

Pepper 210 Commerce Center

NOISE AND VIBRATION ANALYSIS
COUNTY OF SAN BERNARDINO

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LIST OF ABBREVIATED TERMS

(1) Reference

ANSI American National Standards Institute

Calveno California Vehicle Noise

CEQA California Environmental Quality Act
CNEL Community Noise Equivalent Level

dBA A-weighted decibels

EPA Environmental Protection Agency
FHWA Federal Highway Administration
FTA Federal Transit Administration

INCE Institute of Noise Control Engineering

L_{eq} Equivalent continuous (average) sound level
L_{max} Maximum level measured over the time interval

mph Miles per hour

PPV Peak Particle Velocity

Project Pepper 210 Commerce Center

REMEL Reference Energy Mean Emission Level

RMS Root-mean-square VdB Vibration Decibels



EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Pepper 210 Commerce Center development ("Project"). The Project site is located at 20080 N. Highland Avenue in the County of San Bernardino. The proposed Project is to consist of the development of 1,867,660 square feet of High-Cube Fulfillment Center Warehouse. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown, and therefore, this noise study includes a conservative analysis of the proposed Project uses. This noise study has been prepared to satisfy applicable County of San Bernardino noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

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

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

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



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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Pepper 210 Commerce Center ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term stationary-source operational noise and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The proposed Project is located at 20080 N. Highland Avenue in the County of San Bernardino, as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

A preliminary site plan for the proposed Project is shown on Exhibit 1-B. The proposed Project is to consist of the development of 1,867,660 square feet of High-Cube Fulfillment Center Warehouse use with an opening year of 2029. The Project also includes a total of 626 trailer parking spaces that will be ancillary use and utilized by the future tenant of the building and not an independent off-site operator. It should be noted, 620,000 square feet of the total High-Cube Fulfillment Center square footage is associated with pick mod mezzanine space and the building footprint is 1,232,660 square feet. There is a proposed 2,100 square foot yard office associated with the trailer yard.

At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown, and therefore, this noise study includes a conservative analysis of the proposed Project uses. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements. This noise analysis is intended to describe the noise level impacts associated with the expected typical operational activities at the Project site.



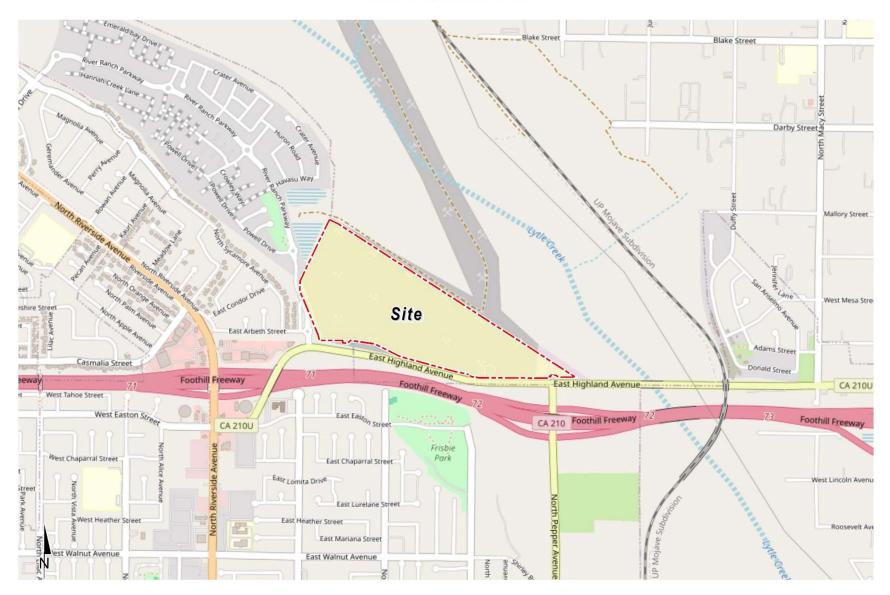
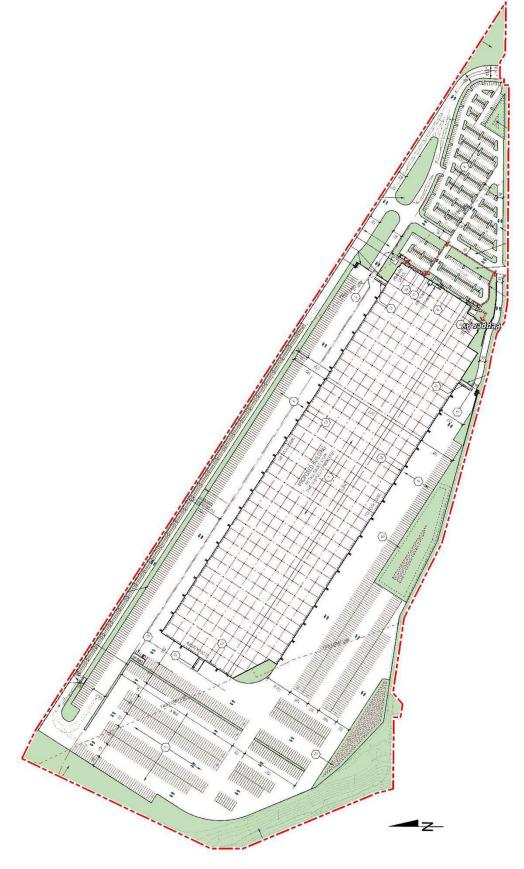


EXHIBIT 1-A: LOCATION MAP





EXHIBIT 1-B: PRELIMINARY SITE PLAN



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2 FUNDAMENTALS

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE	
THRESHOLD OF PAIN		140			
NEAR JET ENGINE		130	INTOLERABLE OR		
		120	DEAFENING	HEARING LOSS	
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		TILAMING LOSS	
LOUD AUTO HORN		100			
GAS LAWN MOWER AT 1m (3 ft)		90	VERY NOISY		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80	VERT HOIST	14.	
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	LOOD		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE		
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		SLEEP DISTURBANCE	
QUIET SUBURBAN NIGHTTIME	LIBRARY	30			
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	NO EFFECT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0	VERT PAINT		

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

2.1 RANGE OF NOISE

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



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

2.2 Noise Descriptors

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

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

2.3 SOUND PROPAGATION

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

2.3.1 GEOMETRIC SPREADING

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

2.3.2 GROUND ABSORPTION

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



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

2.3.3 ATMOSPHERIC EFFECTS

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

2.3.4 SHIELDING

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

2.4 Noise Control

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

2.5 Noise Barrier Attenuation

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



2.6 LAND USE COMPATIBILITY WITH NOISE

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

2.7 COMMUNITY RESPONSE TO NOISE

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

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

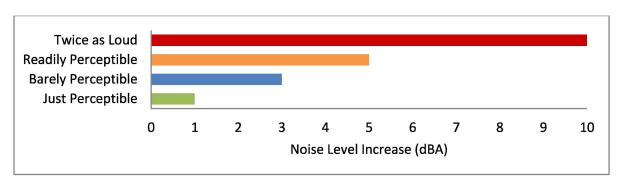


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Impact Assessment Manual* (8), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Decibel notation (VdB) serves to reduce the range of numbers used to describe human response to vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receivers for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment and/or activities.

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



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

EXHIBIT 2-C: Typical Levels of Ground-Borne Vibration

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

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



3 REGULATORY SETTING

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

3.1 State of California Noise Requirements

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR) (10) OPR identifies suggested land use noise compatibility levels as part of its General Plan Guidelines as shown on Exhibit 3-A. These suggested guidelines provide planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels. The guidelines identify normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable noise levels for various land uses.

The land use compatibility guidelines are intended to be an advisory resource when considering changes in land use and policies, such as zoning modifications. The Project industrial land use is considered *normally acceptable* unmitigated exterior noise levels of less than 75 dBA CNEL. In addition, the State through the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 County of San Bernardino Countywide Plan Hazards Element

The County of San Bernardino is committed to protecting life, property, and commerce from impacts associated with natural hazards, human-generated hazards, and increased risk due to climate change. The County also works to ensure that residents in unincorporated disadvantaged communities have a reduced risk of exposure to pollution and have equitable access to public facilities and services. Effectively reducing these risks requires the County and its partners to evaluate public safety threats, proactively plan and protect against potential hazards, and establish systems that will make the county and its people safer and more self- reliant. (11) To address noise sources found in the County of San Bernardino, the following policies have been identified in the Countywide Plan Hazards Element:

 Policy HZ-2.6: Coordination with transportation authorities. We collaborate with airport owners, FAA, Caltrans, SBCTA, SCAG, neighboring jurisdictions, and other transportation providers in the preparation and maintenance of, and updates to transportation-related plans and projects to minimize noise impacts and provide appropriate mitigation measures.



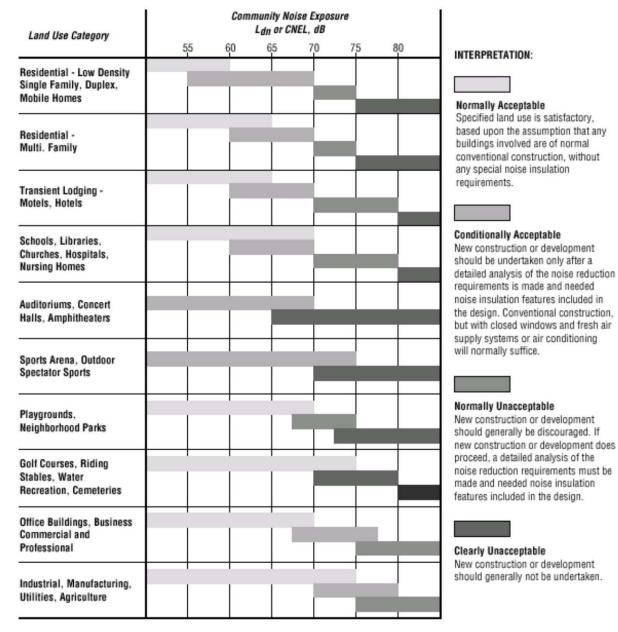


EXHIBIT 3-A: LAND USE NOISE COMPATIBILITY CRITERIA

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

- **Policy HZ-2.7**: Truck delivery areas. We encourage truck delivery areas to be located away from residential properties and require associated noise impacts to be mitigated.
- Policy HZ-2.8: Proximity to noise generating uses. We limit or restrict new noise sensitive land uses in proximity to existing conforming noise generating uses and planned industrial areas.
- **Policy HZ-2.9**: Control sound at the source. We prioritize noise mitigation measures that control sound at the source before buffers, sound walls, and other perimeter measures.



- Policy HZ-2.10: Agricultural operations. We require new development adjacent to existing
 conforming agricultural operations to provide adequate buffers to reduce the exposure of
 new development to operational noise, odor, and the storage or application of pesticides or
 other hazardous materials.
- Policy HZ-3.19: Community education. We make educational materials available to the public
 in unincorporated environmental justice focus areas so that they clearly understand the
 potential for adverse pollution, noise, odor, vibration, and lighting and glare, and the effects
 of toxic materials to promote civil engagement. We require that such educational materials
 be developed in accordance with Plain Language Guidelines.

3.3 COUNTY OF SAN BERNARDING DEVELOPMENT CODE

While the County of San Bernardino Countywide Plan Hazards Element provides guidelines and criteria to assess transportation noise on sensitive land uses, the County Code, Title 8 Development Code contains the noise level limits for mobile, stationary, and construction-related noise sources. (12)

3.3.1 Transportation Noise Standards

Section 83.01.080[d], Table 83-3, contains the County of San Bernardino's mobile noise source-related standards, shown on Exhibit 3-B. Exterior transportation (mobile) noise level standards for residential land uses in the Project study area are shown to be 60 dBA CNEL, while non-noise-sensitive land uses, such as office uses, require exterior noise levels of 65 dBA CNEL per the County's Table 83-3 mobile noise source standards.

3.3.2 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location such as the Pepper 210 Commerce Center Project, stationary-source (operational) noise such as the expected loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements are typically evaluated against standards established under a jurisdiction's Municipal Code. The County of San Bernardino County Code, Title 8 Development Code, Section 83.01.080[c] establishes the noise level standards for stationary noise sources. Since the Project's land use will potentially impact adjacent noise-sensitive uses in the Project study area, this noise study relies on the more conservative residential noise level standards to describe potential operational noise impacts.

For residential properties, the exterior noise level shall not exceed 55 dBA Leq during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA Leq during the nighttime hours (10:00 p.m. to 7:00 a.m.) for both the whole hour, and for not more than 30 minutes in any hour. The exterior noise level (11) standards shall apply for a cumulative period of 30 minutes in any hour, as well as the standard plus 5 dBA cannot be exceeded for a cumulative period of more than 15 minutes in any hour, or the standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour, or the standard plus 15 dBA for a cumulative period of more than 1 minute in any hour, or the standard plus 20 dBA for any period of time.



EXHIBIT 3-B: COUNTY OF SAN BERNARDINO MOBILE NOISE LEVEL STANDARDS

Noise Standards for Adjacent Mobile Noise Sources							
	Land Use Ldn (or CNEL) dB(A)						
Categories	Uses	Interior (1)	Exterior (2)				
Residential	Single and multi-family, duplex, mobile homes	45	60(3)				
Commercial	Hotel, motel, transient housing	45	60(3)				
	Commercial retail, bank, restaurant	50	N/A				
	Office building, research and development, professional offices	45	65				
	Amphitheater, concert hall, auditorium, movie theater	45	N/A				
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65				
Open Space	Park	N/A	65				

Notes:

- (1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.
- (2) The outdoor environment shall be limited to:
- · Hospital/office building patios
- · Hotel and motel recreation areas
- Mobile home parks
- Multi-family private patios or balconies
- · Park picnic areas
- · Private yard of single-family dwellings
- School playgrounds
- (3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

Source: County of San Bernardino County Code, Title 8 Development Code, Table 83-3.

Further, Section 83.01.080[e] indicates that if the existing ambient noise level already exceeds any of the exterior noise level limit categories, then the standard shall be adjusted to reflect the ambient conditions. The County of San Bernardino operational noise level standards are shown on Table 3-1 and included in Appendix 3.1.

TABLE 3-1: OPERATIONAL NOISE LEVEL STANDARDS

	Exterior Noise Level Standards (dBA) ¹					
Time Period	L ₅₀ (30 mins)	L ₂₅ (15 mins)	L ₈ (5 mins)	L ₂ (1 min)	L _{max} (Anytime)	
Daytime (7:00 a.m. to 10:00 p.m.)	55	60	65	70	75	
Nighttime (10:00 p.m. to 7:00 a.m.)	45	50	55	60	65	

 $^{^{1}}$ County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1). The percent noise level is the level exceeded "n" percent of the time during the measurement period. L₅₀ is the noise level exceeded 50% of the time.

