentage:	10%			Med	ium Tru	icks (2 A	xles):	10				
	lour Volume:	717 vehicles			Hea	vy Truc	ks (3+ A	xles):	10				
Ve	hicle Speed:	25 mph					•	<i>.</i>					
	ne Distance:	12 feet		ve	hicle M			D	E	Alimber	Delle		
011 0 1				_	venic	leType		Day	Evening	Night	Daily		
Site Data				_				77.5%	12.9%	9.6%			
	rrier Height:	0.0 feet				dium Tr		84.8%		10.3%	1.84%		
Barrier Type (0-W		0.0			H	eavy Tr	UCKS:	86.5%	2.7%	10.8%	0.74%		
Centerline Di		66.0 feet		No	ise Sou	ırce Ele	evations	; (in fe	et)				
Centerline Dist.		76.0 feet				Autos			,				
Barrier Distance to Observer: 10.0 feet					Medium Trucks: 2.297								
Observer Height (Above Pad): 5.0 feet					Heavy Trucks: 8.006 Grade Adjustment: 0.0								
	Pad Elevation: 0.0 feet												
	ad Elevation:	0.0 feet		La	ne Equ		Distanc		eet)				
	Road Grade:	0.0%				Autos							
	Left View:	-90.0 degree			Medium								
	Right View:	90.0 degree	s		Heavy	Trucks	: 75.8	322					
FHWA Noise Mod	el Calculations	5											
VehicleType	REMEL	Traffic Flow	Distan	се	Finite F	Road	Fresn	el	Barrier Atte	en Ber	m Atten		
Autos:	58.73	-0.84		-1.88		0.00		-0.99	0.0	00	0.000		
Medium Trucks:	70.80	-18.08		-1.88		0.00		-1.15	0.0	00	0.000		
Heavy Trucks:	77.97	-22.04		-1.88		0.00		-1.57	0.0	00	0.000		
Unmitigated Noise	e Levels (with	out Topo and	barrier a	ttenua	tion)								
			10	g Ever	ning	Leg I	Viaht		Ldn		VEL		
VehicleType	Leq Peak Hou	r Leq Day	LO	9 210	iiriy	Log /	ngin						
VehicleType Autos:	. 56	.0 .	54.1	9 210	52.3	2047	46.3		54.9				
VehicleType Autos: Medium Trucks:	56 50	.0 4	54.1 19.3	q 270	52.3 43.0	2097	46.3 41.4		49.9	)	50.1		
VehicleType Autos:	. 56	.0 4	54.1	9 210	52.3	2047	46.3			)	50.1		
VehicleType Autos: Medium Trucks:	56 50 54	.0 4 .8 4	54.1 19.3	<u>q 210</u>	52.3 43.0	2047	46.3 41.4		49.9	2	50.1 53.3		
VehicleType Autos: Medium Trucks: Heavy Trucks:	56 50 54 58	0 4 .8 4 .1 4 .9 4	54.1 49.3 52.6 57.2		52.3 43.0 43.6 53.3		46.3 41.4 44.9 49.4		49.9 53.2 57.9	) 2 )	50.1 53.3 58.3		
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	56 50 54 58	0 4 8 4 1 9 9 ntour (in feet)	54.1 19.3 52.6 57.2	70 dB	52.3 43.0 43.6 53.3	65 0	46.3 41.4 44.9 49.4		49.9 53.2 57.9 0 dBA	55	50.1 53.3 58.3 dBA		
VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	56 50 54 58	0 8 4 1 9 ntour (in feet)	54.1 49.3 52.6 57.2		52.3 43.0 43.6 53.3		46.3 41.4 44.9 49.4 <i>IBA</i> 5		49.9 53.2 57.9	55	55.5 50.1 53.3 58.3 dBA 48 62		

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334

	FHW	A-RD-77-108 HIG	HWAY I	NOISE PR	EDICTION	MODEL		
	o: Future With e: Compton Av at: s/o 41st St.					ime: Parkv iber: 12620		
SITE S	SPECIFIC INF	PUT DATA			NO	SE MODE	EL INPUTS	\$
Highway Data				Site Cond	ditions (Ha	ard = 10, S	oft = 15)	
Average Daily T Peak Hour I Back H	, ,	8,380 vehicles 10% 838 vehicles				Autos s (2 Axles) (3+ Axles)	: 10	
	hicle Speed:	25 mph		пеа	ivy mucks	(3+ Axies)	. 10	
Near/Far Lar		12 feet	-	Vehicle N Vehic	lix cleType	Dav	Evening	Night Daily
Site Data					Aut	os: 77.5%	6 12.9%	9.6% 97.42
Bar Barrier Type (0-Wa	rier Height: all. 1-Berm):	0.0 feet			dium Truc leavy Truc			10.3% 1.84 10.8% 0.74
Centerline Dis		66.0 feet	-	N-1 0-		- 41	41	
Centerline Dist. t Barrier Distance t Observer Height (/	o Observer:	76.0 feet 10.0 feet 5.0 feet	=	Mediun	Autos: Autos: n Trucks: y Trucks:	ations (in 1 0.000 2.297 8.006		ustment: 0.0
	d Elevation: d Elevation:	0.0 feet	-	Lano Equ	uvalont Di	stance (in	foot)	
	la Elevation: Road Grade:	0.0 feet 0.0%	-	сапе суч	Autos:	75.928	leel)	
1	Left View: Right View:	-90.0 degrees 90.0 degrees			η Trucks: γ Trucks:	75.811 75.822		
FHWA Noise Mode	Calculations							
VehicleType	REMEL	Traffic Flow D	istance	Finite I	Road	Fresnel	Barrier Atte	en Berm Atter
Autos:	58.73	-0.17	-1.8	8	0.00	-0.99	0.0	0.0
Medium Trucks:	70.80	-17.40	-1.8	8	0.00	-1.15	0.0	0.0
Heavy Trucks:	77.97	-21.36	-1.8	8	0.00	-1.57	0.0	0.0
Unmitigated Noise	Levels (witho	ut Topo and barr	ier atter	nuation)				
	Leq Peak Hour			vening	Leq Nig		Ldn	CNEL
Autos:	56.7			53.0		47.0	55.6	
Medium Trucks:	51.5			43.6		42.1	50.6	
Heavy Trucks:	54.7			44.3		45.5	53.9	
Vehicle Noise:	59.6	5 57.9		54.0		50.1	58.6	59
Centerline Distanc	e to Noise Cor	ntour (in feet)						
				dBA	65 dB/	4	60 dBA	55 dBA
		Ldn:		5	17		55	173
		CNEL:		6	19		60	189

	FHV	/A-RD-77-108 I	HIGH\	NAY NO	DISE PR	EDICTIC	N MO	DEL					
Scenario: Road Name: Road Segment:		<i>i</i> .			Project Name: Parkview Job Number: 12620								
SITE SP	ECIFIC IN	PUT DATA			NOISE MODEL INPUTS								
Highway Data				S	ite Con	ditions (H	lard =	10, So	oft = 15)				
Average Daily Tra	affic (Adt): 1	2,910 vehicles						Autos:	10				
Peak Hour Pe	ercentage:	10%			Mee	dium Truc	:ks (2 /	Axles):	10				
Peak Hou	ir Volume:	1,291 vehicles			Hea	avy Truck	is (3+7	Axles):	10				
Vehic	le Speed:	25 mph		V	ehicle N	lix							
Near/Far Lane	Distance:	50 feet		-		cleTvpe		Dav	Evening	Night	Dailv		
Site Data					10/11		itos:	77.5%			97.429		
	ar Haimhti	0.0 feet			Me	dium Tru		84.8%		10.3%			
Barrier Type (0-Wall	er Height:	0.0 reet 0.0				leavy Tru		86.5%		10.8%			
Centerline Dist.		80.0 feet				,							
Centerline Dist. to		90.0 feet		N	oise So	urce Ele			eet)				
Barrier Distance to		10.0 feet				Autos:		000					
Observer Height (Ab		5.0 feet				n Trucks:		297					
Pad Elevation: 0.0 feet					Heav	y Trucks:	8.	006	Grade Ad	justment	: 0.0		
Road	Elevation:	0.0 feet		La	ane Equ	ivalent I	Distan	ce (in f	feet)				
Ro	ad Grade:	0.0%				Autos:	86.	603					
	Left View:	-90.0 degrees	3		Mediur	n Trucks:	86.	500					
R	light View:	90.0 degrees			Heav	y Trucks:	86.	510					
FHWA Noise Model	Calculations	5											
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite		Fresr	-	Barrier Att	en Ber	m Atten		
Autos:	58.73	1.71		-2.45		0.00		-1.02		000	0.00		
Medium Trucks:	70.80	-15.53		-2.45		0.00		-1.15		000	0.00		
Heavy Trucks:	77.97	-19.48		-2.45		0.00		-1.50	0.0	000	0.00		
Unmitigated Noise L			-										
	eq Peak Hou			Leq Eve		Leq N			Ldn		VEL		
Autos:	58.		6.1		54.3		48.3		56.9		57.		
Medium Trucks:	52.		1.3		44.9		43.4		51.		52.		
Heavy Trucks:	56.		4.6		45.6		46.8		55.3		55.		
Vehicle Noise:	60.		9.2		55.3		51.4	ļ	59.9	9	60.		
Centerline Distance	to Noise Co	ntour (in feet)	- 1	70 dE	24	65 dl	24		0 dBA		dBA		
		,	.dn:	70 at	0/4	28		6	88		ава 77		
		L	un:	9		28			00	2			
		~	EL:	10		30			96	0	03		

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Sconor	io: Future With	Project				Project N	lama <sup>,</sup> [	Parkvi	214/		
	ie: Long Beac					Job Nu			ew		
	nt: n/o 41st St.					000140	mbor.	2020			
Ŷ	SPECIFIC IN					NO					
Highway Data	SPECIFIC IN	FUIDAIA		S	ite Con	ditions (I				,	
Average Dailv	Traffic (Adt):	10,030 vehicles					,	Autos:	10		
Peak Hour	Percentage:	10%			Me	dium Truo	cks (2 A	(xles):	10		
Peak H	lour Volume:	1,003 vehicles			Hei	avy Truck	is (3+ A	xles):	10		
Ve	hicle Speed:	35 mph		V	ehicle N	Aiy.					
Near/Far La	ne Distance:	72 feet				cleType		Dav	Evening	Night	Daily
Site Data				-	VOIII			77.5%	· ·	9.6%	
					Me	dium Tri.		84.8%		10.3%	1.84
	rrier Height:	0.0 feet				leavy Tru		86.5%		10.8%	0.74
Barrier Type (0-W Centerline Di	. ,	0.0 110.0 feet								10.070	0.7 1
Centerline Dist.		120.0 feet		N	oise So	urce Ele	vations	s (in fe	eet)		
Barrier Distance		10.0 feet				Autos:	0.0	000			
Observer Height		5.0 feet			Mediur	n Trucks:	2.2	297			
	ad Flevation:	0.0 feet			Heav	y Trucks:	8.0	006	Grade Adj	ustment	0.0
	ad Elevation: ad Elevation:	0.0 feet		Li	ane Equ	ivalent l	Distand	e (in	feet)		
	au Elevaiion. Road Grade:	0.0%		_	ano Equ		114.				
	Left View:	-90.0 dearee			Modiur	n Trucks:					
	Right View:	90.0 degree				y Trucks:					
						-					
FHWA Noise Mod VehicleType	REMEL	s Traffic Flow	Distan	ce	Finite	Road	Fresn	el	Barrier Atte	n Ber	m Atter
Autos:	64.30	-0.85		-3.67		0.00		-1.05	0.0		0.00
Medium Trucks:	75.75	-18.08		-3.67		0.00		-1.15	0.0	00	0.00
Heavy Trucks:	81.57	-22.04		-3.67		0.00		-1.40	0.0	00	0.00
Unmitigated Noise	e Levels (with	out Topo and I	arrier a	ttenu	ation)						
VehicleType	Leq Peak Hou	Ir Leq Day	Le	q Eve	ening	Leq N	ight		Ldn	CI	VEL
Autos:	59	.8 5	7.9		56.1		50.1		58.7		59
Medium Trucks:	54	.0 5	2.5		46.1		44.6		53.0		53
Heavy Trucks:	55	.9 5	4.4		45.4		46.7		55.0		55
Vehicle Noise:	62	2.0 6	0.3		56.9		52.5		61.0		61
	ce to Noise Co	ontour (in feet)									
Centerline Distand			1	70 dł	RΔ	65 d	BA	6	60 dBA	55	dBA
Centerline Distand				10 02	54	00 0					
Centerline Distand		L	.dn:	15	1	48			151 167		77 27