The percentile noise descriptors are provided to ensure that the duration of the noise source is fully considered. However, due to the relatively constant intensity of the Project operational activities, the L₅₀ or average L_{eq} noise level metrics best describe the loading dock activity, roof-



top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements. In addition, the L_{eq} noise level metric accounts for noise fluctuations over time by averaging the louder and quieter events and giving more weight to the louder events. In addition, due to the mathematical relationship between the median (L_{50}) and the mean (L_{eq}), the L_{eq} will always be larger than or equal to the L_{50} . The more variable the noise becomes, the larger the L_{eq} becomes in comparison to the L_{50} . Therefore, this noise study conservatively relies on the average L_{eq} sound level limits to describe the Project operational noise levels.

3.4 Construction Noise Standards

Section 83.01.080[g][3] of the County of San Bernardino Development Code, provided in Appendix 3.1, indicates that construction activity is considered exempt from the noise level standards between the hours of 7:00 a.m. to 7:00 p.m. except on Sundays and Federal holidays. (12) However, neither the County of San Bernardino Countywide Plan or Development Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a substantial temporary or periodic noise increase. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts, as discussed below.

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use. (8 p. 179)

3.5 CONSTRUCTION VIBRATION STANDARDS

The County of San Bernardino Development Code, Section 83.01.090[a] states that vibration shall be no greater than or equal to two-tenths inches per second measured at or beyond the lot line. (12) Therefore, to determine if the vibration levels due to the operation and construction of the Project, the peak particle velocity (PPV) vibration level standard of 0.2 inches per second is used.



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4 SIGNIFICANCE CRITERIA

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

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

4.1 Noise Level Increases (Threshold A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes that there is no single noise increase that renders a noise impact significant. (14) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called ambient environment. In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will typically be judged.

4.1.1 Noise-Sensitive Receivers

The Federal Interagency Committee on Noise (FICON) (15) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (Leq).

As previously stated, the approach used in this noise study recognizes that there is no single noise increase that renders a noise impact significant, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (14) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, a readily perceptible 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. Per the FICON, in areas where the without project noise levels



range from 60 to 65 dBA, a 3 dBA barely perceptible noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or readily perceptible, 3 dBA or barely perceptible, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance at noise sensitive receiver locations are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (16 p. 2_48).

4.1.2 Non-Noise-Sensitive Receivers

The OPR land use/noise compatibility standards were used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise level for non-noise-sensitive land use is 70 dBA CNEL. To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a *barely perceptible* 3 dBA criteria is used. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the OPR land use/noise compatibility standards *normally acceptable* 70 dBA CNEL exterior noise level criteria.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.5, the vibration impacts originating from the construction of the Pepper 210 Commerce Center, vibration-generating activities are appropriately evaluated using the County of San Bernardino threshold to assess potential temporary construction-related impacts at nearby receiver locations. The County of San Bernardino Municipal Code identifies an operational vibration level threshold of 0.2 in/sec PPV.

4.3 CEQA Guidelines Not Further Analyzed (Threshold C)

CEQA Noise Threshold C applies when there are nearby public and private airports and/or air strips and focuses on land use compatibility of the Project to nearby airports and airstrips. The Project site is not located within two miles of an airport or airstrip. The closest airport is the San Bernardino International Airport located over 9 miles southeast of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and



therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Appendix G to the CEQA Guidelines, Noise Threshold C.

4.4 SIGNIFICANCE CRITERIA SUMMARY

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

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Amahusia	land Hea	Condition(s)	Significan	ce Criteria
Analysis	Land Use Condition(s)		Daytime	Nighttime
		if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL P	roject increase
	Noise- Sensitive ¹	if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL P	roject increase
Off-Site	Schille	if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase
Traffic	Non-Noise- Sensitive ²	If ambient is > 70 dBA CNEL ≥ 3 dBA CNEL Project incre		Project increase
	Residential	Exterior Noise Level Limit ³	55 dBA L _{eq}	45 dBA L _{eq}
Onevetienel		if ambient is < 60 dBA L _{eq}	≥ 5 dBA L _{eq} Project increase	
Operational	Noise- Sensitive ¹	if ambient is 60 - 65 dBA L _{eq}	≥ 3 dBA L _{eq} Project increase	
	Sensitive	if ambient is > 65 dBA L _{eq}	≥ 1.5 dBA L _{eq} Project increase	
	Noise-	Permitted between 7:00 a.m. to 7:00 p.m.; except Sundays and Federal holidays. ⁴		
Construction	Sensitive	Noise Level Threshold ⁵	80 dBA L _{eq}	(see Table 3-1) ³
		Vibration Level Threshold ⁶	0.2 PPV (in/sec)	n/a

¹FICON, 1992.



² OPR land use/noise compatibility standards.

³ County of San Bernardino Development Code, Title 8, Section 83.01.080 (Appendix 3.1)

⁴ Section 83.01.080[g][3] of the County of San Bernardino County Code.

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

 $^{^{\}rm 6}$ Section 83.01.090[a] of the County of San Bernardino County Code.

[&]quot;Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m. "n/a" = construction activities are not planned during the nighttime hours; "PPV" = peak particle velocity.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at six locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, long-term noise level measurements were collected by Urban Crossroads, Inc. on Friday, February 17, 2023. Appendix 5.1 includes study area photos.

5.1 Measurement Procedure and Criteria

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

5.2 Noise Measurement Locations

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing equivalent hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (2) Further, FTA guidance states, that it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community. (8)

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (8) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting 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 increase due to the Project's contribution to the ambient noise levels. This approach is necessary to calculate the temporary or permanent increase in *ambient* noise levels as required by the CEQA Guidelines Environmental Checklist.

5.3 Noise Measurement Results

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

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

Location ¹	Description	Energy Average Noise Level (dBA L _{eq}) ²		
		Daytime	Nighttime	
L1	Located west of the site near the residence at 2184 N Oakdale Ave.	57.8	52.7	
L2	Located west of the site near the residence at 2344 Powell Dr.		51.9	
L3	Located east of the site and the UPRR near the residence at 2382 Duffy St.	59.9	59.3	
L4	Located south of the site and the SR 210 near the residence at 1951 Joyce Ave.		66.9	
L5	Located southwest corner of the Project site near the entrance to the River Ranch community.		54.7	
L6	Located west of the site near the residence at 2132 N Oakdale Ave.		53.4	

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

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



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

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

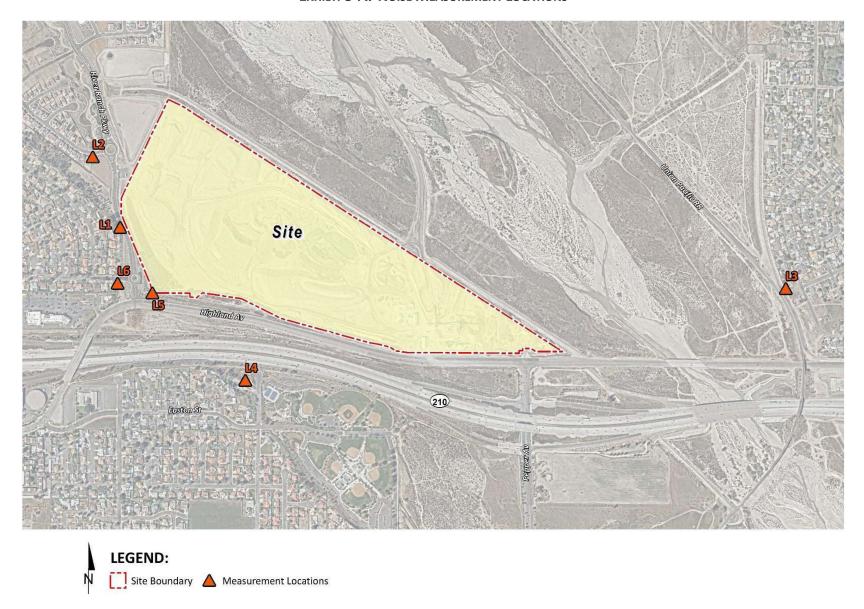


EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



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6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future transportation related noise environment. Consistent with Section 83.01.080[d], Table 83-3 County of San Bernardino Development Code (12), all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (18) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (19) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (20)

6.1.1 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 8 off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the County of San Bernardino General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the *Pepper 210 Commerce Center Traffic Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios (21).

- Existing
- Existing plus Project
- Opening Year Cumulative (OYC) (2029) without Project Conditions
- Opening Year Cumulative (OYC) (2029) with Project Conditions
- Horizon Year (2040) without Project Conditions
- Horizon Year (2040) with Project Conditions

The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent land use, without and with project ADT traffic volumes from the Project traffic analysis.



Since the site is currently developed with an existing use, trip credit has been taken for the existing trips consistent with the Project Traffic Analysis. The Project is anticipated to generate a net total of 3,118 two-way trips per day (actual vehicles) that includes 132 truck trips.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Pepper Av.	s/o Highland Av.	Major	Non-Sensitive	52'	45
2	Pepper Av.	s/o SR-210 EB Ramps	Major	Sensitive	52'	45
3	State St.	n/o Highland Av.	Major	Sensitive	52'	45
4	State St.	s/o Highland Av.	Major	Sensitive	52'	45
5	Highland Av.	w/o Driveway 1	Major	Non-Sensitive	52'	45
6	Highland Av.	w/o Pepper Av.	Major	Non-Sensitive	52'	45
7	Highland Av.	e/o Pepper Av.	Major	Non-Sensitive	52'	45
8	Highland Av.	e/o State St.	Major	Non-Sensitive	52'	45

¹ Pepper 210 Commerce Center Traffic Analysis, Urban Crossroads, Inc.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

			Average Daily Traffic Volumes ¹						
ID	Poodway	Roadway Segment	Existing		OYC (2029)	HY (2040)		
	Noadway		Without Project	With Project	Without Project	With Project	Without Project	With Project	
1	Pepper Av.	s/o Highland Av.	12,006	14,788	17,115	19,897	18,826	21,608	
2	Pepper Av.	s/o SR-210 EB Ramps	25,375	25,843	40,419	40,887	44,461	44,929	
3	State St.	n/o Highland Av.	13,926	13,989	15,683	15,746	17,252	17,314	
4	State St.	s/o Highland Av.	20,772	20,835	23,393	23,455	25,732	25,794	
5	Highland Av.	w/o Driveway 1	9,924	10,080	13,566	13,722	14,922	15,078	
6	Highland Av.	w/o Pepper Av.	9,924	11,452	13,566	15,094	14,922	16,450	
7	Highland Av.	e/o Pepper Av.	16,653	16,965	21,143	21,455	23,258	23,570	
8	Highland Av.	e/o State St.	15,363	15,550	19,641	19,828	21,605	21,792	

¹ Pepper 210 Commerce Center Traffic Analysis, Urban Crossroads, Inc.

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Pepper 210*



² Based on a review of existing aerial imagery.

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

Commerce Center Traffic Analysis. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Wakiala Tuna		Total of Time of		
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	64.01%	16.78%	19.21%	100.00%
Medium Trucks	77.11%	6.43%	16.47%	100.00%
Heavy Trucks	54.00%	3.00%	43.00%	100.00%

¹ Based on the August 11, 2022, directional vehicle classification count collected on Highland Avenue east of Riverside Avenue (Pepper 210 Commerce Center Traffic Analysis, Urban Crossroads, Inc.)

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow ¹			Total	
Classification	Autos	Medium Trucks	Heavy Trucks	Total	
All Segments	97.51%	1.78%	0.72%	100.00%	

¹ Based on the August 11, 2022, directional vehicle classification count collected on Highland Avenue east of Riverside Avenue (Pepper 210 Commerce Center Traffic Analysis, Urban Crossroads, Inc.)

Due to the added Project truck trips, the increase in Project traffic volumes and the distributions of trucks on the study area road segments, the percentage of autos, medium trucks and heavy trucks will vary for each of the traffic scenarios. This explains why the existing and future traffic volumes and vehicle mixes vary between seemingly identical study area roadway segments.

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

			With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Pepper Av.	s/o Highland Av.	97.08%	1.53%	1.38%	100.00%
2	Pepper Av.	s/o SR-210 EB Ramps	97.55%	1.75%	0.70%	100.00%
3	State St.	n/o Highland Av.	97.52%	1.77%	0.71%	100.00%
4	State St.	s/o Highland Av.	97.51%	1.77%	0.71%	100.00%
5	Highland Av.	w/o Driveway 1	97.54%	1.75%	0.70%	100.00%
6	Highland Av.	w/o Pepper Av.	97.84%	1.54%	0.62%	100.00%
7	Highland Av.	e/o Pepper Av.	97.55%	1.75%	0.70%	100.00%
8	Highland Av.	e/o State St.	97.54%	1.76%	0.71%	100.00%

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



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

TABLE 6-6: OYC 2029 WITH PROJECT VEHICLE MIX

			With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Pepper Av.	s/o Highland Av.	97.19%	1.60%	1.21%	100.00%
2	Pepper Av.	s/o SR-210 EB Ramps	97.53%	1.76%	0.71%	100.00%
3	State St.	n/o Highland Av.	97.51%	1.77%	0.71%	100.00%
4	State St.	s/o Highland Av.	97.51%	1.78%	0.71%	100.00%
5	Highland Av.	w/o Driveway 1	97.53%	1.76%	0.71%	100.00%
6	Highland Av.	w/o Pepper Av.	97.76%	1.60%	0.64%	100.00%
7	Highland Av.	e/o Pepper Av.	97.54%	1.75%	0.70%	100.00%
8	Highland Av.	e/o State St.	97.53%	1.76%	0.71%	100.00%

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

TABLE 6-7: HY 2040 WITH PROJECT VEHICLE MIX

			With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Pepper Av.	s/o Highland Av.	97.22%	1.61%	1.17%	100.00%
2	Pepper Av.	s/o SR-210 EB Ramps	97.53%	1.76%	0.71%	100.00%
3	State St.	n/o Highland Av.	97.51%	1.77%	0.71%	100.00%
4	State St.	s/o Highland Av.	97.51%	1.78%	0.71%	100.00%
5	Highland Av.	w/o Driveway 1	97.53%	1.76%	0.71%	100.00%
6	Highland Av.	w/o Pepper Av.	97.74%	1.61%	0.65%	100.00%
7	Highland Av.	e/o Pepper Av.	97.54%	1.76%	0.71%	100.00%
8	Highland Av.	e/o State St.	97.53%	1.76%	0.71%	100.00%

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



7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on *the Pepper 210 Commerce Center Traffic Analysis* prepared by Urban Crossroads, Inc. (21) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental 24-hour dBA CNEL traffic-related noise impacts at receiving land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA CNEL noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 through 7-6 present a summary of the exterior traffic noise levels without barrier attenuation for each traffic condition. Appendix 7.1 includes the traffic noise level contours worksheets for each traffic condition.