	HWA-RD-77-	108 HIG	HWAY	NOISE PF	REDICTI						
<i>Scenario</i> : Future W <i>Road Name</i> : Long Bea <i>Road Segment</i> : s/o 41st S	ich Av.			Project Name: Parkview Job Number: 12620							
SITE SPECIFIC	INPUT DAT	A			N	OISE MO	DEL INPUT	'S			
Highway Data				Site Con	ditions (	Hard = 10,	Soft = 15)				
Average Daily Traffic (Adt):		icles				Aut					
Peak Hour Percentage:						cks (2 Axle	·				
Peak Hour Volume:	· ·			He	avy Truc	ks (3+ Axle	es): 10				
Vehicle Speed:				Vehicle I	Nix						
Near/Far Lane Distance:	72 feet			Vehi	icleType	Da	y Evening	Nigh	t Daily		
Site Data					A	utos: 77.	5% 12.9%	9.6	% 97.42%		
Barrier Height:	0.0 fee	et		Me	edium Tr	ucks: 84.	8% 4.9%	10.3	% 1.84%		
Barrier Type (0-Wall, 1-Berm):				ŀ	leavy Tr	ucks: 86.	5% 2.7%	10.8	% 0.74%		
Centerline Dist. to Barrier.		et		Noise So	ource Ele	evations (ii	n feet)				
Centerline Dist. to Observer.	120.0 fee	et			Autos		,				
Barrier Distance to Observer.	10.0 fee	et		Mediu	n Trucks						
Observer Height (Above Pad):	5.0 fee	et		Heav	v Trucks	8.006	Grade A	diustme	ent: 0.0		
Pad Elevation:	0.0 fee	et			,			.,			
Road Elevation:	0.0 fee	et		Lane Equ	uivalent	Distance (	in feet)				
Road Grade:	0.0%				Autos						
Left View:	-90.0 de	grees		Mediur	n Trucks	: 114.505					
Right View:	90.0 de	grees		Heav	y Trucks	: 114.512					
FHWA Noise Model Calculatio	ons										
FHWA Noise Model Calculation	Traffic Flo	w D	istance	Finite	Road	Fresnel	Barrier At	ten E	Berm Atten		
	Traffic Flo	.18	istance -3.6		<i>Road</i> 0.00	Fresnel -1.0		ten E	Berm Atten 0.000		
VehicleType REMEL	Traffic Flo			67			05 0.				
VehicleType REMEL Autos: 64.3	Traffic Flo           10         -0           75         -17	.18 .42	-3.6	67 67	0.00	-1.0	05 0. 15 0.	000	0.000		
VehicleType REMEL Autos: 64.3 Medium Trucks: 75.7 Heavy Trucks: 81.5 Unmitigated Noise Levels (wir	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         -0	.18 .42 .37	-3.6 -3.6 -3.6	67 67 67	0.00 0.00 0.00	-1.( -1. -1.	05 0. 15 0. 40 0.	.000 .000	0.000 0.000 0.000		
VehicleType REMEL Autos: 64.3. Medium Trucks: 75.7 Heavy Trucks: 81.5 Unmitigated Noise Levels (wh VehicleType Leq Peak H	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         our	.18 .42 .37 <b>nd barr</b> Day	-3.0 -3.0 -3.0 rier atte	67 67 67 <b>nuation)</b> Evening	0.00 0.00	-1.0 -1. -1.4	05 0. 15 0. 40 0. Ldn	.000 .000 .000	0.000 0.000 0.000 <i>CNEL</i>		
VehicleType REMEL Autos: 64.3 Medium Trucks: 75.7 Heavy Trucks: 81.5 Unmitigated Noise Levels (wii VehicleType Leq Peak H Autos: 4	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         Leq           60.5         -0	.18 .42 .37 <b>and barr</b> Day 58.6	-3.0 -3.0 -3.0 rier atter Leg E	67 67 67 <i>nuation)</i> Evening 56.8	0.00 0.00 0.00	-1.0 -1. -1 -1 Vight 50.7	05 0. 15 0. 40 0. Ldn 59	.000 .000 .000 .000	0.000 0.000 0.000 <i>CNEL</i> 60.0		
VehicleType REMEL Autos: 64.3. Medium Trucks: 75.7 Heavy Trucks: 81.5 Unmitigated Noise Levels (with VehicleType Leg Peak H Autos: 6 Medium Trucks: 9	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         our           00         Leq           60.5         54.7	.18 .42 .37 <b>Ind barr</b> Day 58.6 53.2	-3.6 -3.6 -3.6 rier atter Leq E	67 67 67 Evening 56.8 46.8	0.00 0.00 0.00	-1.( -1. -1 1 1 50.7 45.3	05 0. 15 0. 40 0. <u>Ldn</u> 59 53	.000 .000 .000 .000 .000	0.000 0.000 0.000 <i>CNEL</i> 60.0 53.9		
VehicleType REMEL Autos: 64.3. Medium Trucks: 75.7 Heavy Trucks: 81.5 Unmitigated Noise Levels (with VehicleType Leg Peak H Autos: 6 Medium Trucks: 9	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         Leq           60.5         -0	.18 .42 .37 <b>and barr</b> Day 58.6	-3.6 -3.6 -3.6 rier atter Leq E	67 67 67 <i>nuation)</i> Evening 56.8	0.00 0.00 0.00	-1.0 -1. -1 -1 Vight 50.7	05 0. 15 0. 40 0. Ldn 59	.000 .000 .000 .000 .000	0.000 0.000 0.000 <i>CNEL</i> 60.0		
VehicleType REMEL Autos: 64.3 Medium Trucks: 75.7 Heavy Trucks: 81.5 Unmitigated Noise Levels (wi VehicleType Leg Peak H Autos: 4 Medium Trucks: 9 Heavy Trucks: 9	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         our           00         Leq           60.5         54.7	.18 .42 .37 <b>Ind barr</b> Day 58.6 53.2	-3.6 -3.6 -3.6 Leq E	67 67 67 Evening 56.8 46.8	0.00 0.00 0.00	-1.( -1. -1 1 1 50.7 45.3	05 0. 15 0. 40 0. <u>Ldn</u> 59 53	000 000 000 4 7 7	0.000 0.000 0.000 <i>CNEL</i> 60.0 53.9		
VehicleType REMEL Autos: 64.3 Medium Trucks: 75.7 Heavy Trucks: 81.5 Unmitigated Noise Levels (wi VehicleType Leg Peak H Autos: 4 Medium Trucks: 9 Heavy Trucks: 9	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         10           60.5         54.7           56.5         52.7	.18 .42 .37 Day 58.6 53.2 55.1 61.0	-3.6 -3.6 rier atter Leg E	67 67 67 Evening 56.8 46.8 46.4 57.5	0.00 0.00 0.00	-1.0 -1. -1. -1 Vight 50.7 45.3 47.3 53.1	05 0. 15 0. 40 0. <u>Ldn</u> 59 53 55 61	000 000 000 4 7 7 7	0.000 0.000 0.000 <u>CNEL</u> 60.0 53.9 55.8 62.1		
Vehicle Type         REMEL           Autos:         64.3           Medium Trucks:         75.7           Heavy Trucks:         81.5           Unmitigated Noise Levels (will Vehicle Type         Leg Peak H           Autos:         Medium Trucks:           Heavy Trucks:         9           Heavy Trucks:         9           Vehicle Noise:         9	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         10           60.5         54.7           56.5         52.7	.18 .42 .37 md barr Day 58.6 53.2 55.1 61.0 Feet)	-3.6 -3.6 rier atter Leg E	67 67 67 Evening 56.8 46.8 46.1 57.5	0.00 0.00 0.00 Leq I	-1 -1. -1. -1 50.7 45.3 47.3 53.1	05 0. 15 0. 40 0. <i>Ldn</i> 59 53 55 61 60 dBA	000 000 000 4 7 7 7	0.000 0.000 0.000 <u>CNEL</u> 60.0 53.9 55.8 62.1		
Vehicle Type         REMEL           Autos:         64.3           Medium Trucks:         75.7           Heavy Trucks:         81.5           Unmitigated Noise Levels (will Vehicle Type         Leg Peak H           Autos:         Medium Trucks:           Heavy Trucks:         9           Heavy Trucks:         9           Vehicle Noise:         9	Traffic Flo           10         -0           15         -17           167         -21           thout Topo a         10           60.5         54.7           56.5         52.7	.18 .42 .37 Day 58.6 53.2 55.1 61.0	-3.6 -3.6 -3.6 -3.6 Leg E	67 67 67 Evening 56.8 46.8 46.4 57.5	0.00 0.00 0.00	-1.( -1. -1. -1. 50.7 45.3 47.3 53.1 IBA	05 0. 15 0. 40 0. <u>Ldn</u> 59 53 55 61	000 000 000 4 7 7 7	0.000 0.000 0.000 <u>CNEL</u> 60.0 53.9 55.8 62.1		

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AY NOISE PREDICTION MODEL
Project Name: Parkview
Job Number: 12620
NOISE MODEL INPUTS
Site Conditions (Hard = 10, Soft = 15)
Autos: 10
Medium Trucks (2 Axles): 10
Heavy Trucks (3+ Axles): 10
Vehicle Mix
VehicleType Day Evening Night Dai
Autos: 77.5% 12.9% 9.6% 97.4
Medium Trucks: 84.8% 4.9% 10.3% 1.8
Heavy Trucks: 86.5% 2.7% 10.8% 0.7
Noise Source Elevations (in feet)
Autos: 0.000
Medium Trucks: 2.297
Heavy Trucks: 8.006 Grade Adjustment: 0.0
Lane Equivalent Distance (in feet)
Autos: 75.928
Medium Trucks: 75.811
Heavy Trucks: 75.822
nce Finite Road Fresnel Barrier Atten Berm Atte
-1.88 0.00 -0.99 0.000 0.1 -1.88 0.00 -1.15 0.000 0.1
-1.88 0.00 -1.57 0.000 0.1
attenuation) .eq Evening Leq Night Ldn CNEL
52.9 46.9 55.5 5
43.6 42.0 50.5 5
44.2 45.4 53.8 5
11.2 10.1 00.0 0
53.9 50.0 58.5 5
53.9 50.0 58.5 8
53.9 50.0 58.5 5 70 dBA 65 dBA 60 dBA 55 dBA

FH	WA-RD-77-108 H	GHWA	Y NOISE PF	REDICTION	MODEL						
Scenario: Future Wi Road Name: 41st St. Road Segment: e/o Hoope			Project Name: Parkview Job Number: 12620								
SITE SPECIFIC I	NPUT DATA			NOI	SE MOD	EL INPUT	s				
Highway Data			Site Con	ditions (Ha	rd = 10, S	oft = 15)					
Average Daily Traffic (Adt):	9.430 vehicles				Autos	: 10					
Peak Hour Percentage:	10%		Me	dium Truck	s (2 Axles)	: 10					
Peak Hour Volume:	943 vehicles		He	avy Trucks	(3+ Axles)	: 10					
Vehicle Speed:	25 mph				, ,						
Near/Far Lane Distance:	12 feet		Vehicle I		-	1 - 1					
011 D /			Veni	cleType	Day	Evening	Night	Daily			
Site Data				Auto			9.6%	97.429			
Barrier Height:	0.0 feet			edium Truci			10.3%				
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Truci	ks: 86.59	6 2.7%	10.8%	0.749			
Centerline Dist. to Barrier:	66.0 feet		Noise So	urce Eleva	tions (in	feet)					
Centerline Dist. to Observer:	76.0 feet			Autos:	0.000						
Barrier Distance to Observer:	10.0 feet		Mediur	n Trucks:	2.297						
Observer Height (Above Pad):	5.0 feet			y Trucks:	8.006	Grade Ac	liustment.	0.0			
Pad Elevation:	0.0 feet						,				
Road Elevation:	0.0 feet		Lane Equ	ivalent Di	stance (in	feet)					
Road Grade:	0.0%			Autos:	75.928						
Left View:	-90.0 degrees		Mediur	n Trucks:	75.811						
Right View:	90.0 degrees		Heav	y Trucks:	75.822						
FHWA Noise Model Calculatio											
VehicleType REMEL		Distance			Fresnel	Barrier At		m Atten			
Autos: 58.73			.88	0.00	-0.99		000	0.00			
Medium Trucks: 70.8			.88	0.00	-1.15		000	0.00			
Heavy Trucks: 77.9	-20.85	-1	1.88	0.00	-1.57	0.	000	0.00			
Unmitigated Noise Levels (with		-	<i>,</i>				1				
VehicleType Leq Peak Ho			Evening	Leq Nig		Ldn		VEL			
	7.2 55		53.5		47.5	56.		56			
	2.0 50		44.2		42.6	51.		51			
	5.2 53	-	44.8		46.0	54.		54			
	0.1 58	.4	54.5		50.6	59.	1	59			
Centerline Distance to Noise C	contour (in feet)										
			'0 dBA	65 dB/	4	60 dBA		dBA			
	Ld		6	19		62		95			
		L:	7	21		67		13			