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

ID	Road Segment	Comment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
טו	Road	Segment	Land Use ¹	Land Use (dBA)²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	69.7	56	122	262	
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	73.0	RW	111	240	
3	State St.	n/o Highland Av.	Sensitive	70.4	RW	75	161	
4	State St.	s/o Highland Av.	Sensitive	72.1	75	162	350	
5	Highland Av.	w/o Driveway 1	Non-Sensitive	68.9	75	161	347	
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	68.9	170	367	790	
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	71.2	166	358	770	
8	Highland Av.	e/o State St.	Non-Sensitive	70.8	166	358	771	

¹ Based on a review of existing aerial imagery.



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

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

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

ID	Road Segi	Commont	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
l IU	Road	Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	71.6	66	143	307	
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	73.0	83	179	385	
3	State St.	n/o Highland Av.	Sensitive	70.4	55	119	257	
4	State St.	s/o Highland Av.	Sensitive	72.1	72	155	335	
5	Highland Av.	w/o Driveway 1	Non-Sensitive	69.0	RW	96	206	
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	69.3	RW	101	217	
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	71.2	63	135	291	
8	Highland Av.	e/o State St.	Non-Sensitive	70.8	59	128	275	

¹ Based on a review of existing aerial imagery.

TABLE 7-3: OYC 2029 WITHOUT PROJECT CONTOURS

ID		Commont	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
טו	Road	Segment	(dBA) ²	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	71.3	63	136	294	
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	75.0	112	242	521	
3	State St.	n/o Highland Av.	Sensitive	70.9	60	129	277	
4	State St.	s/o Highland Av.	Sensitive	72.6	78	168	362	
5	Highland Av.	w/o Driveway 1	Non-Sensitive	70.3	54	117	252	
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	70.3	54	117	252	
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	72.2	73	157	338	
8	Highland Av.	e/o State St.	Non-Sensitive	71.9	69	150	322	

¹ Based on a review of existing aerial imagery.



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

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

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

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

TABLE 7-4: OYC 2029 WITH PROJECT CONTOURS

ID	Road	G	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
IU	Road	Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	72.6	78	168	362	
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	75.0	113	243	524	
3	State St.	n/o Highland Av.	Sensitive	70.9	60	129	278	
4	State St.	s/o Highland Av.	Sensitive	72.6	78	168	362	
5	Highland Av.	w/o Driveway 1	Non-Sensitive	70.3	55	117	253	
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	70.6	57	122	263	
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	72.2	73	158	341	
8	Highland Av.	e/o State St.	Non-Sensitive	71.9	70	150	324	

¹ Based on a review of existing aerial imagery.

TABLE 7-5: HY 2040 WITHOUT PROJECT CONTOURS

ID	David .	Commont	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
טו	Road	Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	71.7	67	145	313	
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	75.4	120	258	556	
3	State St.	n/o Highland Av.	Sensitive	71.3	64	137	296	
4	State St.	s/o Highland Av.	Sensitive	73.1	83	179	386	
5	Highland Av.	w/o Driveway 1	Non-Sensitive	70.7	58	125	268	
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	70.7	58	125	268	
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	72.6	78	167	361	
8	Highland Av.	e/o State St.	Non-Sensitive	72.3	74	159	343	

¹ Based on a review of existing aerial imagery.



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

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

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

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

TABLE 7-6: HY 2040 WITH PROJECT CONTOURS

ID	Dood Soo	Commont	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
l IU	Road	Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	72.9	82	176	379	
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	75.5	120	259	558	
3	State St.	n/o Highland Av.	Sensitive	71.3	64	137	296	
4	State St.	s/o Highland Av.	Sensitive	73.1	83	179	386	
5	Highland Av.	w/o Driveway 1	Non-Sensitive	70.7	58	125	269	
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	71.0	60	130	280	
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	72.7	78	168	363	
8	Highland Av.	e/o State St.	Non-Sensitive	72.3	74	160	345	

¹ Based on a review of existing aerial imagery.

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the existing traffic scenarios identified in the Traffic Analysis prepared by Urban Crossroads, Inc. However, the analysis of existing off-site traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2029 conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 68.9 to 73.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions ranging from 69.0 to 73.0 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases range from 0.0 to 1.9 dBA CNEL on the study area roadway segments. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience less than significant noise level impacts due to unmitigated Project-related traffic noise levels.

7.3 OYC 2029 TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year Cumulative (OYC) without Project conditions CNEL noise levels. The OYC without Project exterior noise levels range from 70.3 to 75.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the OYC with Project conditions will range from 70.3 to 75.0 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases range from 0.0 to 1.3 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.



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

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

7.4 HORIZON YEAR 2040 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the HY 2040 without Project conditions CNEL noise levels. The HY 2040 without Project exterior noise levels range from 70.7 to 75.4 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the HY 2040 with Project conditions will range from 70.7 to 75.5 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 1.2 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.



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

ID	Road Segment		Receiving		CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²		
טו		Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?			
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	69.7	71.6	1.9	n/a	No		
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	73.0	73.0	0.0	1.5	No		
3	State St.	n/o Highland Av.	Sensitive	70.4	70.4	0.0	1.5	No		
4	State St.	s/o Highland Av.	Sensitive	72.1	72.1	0.0	1.5	No		
5	Highland Av.	w/o Driveway 1	Non-Sensitive	68.9	69.0	0.1	n/a	No		
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	68.9	69.3	0.4	n/a	No		
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	71.2	71.2	0.0	3.0	No		
8	Highland Av.	e/o State St.	Non-Sensitive	70.8	70.8	0.0	3.0	No		

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



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

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

[&]quot;n/a" Per the OPR land use/noise compatibility standards, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 70 dBA CNEL land use compatibility criteria.

TABLE 7-8: OYC 2029 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road Segment		Receiving		CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²		
טו		Segment	Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?		
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	71.3	72.6	1.3	n/a	No		
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	75.0	75.0	0.0	1.5	No		
3	State St.	n/o Highland Av.	Sensitive	70.9	70.9	0.0	1.5	No		
4	State St.	s/o Highland Av.	Sensitive	72.6	72.6	0.0	1.5	No		
5	Highland Av.	w/o Driveway 1	Non-Sensitive	70.3	70.3	0.0	n/a	No		
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	70.3	70.6	0.3	n/a	No		
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	72.2	72.2	0.0	n/a	No		
8	Highland Av.	e/o State St.	Non-Sensitive	71.9	71.9	0.0	n/a	No		

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



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

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

[&]quot;n/a" Per the OPR land use/noise compatibility standards, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 70 dBA CNEL land use compatibility criteria.

TABLE 7-9: HY 2040 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving		CNEL at Receiving Land Use (dBA) ¹			al Noise Level Threshold ²
טו			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Pepper Av.	s/o Highland Av.	Non-Sensitive	71.7	72.9	1.2	n/a	No
2	Pepper Av.	s/o SR-210 EB Ramps	Sensitive	75.4	75.5	0.1	1.5	No
3	State St.	n/o Highland Av.	Sensitive	71.3	71.3	0.0	1.5	No
4	State St.	s/o Highland Av.	Sensitive	73.1	73.1	0.0	1.5	No
5	Highland Av.	w/o Driveway 1	Non-Sensitive	70.7	70.7	0.0	n/a	No
6	Highland Av.	w/o Pepper Av.	Non-Sensitive	70.7	71.0	0.3	n/a	No
7	Highland Av.	e/o Pepper Av.	Non-Sensitive	72.6	72.7	0.1	n/a	No
8	Highland Av.	e/o State St.	Non-Sensitive	72.3	72.3	0.0	n/a	No

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



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

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

[&]quot;n/a" Per the OPR land use/noise compatibility standards, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 70 dBA CNEL land use compatibility criteria.

8 RECEIVER LOCATIONS

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

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

- R1: Location R1 represents the existing noise sensitive residence at 2184 N Oakdale Avenue approximately 140 feet west of the Project site. Receiver R1 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing noise sensitive residence at 2344 Powell Drive, approximately 416 feet west of the Project site. Receiver R2 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 2382 Duffy Street approximately 2,277 feet east of the Project site. Receiver R3 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive residence at 1951 Joyce Avenue, approximately 797 feet south of the Project site. Receiver R4 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment. ambient noise environment.



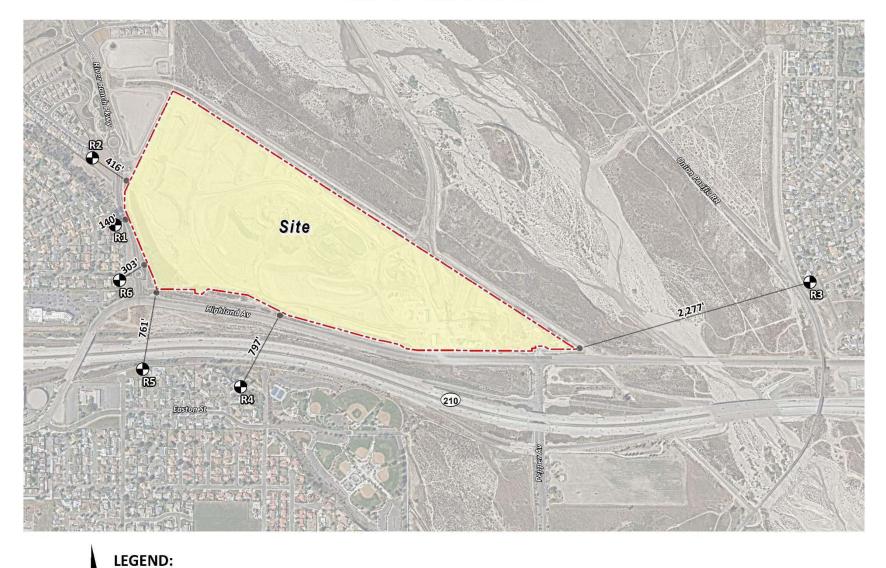


EXHIBIT 8-A: RECEIVER LOCATIONS



Site Boundary Receiver Locations — Distance from receiver to Project site boundary (in feet)

- R5: Location R5 represents the existing noise sensitive residence at 1974 N Oakdale Avenue approximately 761 feet south of the Project site. Receiver R5 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.
- R6: Location R6 represents the existing noise sensitive residence at 2132 N Oakdale Avenue approximately 303 feet west of the Project site. Receiver R6 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L6, to describe the existing ambient noise environment.



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9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Pepper 210 Commerce Center Project. Exhibit 9-A of the Noise Study includes over 58 individual noise sources to fully describe the potential reasonable worst-case noise environment.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. Consistent with similar warehouse uses, the Project business operations would primarily be conducted within the enclosed building, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements.

9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the reasonable worst-case noise environment with the typical noise sources operating at the same time. These sources of noise activity will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precision sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (17)



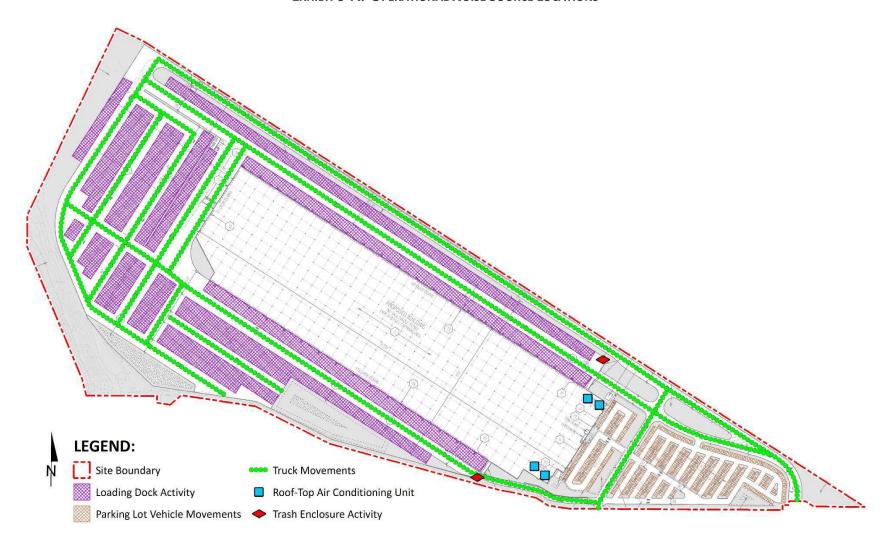


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Reference	Noise Source		n./ ur¹	Reference Noise Level	Sound Power
Noise Source	Height (Feet)	Day	Night	(dBA L _{eq}) @ 50 Feet	Level (dBA)²
Loading Dock Activity	8'	60	60	62.8	103.4
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1
Trash Enclosure Activity	5'	60	30	57.3	89.0
Truck Movements	8'	60	60	59.8	93.2

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

9.2.2 LOADING DOCK ACTIVITY

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

9.2.3 ROOF-TOP AIR CONDITIONING UNITS

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



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

9.2.4 PARKING LOT VEHICLE MOVEMENTS

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

9.2.5 TRASH ENCLOSURE ACTIVITY

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

9.2.6 TRUCK MOVEMENTS

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

9.3 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels. Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (Lw) to describe individual noise sources.

While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute



value that is not affected by the environment. The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the CadnaA noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs including the planned screenwall used to estimate the Project operational noise levels presented in this section.

9.4 Project Operational Noise Levels

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning units, parking lot vehicle activities, trash enclosure activity, and truck movements, Urban Crossroads, Inc. calculated the unmitigated operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 29.7 to 51.4 dBA L_{eq} .

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Opera	Operational Noise Levels by Receiver Location (dBA Leq)							
Noise Source	R1	R2	R3	R4	R5	R6			
Loading Dock Activity	51.1	48.6	28.7	44.8	43.6	46.9			
Roof-Top Air Conditioning Units	17.0	15.8	14.6	22.8	18.3	17.6			
Parking Lot Vehicle Movements	6.9	3.6	15.6	20.0	13.6	8.4			
Trash Enclosure Activity	13.2	12.2	9.6	16.6	12.4	13.8			
Truck Movements	38.8	35.7	20.5	32.7	31.9	35.5			
Total (All Noise Sources)	51.4	48.8	29.7	45.1	43.9	47.2			

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

Table 9-3 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from $29.6 \text{ to } 51.3 \text{ dBA } L_{eq}$. The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1 and Appendix 9.1.



TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Opera	Operational Noise Levels by Receiver Location (dBA Leq)							
Noise Source	R1	R2	R3	R4	R5	R6			
Loading Dock Activity	51.1	48.6	28.7	44.8	43.6	46.9			
Roof-Top Air Conditioning Units	14.6	13.4	12.1	20.4	15.9	15.2			
Parking Lot Vehicle Movements	6.9	3.6	15.6	20.0	13.6	8.4			
Trash Enclosure Activity	9.2	8.2	5.7	12.6	8.4	9.8			
Truck Movements	38.8	35.7	20.5	32.7	31.9	35.5			
Total (All Noise Sources)	51.3	48.8	29.6	45.1	43.9	47.2			

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

9.5 Project Operational Noise Level Compliance

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the County of San Bernardino exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with Pepper 210 Commerce Center will satisfy the exterior noise level standards, adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code Section 83.01.080[e]. Therefore, the operational noise impacts are considered *less than significant* at the nearest noise-sensitive receiver locations.

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location ¹		perational s (dBA Leq) ²		l Standards Leq) ³	Noise Level Standards Exceeded? ⁴		
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
R1	51.4	51.3	57.8	52.7	No	No	
R2	48.8	48.8	58.4	51.9	No	No	
R3	29.7	29.6	59.9	59.3	No	No	
R4	45.1	45.1	69.6 66.9		No	No	
R5	43.9	43.9	58.6	54.7	No	No	
R6	47.2	47.2	58.9	53.4	No	No	

¹ See Exhibit 8-A for the receiver locations.



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

³ Exterior noise level standards, adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code Section 83.01.080[e].

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

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

9.6 Project Operational Noise Level Increases

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

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-5 and 9-6, respectively. As indicated on Table 9-5, the Project will generate a daytime operational noise level increase ranging from 0.0 to 0.9 dBA L_{eq} at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increase ranging from 0.0 to 2.4 dBA L_{eq} at the nearest receiver locations. Project-related operational noise level increases will not exceed the operational noise level increase significance criteria presented in Table 4-1. Therefore, Project related operational noise level increases at the sensitive receiver locations will be *less than significant*.

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	51.3	L1	57.8	58.7	0.9	5.0	No
R2	48.8	L2	58.4	58.9	0.5	5.0	No
R3	29.6	L3	59.9	59.9	0.0	5.0	No
R4	45.1	L4	69.6	69.6	0.0	1.5	No
R5	43.9	L5	58.6	58.7	0.1	5.0	No
R6	47.2	L6	58.9	59.2	0.3	5.0	No

¹ See Exhibit 8-A for the receiver locations.



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

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

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

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	51.3	L1	52.7	55.1	2.4	5.0	No
R2	48.8	L2	51.9	53.6	1.7	5.0	No
R3	29.6	L3	59.3	59.3	0.0	5.0	No
R4	45.1	L4	66.9	66.9	0.0	1.5	No
R5	43.9	L5	54.7	55.0	0.3	5.0	No
R6	47.2	L6	53.4	54.3	0.9	5.0	No

¹ See Exhibit 8-A for the receiver locations.



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

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

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

⁵ Represents the combined ambient conditions plus the Project activities.

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

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

10 CONSTRUCTION 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 noise source locations in relation to the nearest sensitive receiver locations previously described in Section 8. To prevent high levels of construction noise from impacting noise-sensitive land uses, County of San Bernardino Development Code Section 83.01.080[g][3], states that construction activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on any day and limited at any time on Sundays and federal holidays.

10.1 Construction Noise Levels

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

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (22) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.



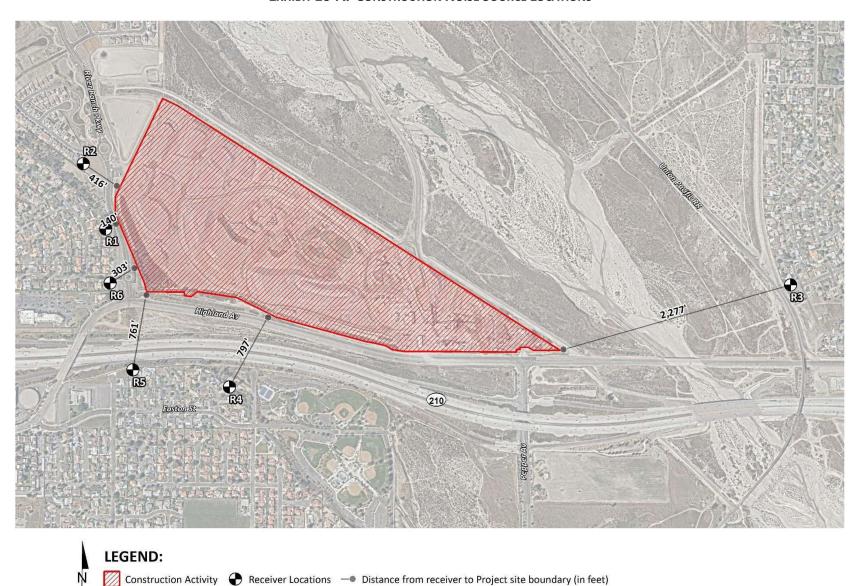


EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS



10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for detailed construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming all equipment operates at the same time. To account for the dynamic nature of construction activities, the CadnaA construction noise analysis evaluates the equipment as multiple moving point sources within the construction area (Project site boundary). Construction impacts are based on the highest noise level calculated at each receiver location. As shown on Table 10-2, the construction noise levels are expected to range from 53.3 to 62.2 dBA Leq at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Equipmnet ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})	Composite Reference Noise Level (dBA L _{eq}) ²	Reference Power Level (dBA L _w) ³	
C'I	Tractor	80			
Site Preparation	Backhoe	74	84.0	115.6	
reputation	Grader	81			
	Scraper	80		114.9	
Grading	Excavator	77	83.3		
	Dozer	78			
	Crane	73		112.2	
Building Construction	Generator	78	80.6		
Construction	Front End Loader	75			
	Paver	74			
Paving	Dump Truck	72	77.8	109.5	
	Roller	73			
	Man Lift	68			
Architectural Coating	Compressor (air)	74	76.2	107.8	
Coating	Generator (<25kVA)	70			

¹ FHWA Road Construction Noise Model.



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

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

TABLE 10-2: ON-SITE CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

		Construction Noise Levels (dBA L _{eq})						
Receiver Location ¹	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²		
R1	56.4	55.7	53.0	50.3	48.6	56.4		
R2	53.2	52.5	49.8	47.1	45.4	53.2		
R3	41.2	40.5	37.8	35.1	33.4	41.2		
R4	53.5	52.8	50.1	47.4	45.7	53.5		
R5	50.0	49.3	46.6	43.9	42.2	50.0		
R6	52.5	51.8	49.1	46.4	44.7	52.5		

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

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

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

TABLE 10-3: PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

D	Construction Noise Levels (dBA Leq)						
Receiver Location ¹	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴				
R1	56.4	80	No				
R2	53.2	80	No				
R3	41.2	80	No				
R4	53.5	80	No				
R5	50.0	80	No				
R6	52.5	80	No				

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

10.6 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities will occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support



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

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

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

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

reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours and are generally limited to the actual building pad area. Since the nighttime concrete pours will take place outside the permitted County of San Bernardino Municipal Code, Section 16.20.125.E.3 hours of 7:00 a.m. to 7:00 p.m. on any day and at any time on Sundays and federal holidays. The Project Applicant will be required to obtain authorization for nighttime work from the County of San Bernardino. Any nighttime construction noise activities shall satisfy the noise limits outlined in Table 3-1.

10.6.1 NIGHTTIME CONCRETE POUR REFERENCE NOISE LEVEL MEASUREMENTS

To estimate the noise levels due to nighttime concrete pouring activities, sample reference noise level measurements were taken during a nighttime concrete pouring at a construction site. Urban Crossroads, Inc. collected short-term nighttime concrete pour reference noise level measurements during the noise-sensitive nighttime hours between 1:00 a.m. to 2:00 a.m. at 27334 San Bernardino Avenue in the City of Redlands. The reference noise levels describe the expected concrete pour noise sources that may include concrete mixer truck movements and pouring activities, concrete paving equipment, rear mounted concrete mixer truck backup alarms, engine idling, air brakes, generators, and workers communicating/whistling. To describe the nighttime concrete pour noise levels associated with the construction of the Pepper 210 Commerce Center, this analysis relies on reference sound pressure level of 67.7 dBA Leq at 50 feet.

10.6.2 NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

As shown on Table 10-4, the noise levels associated with the nighttime concrete pour activities are estimated to range from 25.9 to 41.1 dBA L_{eq} and will satisfy the County of San Bernardino nighttime stationary-source exterior hourly average L_{eq} residential noise level threshold at all the receiver locations. Based on the results of this analysis, all nearest noise receiver locations will experience *less than significant* impacts due to the Project related nighttime concrete pour activities. Appendix 10.2 includes the CadnaA nighttime concrete pour noise model inputs.

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

	Concrete Pour Construction Noise Levels (dBA Leq)						
Receiver Location ¹	Exterior Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴				
R1	41.1	52.7	No				
R2	37.9	51.9	No				
R3	25.9	59.3	No				
R4	38.2	66.9	No				
R5	34.7	54.7	No				
R6	37.2	53.4	No				

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

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



² Nighttime Concrete Pour noise model inputs are included in Appendix 10.2.

³ Exterior nighttime noise level standards, adjusted to reflect the ambient noise levels (see Table 5-1) per the County of San Bernardino Development Code Section 83.01.080[e].

10.7 CONSTRUCTION VIBRATION ANALYSIS

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

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-6 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 140 to 2,277 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.016 in/sec PPV. Based on maximum acceptable continuous vibration threshold of 0.2 PPV (in/sec), the typical Project construction vibration levels will fall below the building damage thresholds at all the noise sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.



TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

	Distance to Const.	Typical Construction Vibration Levels PPV (in/sec) ³						Thresholds	Thresholds
Location ¹	Activity (Feet) ²	Small bulldozer	Jack- hammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level	PPV (in/sec) ⁴	Exceeded? ⁵
R1	140'	0.000	0.003	0.006	0.007	0.016	0.016	0.2	No
R2	416'	0.000	0.001	0.001	0.001	0.003	0.003	0.2	No
R3	2,277'	0.000	0.000	0.000	0.000	0.000	0.000	0.2	No
R4	797'	0.000	0.000	0.000	0.000	0.001	0.001	0.2	No
R5	761'	0.000	0.000	0.000	0.001	0.001	0.001	0.2	No
R6	303'	0.000	0.001	0.002	0.002	0.005	0.005	0.2	No

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



² Distance from receiver to limits of construction activity.

 $^{^{\}rm 3}$ Based on the Vibration Source Levels of Construction Equipment (Table 10-5).

⁴ Section 83.01.090[a] of the County of San Bernardino County Code.

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

[&]quot;PPV" = Peak Particle Velocity

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11 REFERENCES

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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 Pepper 210 Commerce Center Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 584-3148.

Bill Lawson, P.E., INCE Principal URBAN CROSSROADS, INC. 1133 Camelback #8329 Newport Beach, CA 92658 (949) 581-3148 blawson@urbanxroads.com



EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009

AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012

PTP – Professional Transportation Planner • May, 2007 – May, 2013

INCE – Institute of Noise Control Engineering • March, 2004

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

Certified Acoustical Consultant – County of San Diego • March, 2018
Certified Acoustical Consultant – County of Orange • February, 2011
FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013



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APPENDIX 3.1:

COUNTY OF SAN BERNARDINO MUNICIPAL CODE



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CHAPTER 7: NOISE ABATEMENT AND CONTROL

Section

24.0701 Purpose.
24.0702 Definitions.
24.0703 Sound Level Measurements.
24.0704 General Sound Level Limits.
24.0705 Disturbing, Excessive of Offensive Noise.
24.0706 Special Sound Source Standards.
24.0707 Exemptions.
24.0708 Other Public Agency Exception.
24.0709 False Statements.

24.0710 Violations and Penalties.

§ 24.0701 Purpose.

Disturbing, excessive or offensive noise may interfere with a person's right to enjoy life and property and may be detrimental to the public health and safety. The purpose of this Chapter is to regulate noise in the unincorporated area of the County of San Bernardino to promote the public health, comfort, and convenience of its inhabitants and visitors. This Chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.

(Ord. 4361, passed - -2019)

§ 24.0702 Definitions.

The following definitions shall apply to this Chapter:

- (a) **AMBIENT NOISE LEVEL**. The composite of existing noise from all sources at a given location and time. Ambient noise is sometimes referred to as background noise.
- (b) **AVERAGE SOUND LEVEL**. The level in decibels of the mean-square A-weighted sound pressure during a stated time period, with reference to the square of the standard reference sound pressure of 20 micropascals. The **AVERAGE SOUND LEVEL** is equivalent to the industry standard LEQ.
- (c) **AUDIO EQUIPMENT.** A television, stereo, radio, tape player, compact disc player, mp3 player, I-POD, or other similar device.
- (d) **A-WEIGHTED SOUND LEVEL.** The sound level in decibels as measured on a sound level meter using the A-weighted network. The A-weighted network is the network for measuring sound that most closely resembles what the human ear hears. Sound measured using the A-weighted network is designated dB(A).
- (e) **CONSTRUCTION EQUIPMENT.** Tools, machinery, or equipment including "special construction equipment" defined in the Vehicle Code, used in a construction operation on any construction site.
- (f) **DECIBEL.** A unit for measuring the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.
- (g) **DISTURBING, EXCESSIVE, OR OFFENSIVE NOISE.** Any sound or noise that endangers the health or safety of any person, or causes discomfort or annoyance to any reasonable person of normal sensitivity.
- (h) **EMERGENCY WORK.** Work: (1) necessary to restore property to a safe condition following a public calamity; (2) required to protect a person or property from injury or damage; or (3) by a public or private utility to restore utility service.
- (i) **ENFORCEMENT AUTHORITY.** The County of San Bernardino Land Use Services Department, Code Enforcement Division, the San Bernardino County Sheriff's Department, and any other County department designated by the County Chief Executive Officer or Board of Supervisors to enforce the provisions of the County Code and/or this Chapter.
- (j) **MAXIMUM SOUND LEVEL.** The highest sound level reached when measuring noise with a sound level meter using the A-weighted network and slow time weighting. The **MAXIMUM SOUND LEVEL** is equivalent to the industry standard known as LMAX.
 - (k) MOTOR VEHICLE. Any self-propelled vehicle as defined in the Vehicle Code and includes a mini-bike and a go-cart.
- (I) **NEIGHBORING INHABITANT.** Any individual residing within 200 yards of a property that is alleged to be the source of noise in violation of this Chapter.