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Scenario: Futu	ro Mith	Project				Project N	amo: D	arkuie			
Road Name: 41st		Project				Job Nur			w		
Road Segment: w/o		each Av.				000 1441	1001. 12	1020			
SITE SPECI	FIC IN	PUT DATA				NO	ISE M	ODEL		5	
Highway Data				5	Site Cond	ditions (H	ard = 1	0, So	ft = 15)		
Average Daily Traffic	(Adt):	9,380 vehicles					A	utos:	10		
Peak Hour Percen	tage:	10%			Med	dium Truc	ks (2 Ax	des):	10		
Peak Hour Vol	ume:	938 vehicles			Hea	avy Truck	s (3+ Ax	des):	10		
Vehicle Sp	beed:	25 mph			/ehicle N	liv					
Near/Far Lane Dista	ance:	12 feet		F		cleType	D	av	Evening	Night	Daily
Site Data							tos: 7	7.5%	12.9%	9.6%	
Barrier He	iaht.	0.0 feet			Me	dium Truc	:ks: 8	4.8%	4.9%	10.3%	1.849
Barrier Type (0-Wall, 1-B		0.0			Н	leavy Truc	:ks: 8	6.5%	2.7%	10.8%	0.74
Centerline Dist. to Ba	arrier:	66.0 feet			Voise So	urce Elev	ations	(in fe	et)		
Centerline Dist. to Obse	erver:	76.0 feet		÷	10,00 00	Autos:	0.00				
Barrier Distance to Obse	erver:	10.0 feet			Modiun	n Trucks:	2.29				
Observer Height (Above	5.0 feet				v Trucks:	8.00		Grade Ad	iustment	0.0	
Pad Eleve	ation:	0.0 feet							,	dounion	0.0
Road Eleve	ation:	0.0 feet		L	.ane Equ	ivalent D			eet)		
Road G	rade:	0.0%				Autos:	75.92				
Left	View:	-90.0 degrees			Mediun	n Trucks:	75.8				
Right	View:	90.0 degrees			Heavy	y Trucks:	75.82	22			
FHWA Noise Model Calcu	lations	;									
VehicleType REN	1EL	Traffic Flow	Distar	псе	Finite I	Road	Fresne	1 I	Barrier Atte	en Ber	m Atter
Autos:	58.73	0.32		-1.88	3	0.00	-(	0.99	0.0	000	0.00
Medium Trucks:	70.80	-16.91		-1.88	3	0.00	- '	1.15	0.0	000	0.00
Heavy Trucks:	77.97	-20.87		-1.88	3	0.00	- '	1.57	0.0	000	0.00
Unmitigated Noise Level	s (witho	out Topo and b	arrier a	atten	uation)						
	ak Hou			eq Ev	/ening	Leq Ni	·		Ldn		VEL
Autos:	57.		5.3		53.5		47.5		56.1		56
	52.		0.5		44.1		42.6		51.1		51.
Medium Trucks:	55	2 5	3.8		44.8		46.0		54.4		54.
Heavy Trucks:					54.5		50.6		59.1		59
	60.	.1 5	8.4								
Heavy Trucks:	60.		8.4								
Heavy Trucks: Vehicle Noise:	60.	ntour (in feet)	_	70 a		65 dE	A	6	0 dBA		dBA
Heavy Trucks: Vehicle Noise:	60.	ntour (in feet)	dn:	70 a 6 7		65 dE 19 21	A	6	0 dBA 61 67	1	<i>dBA</i> 94 12

	FHWA	-RD-77-108 I	HIGHW	AY N	OISE PREDI	CTION MO	DDEL			
Scenario: Futur Road Name: 41st Road Segment: e/o L	St.	,				ect Name: b Number:		ew		
SITE SPECIF	IC INPU	JT DATA				NOISE	MODE	L INPUT	S	
Highway Data				S	Site Conditio	ns (Hard :	= 10, So	oft = 15)		
Average Daily Traffic ()	Adt): 7,6	670 vehicles					Autos:	10		
Peak Hour Percent	age:	10%			Medium	Trucks (2	Axles):	10		
Peak Hour Volu	ime:	767 vehicles			Heavy	Trucks (3+	Axles):	10		
Vehicle Sp	eed:	25 mph			ehicle Mix					
Near/Far Lane Dista	nce:	12 feet		ľ	VehicleT	vne	Day	Evening	Night	Daily
Site Data				+	Venieren	Autos:	77.5%	•	9.6%	
Barrier Hei	iaht:	0.0 feet			Mediur	n Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Be		0.0			Heav	y Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Ba	· ·	66.0 feet		-						
Centerline Dist. to Obse	rver:	76.0 feet		N	loise Source			eet)		
Barrier Distance to Obse	rver:	10.0 feet					.000			
Observer Height (Above F	Pad):	5.0 feet			Medium Tr		.297	Grade Ad	i colmont	
Pad Eleva	tion:	0.0 feet			Heavy Tr	ICKS: 8	.006	Grade Auj	usunen	0.0
Road Eleva	tion:	0.0 feet		L	ane Equival.	ent Distar	ice (in	feet)		
Road Gr	ade:	0.0%			A	utos: 75	.928			
Left V	/iew: -	90.0 degree	6		Medium Tri	ucks: 75	.811			
Right V	/iew:	90.0 degree	6		Heavy Tr	ucks: 75	.822			
FHWA Noise Model Calcu	lations			_						
VehicleType REM	EL Ti	raffic Flow	Distan	се	Finite Roa	d Fres	nel	Barrier Att	en Ber	m Atten
	58.73	-0.55		-1.88			-0.99	0.0		0.000
	70.80	-17.79		-1.88			-1.15	0.0		0.000
Heavy Trucks:	77.97	-21.74		-1.88	8 0.	00	-1.57	0.0	000	0.000
Unmitigated Noise Levels					,					
VehicleType Leq Pea		Leq Day		eq Ev	÷	eq Night		Ldn		VEL
Autos:	56.3	-	4.4		52.6	46		55.2		55.8
Medium Trucks:	51.1		9.6		43.3	41		50.2		50.4
Heavy Trucks:	54.4		2.9		43.9	45		53.5		53.6
Vehicle Noise:	59.2	-	7.5		53.6	49	.7	58.2	2	58.6
Centerline Distance to No	ise Cont	our (in feet)								
				70 d		65 dBA	(	50 dBA		dBA
			.dn:	5		16		50		58
			FI:	5		17		55		73

Wednesday, August 14, 2019

APPENDIX 9.1:

**OPERATIONAL NOISE CALCULATIONS** 



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	STATIONARY SC	URCE NOI	SE PREDIC	TION MODE	L		8/15/2019
Observer Location: R1				Name: Park			
	Air Conditioning	Units		umber: 1262			
Condition: Operatio	nal		A	nalyst: A. W	olfe		
	NO	ISE MODE	L INPUTS				
Noise Distance to Observer	216.0 feet			E	Barrier Heig	ht: 0.0	feet
Noise Distance to Barrier:	216.0 feet			Noise	Source Heig	<i>ht:</i> 5.0	) feet
Barrier Distance to Observer:	0.0 feet			<i>ht:</i> 5.0	) feet		
Observer Elevation:	0.0 feet		Ba	<i>m):</i> 0			
Noise Source Elevation:	20.0 feet			Drop	Off Coefficie	ent: 20.0	)
Barrier Elevation:	0.0 feet			ubling of distan loubling of dista			
	NOISE	MODEL P	ROJECTIC	DNS			
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	77.2	0.0	0.0	0.0	0.0	0
Distance Attenuation	216.0	-32.7	-32.7	-32.7	-32.7	-32.7	-32
shielding (Barrier Attenuation)	216.0	0.0	0.0	0.0	0.0	0.0	0
Raw (Distance + Barrier)		44.5	-32.7	-32.7	-32.7	-32.7	-32
60 Minute Hourly Adjustmen	t	44.5	-32.7	-32.7	-32.7	-32.7	-32

	STATIONARY SC	URCE NOI	SE PREDIC	TION MOD	EL		8/15/2019			
Observer Location: R1			Project	Name: Par	kview					
Source: Outdoor	Park Activity		Job N							
Condition: Operatio	nal		A	Analyst: A. V	Volfe					
	NO	ISE MODE	L INPUTS	5						
Noise Distance to Observer	235.0 feet				Barrier Hei	ght: 0.	0 feet			
Noise Distance to Barrier:	235.0 feet		Noise Source Height: 5.0 fee							
Barrier Distance to Observer:	0.0 feet		Observer Height: 5.0 fee							
Observer Elevation:	0.0 feet		Barrier Type (0-Wall, 1-Berm): 0							
Noise Source Elevation:	0.0 feet			Droj	o Off Coeffic	ient: 20.	0			
Barrier Elevation:	0.0 feet		20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance							
	NOISE	MODEL P	ROJECTI	ONS						
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax			
Reference (Sample)	5.0	63.4	0.0	0.0	0.0	0.0	0.			
Distance Attenuation	235.0	-33.4	-33.4	-33.4	-33.4	-33.4	-33.			
Shielding (Barrier Attenuation)	235.0	0.0	0.0	0.0	0.0	0.0	0.0			
Raw (Distance + Barrier)		30.0	-33.4	-33.4	-33.4	-33.4	-33.4			

30.0

-33.4

STATIONARY SOURCE NOISE PREDICTION MODEL 8/15/2019

-33.4

-33.4

-33.4 -33.4

60 Minute Hourly Adjustment

	STATION/	ARY SO	OURCE NO	ISE PREDIC	TION MOD	EL		8/15/2019		
Observer Location: R1 Source: Parking L	ot Vehicle	Mover	nents	Project Job N						
Condition: Operation				,	Analyst: A. V	Volfe				
		NO	ISE MOD	L INPUTS	;					
Noise Distance to Observer	172.0 f	eet				Barrier Heig	<i>ht:</i> 0.0	) feet		
Noise Distance to Barrier:	172.0 f	eet			Noise	Source Hei	ght: 5.0	) feet		
Barrier Distance to Observer:	0.0 f	eet			ght: 5.0	) feet				
Observer Elevation:	0.0 f	eet		Ba	<i>rm):</i> 0					
Noise Source Elevation:	0.0 f	eet			Drop	Off Coeffici	ent: 20.0	D		
Barrier Elevation:	0.0 f	eet		20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distan						
		NOISE	MODEL	ROJECTI	ONS					
Noise Level	Distance (	(feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)		10.0	51.3	0.0	0.0	0.0	0.0	0.		
Distance Attenuation		172.0	-24.7	-24.7	-24.7	-24.7	-24.7	-24		
Shielding (Barrier Attenuation)		172.0	0.0	0.0	0.0	0.0	0.0	0		
Raw (Distance + Barrier)			26.6	-24.7	-24.7	-24.7	-24.7	-24		
60 Minute Hourly Adjustmen	t		26.6	-24.7	-24.7	-24.7	-24.7	-24.		

	STATIONARY SC	OURCE NO	SE PREDIO	CTION MOD	EL		8/15/2019	
Observer Location: R2			Projec	t Name: Parl	wiew			
Source: Roof-Top	Air Conditioning	Units	Job Number: 12620					
Condition: Operation	nal		,	Analyst: A. V	/olfe			
	NO	ISE MODE	L INPUTS	6				
Noise Distance to Observer	445.0 feet				Barrier Hei	ght: 0.0	) feet	
Noise Distance to Barrier:	435.0 feet			Noise	ght: 5.0	) feet		
Barrier Distance to Observer:	10.0 feet			C	bserver Hei	ight: 5.0	) feet	
Observer Elevation:	0.0 feet		Barrier Type (0-Wall, 1-Berm): 0					
Noise Source Elevation:	20.0 feet			Drop	Off Coeffic	ient: 20.0	)	
Barrier Elevation:	0.0 feet					oubling of distar doubling of dist		
	NOISE	MODEL P	ROJECTI	ONS				
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	77.2	0.0	0.0	0.0	0.0	0	
Distance Attenuation	445.0	-39.0	-39.0	-39.0	-39.0	-39.0	-39	
Shielding (Barrier Attenuation)	435.0	0.0	0.0	0.0	0.0	0.0	0	
Raw (Distance + Barrier)		38.2	-39.0	-39.0	-39.0	-39.0	-39	

38.2

-39.0

-39.0

-39.0

-39.0

-39.0

60 Minute Hourly Adjustment

Observer Location: R3		Project Name: Parkview	
Source: Roof-Top	Air Conditioning Units	Job Number: 12620	
Condition: Operation	al	Analyst: A. Wolfe	
	NOISE MOD	EL INPUTS	
Noise Distance to Observer	691.0 feet	Barrier Height:	6.0 fee
Noise Distance to Barrier:	691.0 feet	Noise Source Height:	5.0 fee
Barrier Distance to Observer:	0.0 feet	Observer Height:	5.0 fee
Observer Elevation:	0.0 feet	Barrier Type (0-Wall, 1-Berm):	0
Noise Source Elevation:	20.0 feet	Drop Off Coefficient:	20.0
Barrier Elevation:	0.0 feet	20 = 6 dBA per doubling 15 = 4.5 dBA per doubling	

	NOISE	MODEL F	ROJECTI	ONS			
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	77.2	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	691.0	-42.8	-42.8	-42.8	-42.8	-42.8	-42.8
Shielding (Barrier Attenuation)	691.0	-10.1	-10.1	-10.1	-10.1	-10.1	-10.1
Raw (Distance + Barrier)		24.3	-52.9	-52.9	-52.9	-52.9	-52.9
60 Minute Hourly Adjustmer	nt	24.3	-52.9	-52.9	-52.9	-52.9	-52.9

	STATIONARY SC	JURGE NO	JISE PREDI		EL			8/15/201
Observer Location: R3			Projec	t Name: Par	kview			
Source: Outdoor F	Park Activity		Job Number: 12620					
Condition: Operation	nal		Analyst: A. Wolfe					
	NO	ISE MOD	EL INPUT	5				
Noise Distance to Observer	607.0 feet				Barrier Heig	ght:	6.0	feet
Noise Distance to Barrier:	607.0 feet		Noise Source Height:					feet
Barrier Distance to Observer:	0.0 feet			(	Observer Hei	ght:	5.0	feet
Observer Elevation:	0.0 feet		В	arrier Type (	0-Wall, 1-Be	rm):	0	
Noise Source Elevation:	0.0 feet			Dro	p Off Coeffic	ient:	20.0	)
Barrier Elevation:	0.0 feet		20 = 6 dBA per doubling of 15 = 4.5 dBA per doubling					
	NOISE	MODEL	PROJECT	ONS				
Noise Level	Distance (feet)	Lea	L50	L25	L8	L	2	Lma