- (m) OCCUPIED PROPERTY. Property on which there is a building for which a certificate of occupancy has been issued.
- (n) **PLAINLY AUDIBLE.** Any sound that can be detected by a person using his or her unaided hearing faculties. As an example, if the sound source under investigation is a portable or personal vehicular sound amplification or reproduction device, the detection of the rhythmic base component of music is sufficient to verify plainly audible sound. The enforcement authority need not determine the title, specific words, or the artist performing the music.
- (o) **SOUND AMPLIFYING EQUIPMENT.** Any machine or device used to amplify music, the human voice, or any sound such as a loudspeaker, microphone, megaphone, or other similar device.
- (p) **SOUND LEVEL**. The weighted sound pressure level obtained using a sound level meter and frequency weighting network as provided in the American National Standards Institute (ANSI) specifications for sound level meters. As used in this Chapter, **SOUND LEVEL** means the same as "noise level."
- (q) **SOUND LEVEL METER.** An instrument for the measurement of sound levels, which meets or exceeds the requirements pertinent for a type 1 or type 2 meter in the ANSI specifications for sound level meters (ANSI § SI.4 1979, Type 1 or Type 2).

(Ord. 4361, passed - -2019)

§ 24.0703 Sound Level Measurements.

A sound level measurement made pursuant to this Chapter shall be measured:

- (a) At the property line of the nearest site that is occupied, and/or zoned or designated to allow the development of noise-sensitive land uses:
- (b) With a sound level meter that meets the standards of the American National Standards Institute (ANSI § SI.4 1979, Type 1 or Type 2); and
- (c) Using the A-weighted sound level pressure scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).

(Ord. 4361, passed - -2019)

§ 24.0704 General Sound Level Limits.

The general noise standards concerning acceptable noise levels identified in §83.01.080 of this Code, or as subsequently modified or renumbered, are incorporated herein by reference. No person shall create any sound, or allow the creation of any sound, on any property that causes the sound level on any other occupied property to exceed the sound level limits set forth in § 83.01.080 of this Code.

(Ord. 4361, passed - -2019)

§ 24.0705 Disturbing, Excessive or Offensive Noise.

- (a) In addition to the general limitations on sound levels in §24.0704, it shall be unlawful for any person or property owner within the County to make, cause, or allow to be made a noise that would be disturbing, excessive, or offensive to a reasonable person. The types of disturbing, excessive, or offensive noise may include, but shall not be limited to, yelling, shouting, hooting, whistling, singing, playing a musical instrument, or emitting or transmitting any loud music or noise from any audio equipment or sound amplifying equipment.
- (b) The factors, standards, and conditions that may be considered in determining whether a violation of this Section has been committed, include, but are not limited to, the following:
 - (1) The level of the noise.
 - (2) The level and intensity of the background (ambient) noise, if any.
 - (3) The proximity of the noise to residential or commercial sleeping areas.
 - (4) The nature and zoning of the area within which the noise emanates and where it is received.
 - (5) The density of inhabitation of the area within which the noise emanates.
 - (6) The time of day and night the noise occurs.
 - (7) The duration of the noise.
 - (8) Whether the noise is constant, recurrent, or intermittent.
 - (9) Whether the origin of the noise is natural or unnatural.
 - (10) Whether the noise is produced by a commercial or noncommercial activity.
 - (11) The number of complaints received.
 - (c) Unless a noise source is determined to be disturbing, excessive or offensive by the enforcement authority after

responding to or investigating a complaint, evidence of a violation of this Section must be supported by declarations from two neighboring inhabitants residing on separate properties, unless there is only one neighboring inhabitant. These declarations are to be made under penalty of perjury within a 60-day period from the date of the complaint stating in detail all of the following:

- (1) That the declarant is a resident of a residential neighborhood located within 200 yards of the noise source; and
- (2) Within the past 30 days the declarant has heard disturbing, excessive or offensive noise for substantially long periods to the annoyance of the declarant.
- (d) A complainant residing in excess of 200 yards of the noise source may also establish evidence of a violation in accordance with all other requirements of Subdivision (c) above, provided that the complainant can provide the enforcement authority with credible evidence that he, she, or they are experiencing disturbing, excessive, or offensive noise for the enforcement authority to waive the 200 yard requirement. Evidence may include, but is not limited to, tape recordings, videotapes, sound monitoring logs, photographs, maps, or declarations of other persons.
- (e) Whether the sound or noise identified by a declarant endangers the health or safety of any person, or causes discomfort or annoyance to a reasonable person of normal sensitivity, will be determined by the enforcement authority. Declarants should provide additional credible evidence in support of their declaration, which may include, but is not limited to, tape recordings, videotapes, sound monitoring logs, photographs, maps, or declarations of other persons.

(Ord. 4361, passed - -2019)

§ 24.0706 Special Sound Source Standards.

The general sound level limits in §24.0704 and disturbing, excessive or offensive noise in §24.0705 apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of those sections. In addition, there is a reasonable expectation that certain hours of the evening and early morning will be even quieter and more peaceful than other hours of the day and that certain sound sources occurring during this time period causes discomfort or annoyance to reasonable persons of normal sensitivities. As a result of that expectation, the following special sound sources are subject to the following additional standards, the failure to comply with which constitutes a separate violation of this Chapter and have been declared to be disturbing, excessive, or offensive noise. A noise source is established as a per se violation of this Section in the same manner as provided in Subdivision (c) of § 24.0705.

- (a) Audio Equipment. No person shall operate, or allow the operation of, any audio equipment, whether portable or not, between the hours of 10:00 p.m. and 7:00 a.m. such that the equipment is plainly audible inside an occupied dwelling other than a dwelling in which the equipment may be located. Sound level measurements may be used, but are not required, to establish a violation of this Subdivision.
- (b) Sound Amplifying Equipment and Live Music. No person shall install, use or operate sound amplifying equipment, or perform, or allow to be performed, live music, between the hours of 10:00 p.m. and 7:00 a.m. such that the sound amplifying equipment or live music is plainly audible inside an occupied dwelling other than a dwelling in which the sound source is located. Sound level measurements may be used, but are not required, to establish a violation of this Subdivision.
- (c) Power Tools and Equipment. Except for emergency work, no person shall operate any power tools or equipment between the hours of 10:00 p.m. and 7:00 a.m. such that the power tools or equipment are plainly audible inside an occupied dwelling other than a dwelling in which the power tools or equipment may be located. Sound level measurements may be used, but are not required, to establish a violation of this Subdivision.
- (d) Construction Activity. Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment between 7:00 p.m. and 7:00 a.m.

(Ord. 4361, passed - -2019)

§ 24.0707 Exemptions.

The following activities shall be exempted from the provisions of this Chapter:

- (a) Emergency Work. Noise sources associated with alerting persons to the existence of an emergency or in the performance of emergency work.
- (b) School Sponsored Activities. Noise sources emanating from authorized school bands, school athletic and school entertainment events.
 - (c) Federal or State Preempted Activities Any activity the noise level of which is regulated by State or Federal law.
- (d) *Minor Maintenance to Residential Property.* Noise sources associated with minor maintenance to property used for residential purposes, including, but not limited to, lawnmowers, leaf blowers, etc., provided the activities take place between the hours of 7:00 a.m. and 7:00 p.m.
- (e) Public Health, Welfare, and Safety Activities. Noise sources associated with construction, maintenance, and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interest of the public and to protect the public health, welfare, and safety, including but not limited to, trash collection, street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic

signals, unplugging sewers, vacuuming catch basins, repairing of damaged poles, removing abandoned vehicles, repairing water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, or sidewalks, and the executing of official duties by public safety personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationery or mobile.

- (f) Animals. The provisions of this Chapter shall not apply to any noise sources associated with barking dogs or other intermittent noises made by animals on any property within the County. Such noise shall be subject to the provisions of § 32.0119 (Animals Which Habitually Make Noise) of this Code.
- (g) Agriculture Operations. Noise sources associated with mechanical devices, apparatus, or equipment associated with agriculture operations, provided that each piece of equipment or machinery powered by an internal-combustion engine is equipped with appropriate muffler and/or air intake silencer in good working order and the operations and equipment are utilized for the preparation, planting, harvesting, protection, or salvage of agricultural crops.
- (h) Authorized Events. Noise sources associated with outdoor gatherings, public dances, shows, sporting and entertainment events and other similar events, provided the activity is conducted pursuant to a permit or license issued by the appropriate jurisdiction and contain acoustic and/or noise standard conditions of approval. This Subdivision is not intended to excuse the act of an individual not participating in the event who violates this Chapter.

(Ord. 4361, passed - -2019)

§ 24.0708 Other Public Agency Exception.

The provisions of this Chapter shall not be construed to prohibit any work at different hours by or under the direction of any other public agency or public or private utility companies in cases of necessity or emergency.

(Ord. 4361, passed - -2019)

§ 24.0709 False Statements.

No person shall knowingly provide false information, either orally or in writing, to the enforcement authority related to the enforcement of this Chapter.

(Ord. 4361, passed - -2019)

§ 24.0710 Violations and Penalties.

- (a) Any person found by the enforcement authority to have negligently or knowingly violated any provision of this Chapter may be charged with an infraction. Any person found by the enforcement authority to have negligently or knowingly violated any provision of this Chapter more than once within a 180-day period may be charged with a misdemeanor. Each day a violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.
- (b) All violations of this Chapter may be enforced by the enforcement authority and addressed through the institution of a criminal action, a civil action, and/or an administrative action as set forth in Chapter 2 of Division 1 of Title 1 (Violations and Enforcement) of this Code or as otherwise provided by law. Pursuant to Cal. Penal Code § 836.5, any peace officer of the San Bernardino County Sheriff's Department may arrest a person without a warrant if he or she has reasonable cause to believe that the person has committed a misdemeanor in his or her presence that violates this Chapter.
- (c) Any violation of this Chapter is declared to be a public nuisance and may be abated in accordance with law, including but not limited to by a restraining order or injunction issued by a court of competent jurisdiction.

(Ord, 4361, passed - -2019)

§ 83.01.080 Noise.

This Section establishes standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses.

- (a) Noise Measurement. Noise shall be measured:
- (1) At the property line of the nearest site that is occupied by, and/or zoned or designated to allow the development of noise-sensitive land uses;
- (2) With a sound level meter that meets the standards of the American National Standards Institute (ANSI § SI4 1979, Type 1 or Type 2);
- (3) Using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micronewtons per meter squared). The unit of measure shall be designated as dB(A).
- (b) Noise Impacted Areas. Areas within the County shall be designated as "noise-impacted" if exposed to existing or projected future exterior noise levels from mobile or stationary sources exceeding the standards listed in Subdivision (d) (Noise Standards for Stationary Noise Sources) and Subdivision (e) (Noise Standards for Adjacent Mobile Noise Sources), below. New development of residential or other noise-sensitive land uses shall not be allowed in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to these standards. Noise-sensitive land uses shall include residential uses, schools, hospitals, nursing homes, religious institutions, libraries, and similar uses.
 - (c) Noise Standards for Stationary Noise Sources.
- (1) Noise Standards. Table 83-2 (Noise Standards for Stationary Noise Sources) describes the noise standard for emanations from a stationary noise source, as it affects adjacent properties:

	Table 83-2	
Noise	Standards for Stationary Noise S	Sources
Affected Land Uses (Receiving Noise)	7:00 a.m 10:00 p.m. Leq	10:00 p.m 7:00 a.m. Leq
	Table 83-2	
Noise	Standards for Stationary Noise S	Sources
Affected Land Uses (Receiving Noise)	7:00 a.m 10:00 p.m. Leq	10:00 p.m 7:00 a.m. Leq
Residential	55 dB(A)	45 dB(A)
Professional Services	55 dB(A)	55 dB(A)
Other Commercial	60 dB(A)	60 dB(A)
Industrial	70 dB(A)	70 dB(A)

Leq = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period, typically one, eight or 24 hours.

dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.

Ldn = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10:00 p.m. to 7:00 a.m.). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.

- (2) Noise Limit Categories. No person shall operate or cause to be operated a source of sound at a location or allow the creation of noise on property owned, leased, occupied, or otherwise controlled by the person, which causes the noise level, when measured on another property, either incorporated or unincorporated, to exceed any one of the following:
- (A) The noise standard for the receiving land use as specified in Subdivision (b) (Noise-Impacted Areas), above, for a cumulative period of more than 30 minutes in any hour.
 - (B) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour.
 - (C) The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour.

- (D) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour.
- (E) The noise standard plus 20 dB(A) for any period of time.
- (d) Noise Standards for Adjacent Mobile Noise Sources. Noise from mobile sources may affect adjacent properties adversely. When it does, the noise shall be mitigated for any new development to a level that shall not exceed the standards described in the following Table 83-3 (Noise Standards for Adjacent Mobile Noise Sources).

	Table 83-3		
	Noise Standards for Adjacent Mobile Noise	Sources	
	Land Use	Ldn (or CN	IEL) dB(A)
Categories	Uses	Interior (1)	Exterior (2)
	Table 83-3		
	Noise Standards for Adjacent Mobile Noise	Sources	
	Land Use	Ldn (or C	NEL) dB(A)
Categories	Uses	Interior ⁽¹⁾	Exterior (2)
Residential	Single and multi-family, duplex, mobile homes	45	60 ⁽³⁾
Commercial	Hotel, motel, transient housing	45	60 ⁽³⁾
	Commercial retail, bank, restaurant	50	N/A
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	N/A
Institutional/Public	Hospital, nursing home, school classroom, religious institution, library	45	65
Open Space	Park	N/A	65

Notes:

- (1) The indoor environment shall exclude bathrooms, kitchens, toilets, closets and corridors.
- (2) The outdoor environment shall be limited to:
 - Hospital/office building patios
 - · Hotel and motel recreation areas
 - Mobile home parks
 - Multi-family private patios or balconies
 - · Park picnic areas
 - Private yard of single-family dwellings
 - School playgrounds
- (3) An exterior noise level of up to 65 dB(A) (or CNEL) shall be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB(A) (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level shall necessitate the use of air conditioning or mechanical ventilation.

CNEL = (Community Noise Equivalent Level). The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

- (e) Increases in Allowable Noise Levels. If the measured ambient level exceeds any of the first four noise limit categories in Subdivision (d)(2), above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the ambient noise level exceeds the fifth noise limit category in Subdivision (d)(2), above, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.
- (f) Reductions in Allowable Noise Levels. If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in Table 83-2 (Noise Standards for Stationary Noise Sources) shall be reduced by five dB(A).
- (g) Exempt Noise. The following sources of noise shall be exempt from the regulations of this Section:

- (1) Motor vehicles not under the control of the commercial or industrial use.
- (2) Emergency equipment, vehicles, and devices.
- (3) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.
- (h) Noise Standards for Other Structures. All other structures shall be sound attenuated against the combined input of all present and projected exterior noise to not exceed the criteria.