Distance (feet)	Leq	L50	L25	L8	L2	Lmax
5.0	63.4	0.0	0.0	0.0	0.0	0.0
607.0	-41.7	-41.7	-41.7	-41.7	-41.7	-41.7
607.0	-10.2	-10.2	-10.2	-10.2	-10.2	-10.2
	11.5	-51.9	-51.9	-51.9	-51.9	-51.9
t	11.5	-51.9	-51.9	-51.9	-51.9	-51.9
	5.0 607.0 607.0	5.0 63.4 607.0 -41.7 607.0 -10.2 11.5	5.0 63.4 0.0 607.0 -41.7 -41.7 607.0 -10.2 -10.2 11.5 -51.9	5.0         63.4         0.0         0.0           607.0         -41.7         -41.7         -41.7           607.0         -10.2         -10.2         -10.2           11.5         -51.9         -51.9	5.0         63.4         0.0         0.0         0.0           607.0         -41.7         -41.7         -41.7         -41.7         -41.7           607.0         -10.2         -10.2         -10.2         -10.2         -10.2           11.5         -51.9         -51.9         -51.9         -51.9	5.0         63.4         0.0         0.0         0.0         0.0           607.0         -41.7         -41.7         -41.7         -41.7         -41.7         -41.7           607.0         -10.2         -10.2         -10.2         -10.2         -10.2         -10.2           11.5         -51.9         -51.9         -51.9         -51.9         -51.9

Observer Location: R2 Source: Outdoor Condition: Operatio							
contaitoni oportaito		ISE MODE			0110		
Noise Distance to Observer					arrier Heig	ht: 0.0	feet
Noise Distance to Barrier:	377.0 feet			Noise	Source Heig	ht: 5.0	) feet
Barrier Distance to Observer:	10.0 feet			OL	oserver Heig	ht: 5.0	) feet
Observer Elevation:	0.0 feet		Ba	rrier Type (0-			
Noise Source Elevation:	0.0 feet				Off Coefficie		
Barrier Elevation:	0.0 feet				6 dBA per dou 4.5 dBA per d		
	NOISE	MODEL P	ROJECTIC	ONS			
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	63.4	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	387.0	-37.8	-37.8	-37.8	-37.8	-37.8	-37.8
Shielding (Barrier Attenuation)	377.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		25.6	-37.8	-37.8	-37.8	-37.8	-37.8
60 Minute Hourly Adjustmen	25.6	-37.8	-37.8	-37.8	-37.8	-37.8	

	STATIONARY SC	URCE NOIS	SE PREDICI	TION MODE	L		8/15/2019	
Observer Location: R2			Project I					
Source: Parking	Lot Vehicle Moverr	nents	s Job Number: 12620					
Condition: Operatio	nal		Ai	nalyst: A. W	olfe			
	NO	ISE MODE	L INPUTS					
Noise Distance to Observer	231.0 feet			E	arrier Heig	ht: 6.0	feet	
Noise Distance to Barrier:	221.0 feet			Noise	Source Heig	ht: 5.0	) feet	
Barrier Distance to Observer:	10.0 feet		Observer Height:				) feet	
Observer Elevation	0.0 feet		Bar	<i>n):</i> 0				
Noise Source Elevation:	0.0 feet			Drop	Off Coefficie	nt: 20.0	)	
Barrier Elevation:	0.0 feet		20 = 6 dBA per doubling 15 = 4.5 dBA per doublin					
	NOISE	MODEL P	ROJECTIO	NS				
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	10.0	51.3	0.0	0.0	0.0	0.0	C	
istance Attenuation	231.0	-27.3	-27.3	-27.3	-27.3	-27.3	-27	
shielding (Barrier Attenuation)	221.0	-5.5	-5.5	-5.5	-5.5	-5.5	-5	
Raw (Distance + Barrier)		18.5	-32.8	-32.8	-32.8	-32.8	-32	
60 Minute Hourly Adjustmen	+	18.5	-32.8	-32.8	-32.8	-32.8	-32	

	STATIONARY SC	URCE NOIS	SE PREDICI	TION MODE	L		8/15/2019
Observer Location: R3 Source: Parking I Condition: Operatio	_ot Vehicle Moverr nal	ients	Project I Job Nu Ai				
	NO	SE MODE	L INPUTS				
Noise Distance to Observer	386.0 feet			Е	arrier Heig	ht: 0.0	feet
Noise Distance to Barrier:	386.0 feet			Noise	Source Heig	ht: 5.0	feet
Barrier Distance to Observer:	0.0 feet			Ot	oserver Heig	<i>ht:</i> 5.0	feet
Observer Elevation:	0.0 feet		Bar				
Noise Source Elevation:	0.0 feet			Drop	Off Coefficie	ent: 20.0	
Barrier Elevation:	0.0 feet					ubling of distan loubling of dista	
	NOISE	MODEL P	ROJECTIO	NS			
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	10.0	51.3	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	386.0	-31.7	-31.7	-31.7	-31.7	-31.7	-31.3
Shielding (Barrier Attenuation)	) 386.0 0.0 0.0 0.0 0.0 0.0						0.
Raw (Distance + Barrier)		19.6	-31.7	-31.7	-31.7	-31.7	-31.
60 Minute Hourly Adjustmen	t	19.6	-31.7	-31.7	-31.7	-31.7	-31.7

	STATIONARY SC	URCE NOIS	SE PREDIC	TION MODE	iL		8/15/2019
Observer Location: R4			Project	Name: Park	view		
Source: Roof-Top	Air Conditioning	Units					
Condition: Operatio	nal		A	nalyst: A. W	olfe		
	NO	ISE MODE	L INPUTS				
Noise Distance to Observer	426.0 feet			E	Barrier Heig	ght: 0.0	) feet
Noise Distance to Barrier:	426.0 feet			Noise	Source Hei	ght: 5.0	) feet
Barrier Distance to Observer:	0.0 feet	0.0 feet Observer Height:					) feet
Observer Elevation:	0.0 feet		Barrier Type (0-Wall, 1-Berm):				
Noise Source Elevation:	20.0 feet			Drop Off Coefficient:			
Barrier Elevation:	0.0 feet					oubling of distan doubling of dist	
	NOISE	MODEL P	ROJECTIC	NS			
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	5.0	77.2	0.0	0.0	0.0	0.0	0.
Distance Attenuation	426.0	-38.6	-38.6	-38.6	-38.6	-38.6	-38.
Shielding (Barrier Attenuation)	426.0 0.0 0.0 0.0 0.0				0.0	0.	
Raw (Distance + Barrier)		38.6	-38.6	-38.6	-38.6	-38.6	-38.