Table 83-4	
Noise Standards for Other Struc	tures
Typical Uses	12-Hour Equivalent Sound Level (Interior) in dBA Ldn
Educational, institutions, libraries, meeting facilities, etc.	45
General office, reception, etc.	50
Retail stores, restaurants, etc.	55
Other areas for manufacturing, assembly, testing, warehousing, etc.	65

In addition, the average of the maximum levels on the loudest of intrusive sounds occurring during a 24-hour period shall not exceed 65 dBA interior.

(Ord. 4011, passed - -2007; Am. Ord. 4245, passed - -2014)

§ 83.01.090 Vibration.

- (a) Vibration Standard. No ground vibration shall be allowed that can be felt without the aid of instruments at or beyond the lot line, nor shall any vibration be allowed which produces a particle velocity greater than or equal to two-tenths inches per second measured at or beyond the lot line.
- (b) Vibration Measurement. Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity, or acceleration. Readings shall be made at points of maximum vibration along any lot line next to a parcel within a residential, commercial and industrial land use zoning district.
 - (c) Exempt Vibrations. The following sources of vibration shall be exempt from the regulations of this Section.
 - (1) Motor vehicles not under the control of the subject use.
- (2) Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

(Ord. 4011, passed - -2007)

APPENDIX 5.1:

STUDY AREA PHOTOS



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14324_L1_F 1.North 34, 8' 19.950000", 117, 21' 57.730000"



14324_L1_F 3.East 34, 8' 19.920000", 117, 21' 57.670000"



14324_L1_F 2.South 34, 8' 19.930000", 117, 21' 57.730000"



14324_L1_F 4.West 34, 8' 19.780000", 117, 21' 57.840000"



14324_L2_J 1.North 34, 8' 29.380000", 117, 22' 1.080000"



14324_L2_J 3.East 34, 8' 29.090000", 117, 22' 1.080000"



14324_L2_J 2.South 34, 8' 29.090000", 117, 22' 1.080000"



14324_L2_J 4.West 34, 8' 29.130000", 117, 22' 1.270000"



14324_L3_O 1.North 34, 8' 17.090000", 117, 20' 40.910000"



14324_L3_O 3.East 34, 8' 17.080000", 117, 20' 40.410000"



14324_L3_O 2.South 34, 8' 16.990000", 117, 20' 40.710000"



14324_L3_O 4.West 34, 8' 17.040000", 117, 20' 40.580000"



14324_L4_L 1.North 34, 8' 8.560000", 117, 21' 42.370000"



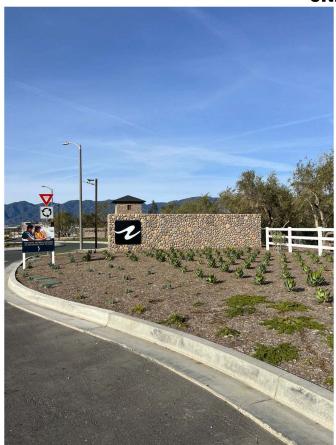
14324_L4_L 3.East 34, 8' 8.480000", 117, 21' 42.430000"



14324_L4_L 2.South 34, 8' 8.450000", 117, 21' 42.400000"



14324_L4_L 4.West 34, 8' 8.450000", 117, 21' 42.730000"



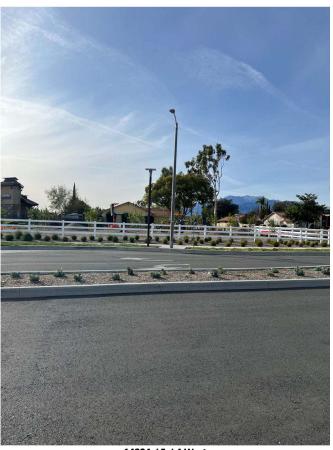
14324_L5_I 1.North 34, 8' 16.130000", 117, 21' 56.080000"



14324_L5_I 3.East 34, 8' 16.130000", 117, 21' 56.050000"



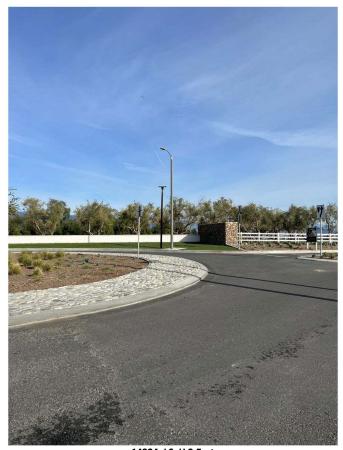
14324_L5_l 2.South 34, 8' 16.100000", 117, 21' 56.080000"



14324_L5_I 4.West 34, 8' 16.140000", 117, 21' 56.080000"



14324_L6_H 1.North 34, 8' 17.250000", 117, 21' 57.230000"



14324_L6_H 3.East 34, 8' 17.150000", 117, 21' 57.180000"



14324_L6_H 2.South 34, 8' 17.150000", 117, 21' 57.180000"



14324_L6_H 4.West 34, 8' 17.240000", 117, 21' 57.320000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS



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24-Hour Noise Level Measurement Summary Date: Friday, February 17, 2023 Location: L1 - Located west of the site near the residence at 2184 Meter: Piccolo II JN: 14324 Project: Pepper 210 Source: Oakdale Ave. Analyst: Z. Ibrahim Hourly L ea dBA Readings (unadjusted) 85.0 80.0 75.0 (dBA) 70.0 65.0 60.0 50.0 8 50.8 45.0 27 50.4 40.0 35.0 0 2 3 5 7 8 9 10 13 18 20 22 23 1 6 11 12 14 15 16 17 19 21 **Hour Beginning** Adj. L eq L1% L2% L5% L50% L95% Timeframe Hour L_{eq} L max L_{min} L8% L25% L90% L99% L_{eq} Adj. 45.5 53.5 42.8 53.0 52.1 49.8 48.4 44.0 43.0 42.8 45.5 10.0 55.5 0 45.1 43.1 1 45.3 50.6 43.5 49.9 49.2 47.9 47.2 45.5 43.7 43.6 45.3 10.0 55.3 44.8 43.9 2 44.4 42.5 47.8 46.3 42.7 42.6 44.4 10.0 54.4 51.4 51.0 50.3 44.2 43.4 42.8 Night 44.5 10.0 3 50.5 59.7 44.4 59.1 58.3 55.9 54.5 50.5 47.9 45.3 44.9 50.5 60.5 4 53.3 61.8 45.7 61.2 57.4 53.8 46.4 45.9 53.3 10.0 63.3 60.4 58.8 50.8 47.0 5 48.1 47.8 10.0 53.2 62.9 47.7 62.4 61.7 59.0 57.2 52.7 50.4 48.4 53.2 63.2 59.3 68.6 50.2 68.0 67.3 65.4 64.0 59.6 56.0 51.5 51.0 50.5 59.3 10.0 69.3 59.0 68.4 50.0 67.9 67.2 65.1 63.6 59.1 55.4 51.2 50.7 50.1 59.0 0.0 59.0 70.5 8 61.5 52.0 69.9 69.1 67.3 66.1 62.0 58.6 53.6 52.9 52.2 61.5 0.0 61.5 9 64.2 73.0 72.6 71.9 70.3 69.1 64.9 64.2 53.1 60.7 55.3 54.3 53.4 64.2 0.0 10 60.7 70.4 51.9 69.8 68.9 66.7 65.1 61.0 57.2 53.1 52.6 52.0 60.7 0.0 60.7 11 58.8 68.0 50.7 67.4 66.7 64.8 63.5 59.1 55.4 51.8 51.3 50.8 58.8 0.0 58.8 12 57.5 50.5 50.0 49.5 57.5 57.5 66.5 49.4 66.0 65.3 63.5 62.2 57.8 54.4 0.0 13 57.1 67.5 48.2 67.0 66.2 63.4 61.5 56.5 53.3 49.4 48.9 48.3 57.1 0.0 57.1 58.9 47.6 54.3 Day 14 54.3 63.4 46.8 63.0 62.3 60.3 54.2 51.1 48.0 46.9 0.0 54.3 15 52.9 62.5 46.0 62.2 61.5 59.2 57.3 52.4 49.6 47.1 46.6 46.2 52.9 0.0 52.9 16 52.1 60.5 60.1 59.4 57.4 56.1 52.3 49.7 47.3 46.9 46.5 52.1 0.0 52.1 46.4 17 51.9 60.6 45.5 60.1 59.4 57.4 56.2 52.2 49.0 46.3 46.0 45.6 51.9 0.0 51.9 18 50.4 57.6 47.1 57.3 47.6 47.4 47.2 50.4 0.0 50.4 56.7 54.9 53.6 50.3 48.8 19 50.8 58.6 46.3 58.1 57.5 55.7 54.5 51.1 48.8 46.9 46.7 46.4 50.8 5.0 55.8 20 50.4 58.1 45.9 57.6 57.1 55.3 54.1 50.9 48.4 46.6 46.3 46.0 50.4 5.0 55.4 21 51.6 57.9 46.7 57.5 57.0 56.0 55.3 52.3 50.2 47.8 47.3 46.8 51.6 5.0 56.6 22 50.2 57.0 56.3 54.8 53.7 50.5 48.6 46.5 46.2 50.2 10.0 60.2 46.1 56.7 46.8 Night 23 48.2 54.7 44.9 54.4 53.8 52.5 51.3 48.5 46.7 45.5 45.3 45.0 48.2 10.0 58.2 Leq (dBA) Timeframe Hour L max L1% L2% L5% L8% L25% L50% L90% L95% L99% L eq L min 24-Hour Min 50.4 57.6 45.5 57.3 56.7 54.9 53.6 50.3 48.4 46.3 46.0 45.6 Daytime Nighttime Day **CNEL** Max 64.2 73.0 53.1 72.6 71.9 70.3 69.1 64.9 60.7 55.3 54.3 53.4 (7am-10pm) (10pm-7am) **Energy Average** 57.8 Average 63.8 63.1 61.1 59.8 55.7 52.7 49.5 49.0 48.5 60.4 57.8 **52.7** Min 44.4 50.6 42.5 49.9 49.2 47.8 46.3 44.2 43.4 42.8 42.7 42.6 Night 59.3 68.0



64.0

53.3

59.6

50.0

56.0

48.1

51.5

46.0

51.0

45.7

50.5

45.4

68.6

Average:

50.2

57.3

67.3

56.6

65.4

54.7

Max

52.7

Energy Average

24-Hour Noise Level Measurement Summary Date: Friday, February 17, 2023 Location: L2 - Located west of the site near the residence at 2344 Powell Meter: Piccolo II JN: 14324 Project: Pepper 210 Source: Dr. Analyst: Z. Ibrahim Hourly L eg dBA Readings (unadjusted) 85.0 80.0 75.0 (dBA) 70.0 65.0 60.0 63. 62 50.0 59 49.5 46.8 45.0 39 6 6 Ö 40.0 35.0 0 2 3 5 7 8 9 10 13 20 22 23 1 4 6 11 12 14 15 16 17 18 19 21 **Hour Beginning** Adj. L eq L1% L5% L95% Timeframe Hour L_{eq} L max L_{min} L2% L8% L25% L50% L90% L99% L_{eq} Adj. 37.5 33.7 43.5 42.2 40.9 34.3 33.8 37.5 47.5 0 44.6 44.1 37.7 36.0 34.1 10.0 1 39.7 45.0 44.4 43.8 42.8 42.1 37.3 36.9 39.7 10.0 49.7 36.8 40.1 39.0 37.5 2 40.7 33.3 36.7 10.0 36.7 44.3 33.2 43.8 43.4 42.0 36.1 34.7 33.7 33.5 46.7 Night 41.5 3 49.7 58.5 41.2 57.6 56.7 55.3 54.2 50.4 46.9 42.8 42.3 49.7 10.0 59.7 4 55.3 64.2 45.9 63.7 59.6 46.1 55.3 10.0 65.3 62.5 60.4 56.2 53.0 47.3 46.7 5 44.4 10.0 52.4 61.6 44.2 60.8 59.9 58.1 56.6 52.9 49.7 45.8 45.1 52.4 62.4 58.5 66.4 50.4 65.7 65.0 63.6 62.6 59.4 56.2 52.0 51.4 50.7 58.5 10.0 68.5 60.4 68.8 52.3 68.2 67.7 66.1 64.9 60.6 57.6 53.5 52.9 52.4 60.4 0.0 60.4 8 63.0 70.8 52.4 70.1 69.5 68.1 67.3 64.1 61.4 54.5 53.7 52.7 63.0 0.0 63.0 9 71.3 70.5 68.3 63.1 53.0 69.9 67.3 64.2 60.9 55.4 54.5 53.3 63.1 0.0 63.1 10 62.5 71.2 52.9 70.4 69.8 68.1 67.0 63.1 59.9 54.9 54.2 53.2 62.5 0.0 62.5 11 59.5 69.2 50.0 68.3 67.3 65.3 63.8 59.7 56.7 52.4 50.4 59.5 0.0 59.5 51.4 12 59.4 67.3 50.5 49.3 59.4 49.1 66.7 66.2 65.1 64.5 61.6 54.3 50.0 0.0 59.4 13 54.5 62.9 45.8 62.3 61.8 60.4 59.3 55.1 51.3 47.3 46.7 46.0 54.5 0.0 54.5 45.3 Day 14 54.2 61.8 45.0 61.2 60.8 59.6 58.8 55.5 51.4 47.0 46.3 54.2 0.0 54.2 15 49.5 58.4 41.5 58.0 57.3 55.2 53.9 49.9 46.4 42.9 42.3 41.6 49.5 0.0 49.5 16 58.8 65.2 64.5 58.4 47.2 46.2 58.8 58.8 46.0 64.9 63.4 62.7 60.6 46.7 0.0 17 50.4 59.1 40.9 58.7 58.2 57.0 56.3 49.9 46.2 42.5 41.9 41.2 50.4 0.0 50.4 18 47.2 50.7 43.9 43.5 43.1 47.2 47.2 54.1 43.0 53.7 53.2 52.1 47.4 45.6 0.0 19 49.4 59.1 40.9 58.3 57.5 55.0 53.5 49.5 46.4 42.7 42.0 41.2 49.4 5.0 54.4 20 47.9 56.8 40.6 56.2 55.6 53.7 52.4 48.2 44.9 41.8 41.3 40.8 47.9 5.0 52.9 21 46.8 55.5 38.7 54.9 54.2 52.6 51.4 47.1 44.0 40.2 39.5 38.8 46.8 5.0 51.8 22 46.5 54.9 39.4 54.3 53.7 47.0 44.4 40.5 40.1 39.6 10.0 56.5 51.9 50.6 46.5 Night 23 42.2 50.4 35.6 49.8 49.2 47.8 46.8 36.4 36.1 35.7 42.2 52.2 42.7 39.5 10.0 Leq (dBA) Hour L max L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% Timeframe L eq 24-Hour Daytime Min 46.8 54.1 38.7 53.7 53.2 52.1 50.7 47.1 44.0 40.2 39.5 38.8 Nighttime Day **CNEL** Max 63.1 71.3 53.0 70.5 69.9 68.3 67.3 64.2 61.4 55.4 54.5 53.3 (7am-10pm) (10pm-7am) 58.4 Average 62.8 62.2 60.7 59.6 55.8 52.4 47.8 47.1 46.4 **Energy Average**



58.4

51.9

60.1

33.3

50.7

40.2

40.7

62.6

50.5

36.1

59.4

46.9

34.7

56.2

44.4

33.7

52.0

41.1

33.5

51.4

40.7

44.3

66.4

Average:

33.2

50.4

43.8

65.7

53.8

43.4

65.0

53.1

42.0

63.6

51.6

Min

Max

Energy Average

Night

36.7

58.5

51.9

24-Hour Noise Level Measurement Summary

Date: Friday, February 17, 2023 Location: L3 - Located east of the site and the UPRR near the residence Meter: Piccolo II

JN: 14324 Source: at 2382 Duffy St. Project: Metro Westwood UCLA Analyst: Z. Ibrahim

Hourly L eq dBA Readings (unadjusted) Honrly Lea (dBA) (4BB) (64.3 62.8 **Hour Beginning**

Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L eq	Adj.	Adj. L _{eq}
	0	46.0	51.2	42.4	50.8	50.4	49.5	49.0	46.5	44.9	43.4	43.0	42.5	46.0	10.0	56.0
	1	62.8	70.3	56.1	69.9	69.4	68.3	67.4	62.7	60.4	57.6	57.2	56.4	62.8	10.0	72.8
	2	44.2	55.3	37.8	55.0	54.4	50.7	47.5	42.1	40.6	38.7	38.3	37.9	44.2	10.0	54.2
Night	3	44.4	51.3	40.2	50.8	50.1	48.5	47.6	44.9	43.0	41.1	40.7	40.3	44.4	10.0	54.4
	4	48.0	52.9	44.4	52.5	52.0	51.0	50.4	48.6	47.2	45.5	45.1	44.6	48.0	10.0	58.0
	5	61.6	69.9	52.6	69.5	69.2	67.7	67.0	61.8	58.0	53.8	53.4	52.8	61.6	10.0	71.6
	6	62.2	69.6	56.4	69.1	68.6	67.4	66.2	62.7	60.7	57.7	57.2	56.6	62.2	10.0	72.2
	7	54.3	62.0	47.1	61.4	60.7	58.9	57.9	55.4	52.6	49.0	48.4	47.5	54.3	0.0	54.3
	8	63.5	72.4	56.7	72.1	71.8	70.4	68.7	62.6	59.7	57.5	57.0	56.8	63.5	0.0	63.5
	9	62.8	70.3	53.5	69.9	69.2	68.1	67.3	63.7	60.5	55.9	55.4	53.9	62.8	0.0	62.8
	10	51.0	61.2	45.1	60.4	59.4	57.0	55.0	50.3	48.1	46.0	45.7	45.2	51.0	0.0	51.0
	11	51.3	62.5	44.4	61.7	60.6	57.4	55.0	50.4	47.8	45.4	45.1	44.6	51.3	0.0	51.3
	12	60.3	69.2	53.2	68.7	68.0	66.3	65.1	60.0	57.7	54.3	54.0	53.3	60.3	0.0	60.3
_	13	54.2	66.2	44.9	65.8	64.8	60.4	58.4	51.9	48.9	46.0	45.6	45.1	54.2	0.0	54.2
Day	14	54.5	66.0	44.7	65.2	64.2	61.1	59.1	53.1	49.9	46.2	45.7	45.0	54.5	0.0	54.5
	15	64.5	73.5	50.9	73.1	72.8	71.8	70.1	64.0	60.7	53.9	52.0	51.1	64.5	0.0	64.5
	16	57.4	69.9	45.1	69.5	68.6	65.0	61.9	53.6	50.1	46.5	45.9	45.3	57.4	0.0	57.4
	17	51.5	62.2	45.3	61.4	60.1	57.6	55.5	50.6	48.4	46.3	45.9	45.5	51.5	0.0	51.5
	18	62.9	72.0	55.9	71.3	70.9	69.4	67.9	62.4	59.7	56.9	56.3	56.0	62.9	0.0	62.9
	19	52.9	62.5	44.6	62.1	61.7	60.1	58.5	51.6	48.3	45.6	45.3	44.8	52.9	5.0	57.9
	20	64.3	71.6	56.8	71.2	70.7	69.3	68.6	64.8	62.2	58.3	57.7	57.0	64.3	5.0	69.3
	21	52.4	63.3	46.3	62.8	62.1	59.0	56.4	50.4	48.7	47.0	46.7	46.4	52.4	5.0	57.4
Night	22	63.0	71.7	55.8	71.2	70.6	69.0	67.8	62.5	60.1	57.0	56.6	56.0	63.0	10.0	73.0
T	23	57.3	62.1	54.6	61.7	61.3	60.4	59.5	57.6	56.7	55.3	55.1	54.7	57.3	10.0	67.3
Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour		dBA) Nighttime
Day	Min	51.0	61.2 73.5	44.4	60.4	59.4	57.0	55.0	50.3	47.8 62.2	45.4	45.1	44.6	CNEL	Daytime	_
Energy /	Max	64.5 59.9	/3.5 Aver	56.8	73.1 66.4	72.8 65.7	71.8 63.4	70.1 61.7	64.8 56.3	53.5	58.3 50.3	57.7 49.8	57.0 49.2		(7am-10pm)	(10pm-7am)
	Min	44.2	51.2	37.8	50.8	50.1	48.5	47.5	42.1	40.6	38.7	38.3	37.9	66.1	59.9	59.3
Night	Max	63.0	71.7	56.4	71.2	70.6	69.0	67.8	62.7	60.7	57.7	56.5 57.2	56.6	00.1	33.3	33.3
Energy		59.3	Aver		61.2	60.6	59.2	58.0	54.4	52.4	50.0	49.6	49.1			
Lifeigy	Average	J3.3	AVCI	age.	01.2	00.0	33.2	J8.0	J4.4	J 32.4	30.0	43.0	43.1			



24-Hour Noise Level Measurement Summary Date: Friday, February 17, 2023 Location: L4 - Located south of the site and the SR 210 near the Meter: Piccolo II JN: 14324 Project: Pepper 210 Source: residence at 1951 Joyce Ave. Analyst: Z. Ibrahim Hourly L ea dBA Readings (unadjusted) 85.0 80.0 75.0 (dBA) 70.0 65.0 65.0 50.0 45.0 40.0 35.0 0 2 3 4 5 7 8 9 10 12 13 18 19 20 21 22 23 1 6 11 14 15 16 17 **Hour Beginning** Adj. L eq L1% L2% L5% L50% L95% L99% Timeframe Hour L_{eq} L max L_{min} L8% L25% L90% L_{eq} Adj. 63.5 56.5 69.0 66.8 58.7 63.5 10.0 73.5 0 69.3 68.7 67.7 64.5 62.6 57.7 56.7 1 63.0 68.6 66.3 63.9 58.0 57.1 56.1 63.0 10.0 73.0 68.9 55.8 68.4 67.4 61.9 2 55.1 66.2 56.1 55.3 62.8 10.0 72.8 62.8 69.0 68.7 68.4 67.3 63.8 61.6 57.2 Night 58.3 74.6 3 64.6 70.0 58.1 69.7 69.4 68.7 67.8 65.7 63.6 60.1 59.1 64.6 10.0 4 72.3 72.0 71.6 70.0 62.8 62.2 67.2 10.0 77.2 67.2 62.0 70.7 68.1 66.4 63.4 5 68.5 64.7 68.5 10.0 72.8 64.5 72.5 72.2 71.5 70.9 69.3 68.0 65.8 65.3 78.5 70.5 74.3 67.0 74.0 73.7 73.1 72.6 71.3 70.2 68.2 67.6 67.2 70.5 10.0 80.5

72.8

72.7

72.9

72.8

72.0

71.3

71.1

70.5

69.3

70.8

70.3

70.3

71.0

71.2

71.4

70.7

69.0

L8%

69.3

72.9

71.4

66.2

72.6

68.9

71.6

71.4

71.6

71.5

70.6

70.1

69.9

69.4

68.2

69.3

68.9

68.2

69.4

69.8

69.9

68.9

67.5

L25%

68.2

71.6

70.0

63.8

71.3

67.0

70.7

70.4

70.5

70.4

69.6

69.0

68.9

68.7

67.4

68.4

68.1

67.3

68.4

68.9

68.8

67.8

66.2

L50%

67.3

70.7

69.0

61.6

70.2

65.4

69.2

68.7

68.5

68.3

67.8

67.1

67.1

67.4

66.1

67.1

66.8

66.1

66.9

67.2

67.0

65.7

64.1

L90%

66.1

69.2

67.4

57.2

68.2

62.4

68.8

68.3

68.0

67.8

67.4

66.6

66.7

67.1

65.8

66.8

66.6

65.9

66.6

66.9

66.5

65.3

63.7

L95%

65.8

68.8

67.0

56.1

67.6

61.6

68.3

67.8

67.4

67.2

66.8

66.1

66.3

66.7

65.5

66.4

66.3

65.6

66.2

66.4

66.1

64.9

63.2

L99%

65.5

68.3

66.6

55.3

67.2

61.0

71.0

70.8

70.9

70.8

70.0

69.4

69.2

68.9

67.7

68.9

68.5

68.2

68.9

69.3

69.3

68.3

66.7

24-Hour

CNEL

74.2

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

0.0

5.0

5.0

5.0

10.0

10.0

Daytime

(7am-10pm)

69.6

Leq (dBA)

71.0

70.8

70.9

70.8

70.0

69.4

69.2

68.9

67.7

68.9

68.5

68.2

73.9

74.3

74.3

78.3

76.7

Nighttime

(10pm-7am)

66.9



71.0

70.8

70.9

70.8

70.0

69.4

69.2

68.9

67.7

68.9

68.5

68.2

68.9

69.3

69.3

68.3

66.7

L eq

67.7

71.0

69.6

62.8

70.5

66.9

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

Hour

Max

Min

Max

Energy Average

Energy Average

Day

Night

Timeframe

Day

Night

74.5

74.7

74.9

74.6

73.9

73.3

73.2

71.8

70.8

73.1

72.1

74.5

73.1

74.1

73.4

73.2

70.6

L max

70.8

74.9

68.9

74.3

Average

Average:

68.2

67.6

67.2

67.0

66.7

66.0

66.1

66.6

65.4

66.3

66.2

65.5

66.1

66.3

65.9

64.7

63.1

L min

65.4

68.2

55.1

67.0

74.1

74.4

74.6

74.3

73.6

72.9

72.9

71.6

70.5

72.8

71.8

74.2

72.8

73.8

73.1

72.8

70.4

L1%

70.5

74.6

73.2

68.6

74.0

70.9

73.8

74.0

74.3

74.0

73.3

72.5

72.6

71.4

70.3

72.5

71.6

73.8

72.3

73.3

72.8

72.5

70.2

L2%

70.3

74.3

72.8

68.4

73.7

70.6

73.2

73.3

73.4

73.2

72.5

71.7

71.7

70.9

69.8

71.6

70.9

71.9

71.6

72.0

71.9

71.3

69.5

L5%

69.8

73.4

72.0

67.3

73.1

69.7

24-Hour Noise Level Measurement Summary Date: Friday, February 17, 2023 Location: L5 - Located southwest corner of the Project site near the Meter: Piccolo II JN: 14324 Project: Pepper 210 Source: entrance to the River Ranch community. Analyst: Z. Ibrahim Hourly L eg dBA Readings (unadjusted) 85.0 80.0 75.0 (dBA) 70.0 65.0 60.0 50.0 59 89 45.0 40.0 35.0 0 2 3 5 7 8 9 10 13 15 18 19 20 21 22 23 1 6 11 12 14 16 17 **Hour Beginning** Adj. L eq L max L1% L5% L50% L95% Timeframe Hour L_{eq} L_{min} L2% L8% L25% L90% L99% L_{eq} Adj. 50.7 56.5 54.4 46.1 45.8 60.7 0 57.7 45.7 57.2 55.1 51.6 48.7 46.4 50.7 10.0 1 50.6 57.0 56.7 54.4 46.3 46.0 50.6 10.0 60.6 45.8 56.4 55.6 51.1 48.8 46.6 2 49.9 50.7 45.5 45.1 49.9 10.0 55.9 44.9 55.6 55.3 54.4 53.8 48.3 46.0 59.9 Night 3 54.4 63.3 46.8 62.8 62.5 61.1 59.7 54.1 50.5 47.7 47.3 46.9 54.4 10.0 64.4 4 52.3 57.5 57.1 48.6 48.2 52.3 10.0 62.3 58.0 48.1 56.3 55.4 53.0 51.3 49.0 5 10.0 55.6 61.9 51.4 61.4 60.9 59.5 58.5 56.2 54.6 52.4 52.0 51.6 55.6 65.6 58.2 64.9 53.1 64.4 63.9 62.3 61.5 59.0 57.0 54.4 53.9 53.3 58.2 10.0 68.2 58.8 66.5 53.2 65.9 65.3 63.8 62.8 59.0 57.0 54.4 54.0 53.4 58.8 0.0 58.8 8 58.7 65.3 53.5 64.6 64.1 63.0 62.2 59.3 57.3 54.7 54.2 53.7 58.7 0.0 58.7 9 59.5 52.9 66.8 66.2 65.6 64.2 63.1 60.4 57.9 54.3 53.7 53.0 59.5 0.0 59.5 10 61.1 67.9 54.1 67.3 66.7 65.6 64.7 62.2 59.5 56.0 55.2 54.4 61.1 0.0 61.1 11 59.9 68.3 53.4 67.7 66.9 65.0 63.9 60.2 58.0 54.8 54.3 53.6 59.9 0.0 59.9 12 67.3 52.5 52.7 58.7 58.7 66.4 65.4 63.6 62.5 59.0 56.7 53.9 53.3 0.0 58.7 13 58.4 67.0 51.7 66.6 66.0 64.5 63.0 58.1 55.8 52.8 52.4 51.8 58.4 0.0 58.4 52.0 57.6 Day 14 57.6 65.9 51.9 65.5 64.8 63.3 62.1 57.4 55.2 52.8 52.4 0.0 57.6 15 58.4 67.5 51.6 67.1 66.6 64.8 63.4 57.7 55.3 52.7 52.3 51.7 58.4 0.0 58.4 16 57.3 64.3 52.2 62.2 60.9 57.8 55.9 53.2 52.7 52.3 57.3 57.3 64.0 63.4 0.0 17 58.5 66.6 52.6 66.3 65.9 64.3 62.7 58.3 56.1 53.7 53.3 52.8 58.5 0.0 58.5 18 57.4 60.6 53.4 53.0 57.4 57.4 63.4 52.8 63.0 62.6 61.5 58.1 56.3 53.9 0.0 19 59.0 71.0 51.8 70.3 68.7 64.6 61.6 57.9 55.5 52.8 52.3 51.9 59.0 5.0 64.0 20 56.4 64.1 51.1 63.7 63.2 61.5 60.1 56.7 54.5 52.0 51.6 51.2 56.4 5.0 61.4 21 57.3 66.5 51.0 66.1 65.5 63.7 62.0 56.5 54.5 51.9 51.6 51.2 57.3 5.0 62.3 55.0 22 56.1 62.2 51.6 52.6 51.8 10.0 61.8 61.4 60.1 59.2 56.7 52.1 56.1 66.1 Night 56.7 23 63.2 52.4 62.7 62.2 60.1 55.5 53.3 52.9 52.5 56.7 66.7 61.2 57.0 10.0 L max Leq (dBA) Hour L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% Timeframe L eq 24-Hour Daytime 56.4 63.4 51.0 63.0 62.6 61.5 60.1 56.5 54.5 51.9 51.6 51.2 Nighttime Day **CNEL** (7am-10pm) Max 61.1 71.0 54.1 70.3 68.7 65.6 64.7 62.2 59.5 56.0 55.2 54.4 (10pm-7am) 58.6 Average 66.0 65.4 63.7 62.4 58.6 56.4 53.6 53.1 52.6 **Energy Average**