38.6

-38 6

-38.6

-38.6

-38.6

-38.6

60 Minute Hourly Adjustment

60 Minute Hourly Adjustment

	STATIONA	RY SC	OURCE NO	ISE PREDIC	TION MOD	EL		8/15/2019	
Observer Location: R4				Project Name: Parkview					
Source: Outdoor	Park Activit	y		Job N	lumber: 126				
Condition: Operation	nal			,	Analyst: A. Wolfe				
		NO	ISE MODE	EL INPUTS	6				
Noise Distance to Observer	337.0 fe	et				Barrier Heig	ght: 0.0	) feet	
Noise Distance to Barrier:	337.0 fe	et			Noise Source Height:				
Barrier Distance to Observer:	0.0 fe	et			C	bserver Hei	ght: 5.0	) feet	
Observer Elevation:	0.0 fe	et		Barrier Type (0-Wall, 1-Berm): 0					
Noise Source Elevation:	0.0 fe	et			Drop	Off Coeffici	ient: 20.	0	
Barrier Elevation:	0.0 fe	et				= 6 dBA per do = 4.5 dBA per			
	N	OISE	MODEL F	ROJECTI	ONS				
Noise Level	Distance (	feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)		5.0	63.4	0.0	0.0	0.0	0.0	0	
Distance Attenuation	3	37.0	-36.6	-36.6	-36.6	-36.6	-36.6	-36	
Shielding (Barrier Attenuation)	3	37.0	0.0	0.0	0.0	0.0	0.0	0	
Raw (Distance + Barrier)			26.8	-36.6	-36.6	-36.6	-36.6	-36.	
60 Minute Hourly Adjustmen	t		26.8	-36.6	-36.6	-36.6	-36.6	-36.	

	STATION	ARY SC	URCE NO	SE PREDI	CTION MOD	EL		8/15/2019	
Observer Location: R4				Project Name: Parkview					
Source: Parking I	_ot Vehicle	Mover	nents	ents Job Number: 12620					
Condition: Operatio	nal				Analyst: A. V	Volfe			
		NO	ISE MODE	L INPUT	5				
Noise Distance to Observer	208.0 f	feet				Barrier Heig	ght: 0	.0 feet	
Noise Distance to Barrier:	208.0 f	feet			Noise	e Source Hei	ight: 5	.0 feet	
Barrier Distance to Observer:	0.0 f	.0 feet Observer Height:					ight: 5	.0 feet	
Observer Elevation:	0.0 1	foot		В	rm):	0			
Noise Source Elevation:	0.01				Drop	ient: 20	0.0		
Barrier Elevation:	0.0 1					= 6 dBA per di i = 4.5 dBA per			
		NOISE	MODEL P	ROJECT	ONS				
Noise Level	Distance	(feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)		10.0	51.3	0.0	0.0	0.0	0.0	) O.	
Distance Attenuation		208.0	-26.4	-26.4	-26.4	-26.4	-26.4	4 -26.	
Shielding (Barrier Attenuation)		208.0	0.0	0.0	0.0	0.0	0.0	D 0.	
Raw (Distance + Barrier)			24.9	-26.4	-26.4	-26.4	-26.4	4 -26.	

24 9

-26.4

-26.4

-26.4

-26.4

-26.4

60 Minute Hourly Adjustment

	STATIONARY SC	OURCE NOIS	SE PREDICT	ION MODE	L		8/15/2019		
Observer Location: R5 Source: Roof-Top Condition: Operatio	o Air Conditioning nal	Units	Project I Job Nu Ai						
	NO	ISE MODE	L INPUTS						
Noise Distance to Observer	162.0 feet			В	arrier Heigh	nt: 0.0	feet		
Noise Distance to Barrier:	162.0 feet		Noise Source Height: 5.0						
Barrier Distance to Observer:	0.0 feet		Observer Height: 5.0						
Observer Elevation:	0.0 feet		Barrier Type (0-Wall, 1-Berm): 0						
Noise Source Elevation:	20.0 feet			Drop	Off Coefficier	nt: 20.0	)		
Barrier Elevation:	0.0 feet				6 dBA per doul 4.5 dBA per do				
	NOISE	MODEL P	ROJECTIO	NS					
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
Reference (Sample)	5.0	77.2	0.0	0.0	0.0	0.0	0.0		
Distance Attenuation	162.0	-30.2	-30.2	-30.2	-30.2	-30.2	-30.2		
Shielding (Barrier Attenuation)	162.0	0.0	0.0	0.0	0.0 0.0 0.0				
Raw (Distance + Barrier)		47.0	-30.2	-30.2	-30.2	-30.2	-30.2		

47.0

-30.2

-30.2

-30.2

-30.2

-30.2

	STATIONARY SC	OURCE NO	SE PREDIC	TION MODE	L		8/15/2019	
Observer Location: R5			Project Name: Parkview					
Source: Outdoor Park Activity			Job Number: 12620					
Condition: Operatio		Analyst: A. Wolfe						
	NO	ISE MODE	L INPUTS					
Noise Distance to Observer	258.0 feet		Barrier Height: 0.0 f			feet		
Noise Distance to Barrier:	258.0 feet		Noise Source Height:			ht: 5.0	5.0 feet	
Barrier Distance to Observer:	0.0 feet		Observer Height:				5.0 feet	
Observer Elevation:	0.0 feet		Barrier Type (0-Wall, 1-Berm): 0					
Noise Source Elevation:	0.0 feet		Drop Off Coefficient: 20.0 20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance					
Barrier Elevation:	0.0 feet							
	NOISE	MODEL P	ROJECTIC	NS				
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax	
Reference (Sample)	5.0	63.4	0.0	0.0	0.0	0.0	0.	
Distance Attenuation	258.0	-34.3	-34.3	-34.3	-34.3	-34.3	-34.	
Shielding (Barrier Attenuation)	258.0	0.0	0.0	0.0	0.0	0.0	0.	
Raw (Distance + Barrier)		29.1	-34.3	-34.3	-34.3	-34.3	-34.	
60 Minute Hourly Adjustment		29.1	-34.3	-34.3	-34.3	-34.3	-34.	

	STATIONARY SO	URCE NOI	SE PREDIC	TION MODE	EL		8/15/201		
Observer Location: R5 Source: Parking Lot Vehicle Movements Condition: Operational			Project Name: Parkview Job Number: 12620 Analyst: A. Wolfe						
	NO	SE MODE	L INPUTS	;					
Noise Distance to Observer	381.0 feet		Barrier Height: 0.						
Noise Distance to Barrier:	381.0 feet			Noise Source Height:					
Barrier Distance to Observer:	0.0 feet		Observer Height:				5.0 feet		
Observer Elevation:	0.0 feet		Barrier Type (0-Wall, 1-Berm):				0		
Noise Source Elevation:	0.0 feet			Drop	ient:	20.0			
Barrier Elevation:				20 = 6 dBA per doubling of distance 15 = 4.5 dBA per doubling of distance					
	NOISE	MODEL P	ROJECTI	ONS					
Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax		
-fammer (Oammla)	40.0	E4 0	0.0	0.0	0.0		2.0		

Noise Level	Distance (feet)	Leq	L50	L25	L8	L2	Lmax
Reference (Sample)	10.0	51.3	0.0	0.0	0.0	0.0	0.0
Distance Attenuation	381.0	-31.6	-31.6	-31.6	-31.6	-31.6	-31.6
Shielding (Barrier Attenuation)	381.0	0.0	0.0	0.0	0.0	0.0	0.0
Raw (Distance + Barrier)		19.7	-31.6	-31.6	-31.6	-31.6	-31.6
60 Minute Hourly Adjustmer	nt	19.7	-31.6	-31.6	-31.6	-31.6	-31.6