58.6

54.7

62.4

45.1

53.3

49.0

53.8

61.5

57.4

50.7

59.0

54.4

48.3

57.0

52.2

46.0

54.4

49.8

45.5

53.9

49.4

55.9

64.9

Average:

44.9

53.1

55.6

64.4

60.0

55.3

63.9

59.6

54.4

62.3

58.4

Min

Max

Energy Average

Night

49.9

58.2

54.7

24-Hour Noise Level Measurement Summary

Date: Friday, February 17, 2023 Location: L6 - Located southwest of the site near the residence at 2132 Meter: Piccolo II

Project: Pepper 210 Source: N Oakdale Ave. Analyst: Z. Ibrahim

Hourly L eq dBA Readings (unadjusted) Honrly Lea (dBA) (4BB) (**Hour Beginning**

Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L eq	Adj.	Adj. L _{eq}
	0	49.0	57.0	42.1	56.7	56.4	55.6	54.3	48.9	45.2	42.9	42.6	42.3	49.0	10.0	59.0
	1	45.9	53.7	41.1	53.2	52.3	50.6	49.2	46.5	43.8	41.8	41.5	41.2	45.9	10.0	55.9
	2	44.0	49.3	40.5	49.0	48.7	47.9	47.2	44.6	42.9	41.1	40.9	40.6	44.0	10.0	54.0
Night	3	52.4	63.0	43.5	62.2	61.4	59.2	57.6	51.5	47.3	44.5	44.1	43.6	52.4	10.0	62.4
	4	51.9	62.1	44.5	61.3	60.3	58.2	56.6	51.4	48.4	45.4	45.0	44.6	51.9	10.0	61.9
	5	55.5	64.7	48.5	64.1	63.3	61.4	60.0	55.5	52.4	49.6	49.1	48.6	55.5	10.0	65.5
	6	59.4	68.9	50.8	68.2	67.5	65.5	64.1	59.6	56.0	52.2	51.5	50.9	59.4	10.0	69.4
	7	59.2	68.7	51.1	68.1	67.1	65.2	63.8	59.4	55.9	52.3	51.7	51.2	59.2	0.0	59.2
	8	61.6	70.6	54.3	69.8	68.9	67.1	65.9	62.0	58.9	55.5	55.1	54.5	61.6	0.0	61.6
	9	62.8	71.6	54.3	71.0	70.3	68.5	67.4	63.4	59.6	55.6	55.0	54.4	62.8	0.0	62.8
	10	62.9	72.6	52.4	71.9	71.0	69.0	67.7	63.2	59.3	54.1	53.3	52.6	62.9	0.0	62.9
	11	61.2	70.2	51.9	69.6	68.9	67.3	66.2	61.7	57.5	53.4	52.8	52.1	61.2	0.0	61.2
	12	59.9	69.4	50.7	68.7	68.0	66.1	64.5	60.0	56.4	52.3	51.6	50.9	59.9	0.0	59.9
_	13	58.9	68.5	49.8	68.0	67.4	65.4	63.4	58.8	54.8	51.1	50.6	50.0	58.9	0.0	58.9
Day	14	58.3	69.4	49.2	68.7	67.5	65.4	64.1	56.6	52.8	50.2	49.8	49.3	58.3	0.0	58.3
	15	55.1	63.2	48.6	62.8	62.4	60.7	59.2	55.2	52.9	49.8	49.3	48.8	55.1	0.0	55.1
	16	55.3	64.0	49.4	63.6	63.0	61.2	59.5	55.0	52.8	50.3	49.9	49.5	55.3	0.0	55.3
	17	54.0	61.1	49.0	60.6	60.0	58.6	57.3	54.6	52.6	50.1	49.6	49.2	54.0	0.0	54.0
	18	53.1	59.3	49.2	59.0	58.5	57.2	56.4	53.4	52.0	50.0	49.7	49.3	53.1	0.0	53.1
	19	55.7	65.7	48.7	65.2	64.7	61.9	59.8	54.9	52.4	49.7	49.2	48.8	55.7	5.0	60.7
	20	52.4	59.6	47.3	59.1	58.5	56.9	55.9	53.0	50.8	48.2	47.8	47.4	52.4	5.0	57.4
	21	52.8	61.7	46.8	61.2	60.4	58.6	57.4	52.4	50.1	47.7	47.4	47.0	52.8	5.0	57.8
Night	22 23	51.5 50.9	58.6 56.2	47.2 47.4	58.0 55.9	57.2 55.6	55.9 54.9	54.8 54.2	51.9 51.6	50.1 49.7	48.1 48.1	47.6 47.8	47.3 47.5	51.5 50.9	10.0 10.0	61.5 60.9
Timeframe	Hour	L eq	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%			(dBA)
Timejrume	Min	52.4	59.3	46.8	59.0	58.5	56.9	55.9	52.4	50.1	47.7	47.4	47.0	24-Hour	Daytime	Nighttime
Day	Max	62.9	72.6	54.3	71.9	71.0	69.0	67.7	63.4	59.6	55.6	55.1	54.5	CNEL	(7am-10pm)	(10pm-7am)
Energy	Average	58.9	Aver		65.8	65.1	63.3	61.9	57.6	54.6	51.3	50.8	50.3		(7am-10pm)	(10pm-7um)
9,	Min	44.0	49.3	40.5	49.0	48.7	47.9	47.2	44.6	42.9	41.1	40.9	40.6	61.4	58.9	53.4
Night	Max	59.4	68.9	50.8	68.2	67.5	65.5	64.1	59.6	56.0	52.2	51.5	50.9	51.7	50.5	<i>3</i> 3.7
Energy	Average	53.4	Aver		58.7	58.1	56.6	55.3	51.3	48.4	46.0	45.6	45.2			



APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS



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	FHWA-R	D-77-108 H GH	WAY N	IOISE	PREDIC	TION N	IODEL (9/12/2	(021)		
	io: E ne: Pepper Av nt: s/o High l ar						t Name: lumber:				
	SPECIFIC II	NPUT DATA			Site Con				L INPUT	S	
Highway Data				-	Site Con	aitions					
Average Daily		12,006 vehicle	es					Autos			
	Percentage:	6.82%					ucks (2				
	lour Volume:	819 vehidle	S		He	avy Iru	cks (3+.	Axles)	: 15		
	hicle Speed:	45 mph			Vehicle I	Иiх					
Near/Far La	ne Distance:	48 feet		Ī	Vehi	icleType)	Day	Evening	Nigh	Daily
Site Data							Autos:	64.09	6 16.8%	19.2	% 97.51%
Ba	rrier Height:	0.0 feet			Me	edium 1	rucks:	77.19	6.4%	16.5	% 1.78%
Barrier Type (0-W		0.0			F	leavy 7	rucks:	54.0%	6 3.0%	43.0	% 0.72%
Centerline Di	. ,	52.0 feet		- }	Noise Sc	=	lassatian	a lin t	'a a 41		
Centerline Dist.	to Observer:	52.0 feet		-	Noise 30	Auto		.000	eet)		
Barrier Distance	to Observer:	0.0 feet			A decadio	Auto n Truck		.000			
Observer Height	Above Pad):	5.0 feet						.004	Grade Ad	livotmo	nt: 0.0
P	ad Elevation:	0.0 feet			neav	y Truck	S: 6.	.004	Grade Ad	justrie	m. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 46	.400			
	Left View:	-90.0 degre	es		Mediui	n Truck	s: 46	209			
	Right View:	90.0 degre	es		Heav	y Truck	s: 46	.228			
FHWA Noise Mode	el Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresi		Barrier Att		erm Atten
Autos:	68.46			0.3		-1.20		-4.66		000	0.00
Medium Trucks:	79.45			0.4		-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-24.16		0.4	1	-1.20		-5.41	0.	000	0.00
Unmitigated Noise											
VehicleType	Leg Peak Ho	, ,	· .	Leq E	vening	Leq	Night		Ldn	_	CNEL
Autos:	64	1.8	63.8		64.0		59.	8	67.	0	67.
Medium Trucks:			58.2		53.4		52.		60.		60.
Heavy Trucks:			57.5		51.0		57.		64.		64.
Vehicle Noise:			65.6		64.5		62.	4	69.	4	69.
Centerline Distant	ce to Noise C	ontour (in feet)								
				70	dBA	65	dBA		60 dBA		55 dBA
			Ldn:		47		102		219		473
		C	NEL:		50		108	3	232	2	500

	FHWA-RI	D-77-108 H I GH	WAY I	NOISE F	PREDIC	TION	MODEL (9	/12/202	1)	
Scenari Road Nam Road Segmer	e: Pepper Av.						t Name: F Number: 1		10	
	SPECIFIC IN	NPUT DATA					NOISE N			
Highway Data				S	ite Cor	ditions	(Hard =	10, Soft	= 15)	
Peak H	Percentage: our Volume: nicle Speed:	17,115 vehicle 6.82% 1,167 vehicle 45 mph		V		avy Tru	rucks (2 A icks (3+ A	,	15 15 15	
Near/Far Lar	ie Distance:	48 feet			Veh	icleTyp	e 1	Day E	vening N	ight Daily
Barrier Type (0-W. Centerline Dist. Centerline Dist. Barrier Distance of Observer Height (A. Pa	t. to Barrier: to Observer: to Observer:	0.0 feet 0.0 52.0 feet 52.0 feet 0.0 feet 0.0 feet 0.0 feet 0.0 feet	es		oise S Mediu Hea ane Eq	edium 1 Heavy 1 Durce E Auto m Truck vy Truck	Frucks: Frucks: Flevations os: 0.0 ks: 2.2 ks: 8.0 out Distance os: 46.4	00 97 04 <i>G</i> e (in fee	6.4% 1 3.0% 4 (t)	9.2% 97.51% 6.5% 1.78% 3.0% 0.72% tment: 0.0
	Right View:	90.0 degre	es		Hea	vy Truck	ks: 46.2	28		
FHWA Noise Mode		_								
VehicleType	REMEL	Traffic Flow		tance		Road	Fresne		arrier Atten	Berm Atten
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	-18.66		0.38 0.41 0.41		-1.20 -1.20 -1.20		4.66 4.87 5.41	0.000	0.00
Unmitigated Noise	Lovolo (with	out Tone and	harria	r attanu	ntion)					
	Leg Peak Ho			Leg Eve		Leo	Night	- 1	dn	CNEL
Autos:		6.4	65.3	Log Li	65.5		61.3		68.6	69.
Medium Trucks:	60	0.0	59.7		55.0		54.3		61.8	62.
Heavy Trucks:	60	0.8	59.0		52.5		59.3		65.6	65.
Vehicle Noise:	68	3.2	67.1		66.1		63.9		70.9	71.
Centerline Distanc	e to Noise C	ontour (in feet)							
				70 dl	ВА	65	dBA	60	dBA	55 dBA
			Ldn:		60		129		278	599
		С	NEL:		63		136		294	633

		-77-108 HIGH	WAY	MUISE	PREDIC	TION M	ODEL	(9/12/2	JZ1)		
Scenari	io: E+P					Project	Name:	Peppe	r 210		
	e: Pepper Av.					Job N	umber:	14324			
Road Segmer	nt: s/o Highland	d Av.									
	SPECIFIC IN	PUT DATA							L INPUT	s	
Highway Data					Site Cor	ditions	Hard :				
Average Daily	Traffic (Adt):	14,788 vehicle	es					Autos:	15		
Peak Hour	Percentage:	6.82%				edium Tru			15		
Peak H	lour Volume:	1,009 vehicle:	S		He	eavy Truc	ks (3+	Axles):	15		
Ve	hicle Speed:	45 mph		1	Vehicle	Mix					
Near/Far La	ne Distance:	48 feet		i i		icleType		Day	Evening	Night	Daily
Site Data							utos:	64.0%	16.8%	19.2%	97.08
Rai	rrier Height:	0.0 feet			M	ledium Tr	ucks:	77.1%	6.4%	16.5%	1.53
Barrier Type (0-W		0.0				Heavy Tr	ucks:	54.0%	3.0%	43.0%	1.38
Centerline Dis	st. to Barrier:	52.0 feet		7	Voise S	ource El	evation	ns (in fe	et)		
Centerline Dist.	to Observer:	52.0 feet		F		Autos		.000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks		.297			
Observer Height (Above Pad):	5.0 feet				vv Trucks		.004	Grade Ad	iustment	. 0.0
Pa	ad Elevation:	0.0 feet								,	
Ros	ad Elevation:	0.0 feet		1	Lane Eq	uivalent	Distar	ice (in i	feet)		
1	Road Grade:	0.0%				Autos		.400			
	Left View:	-90.0 degree				m Trucks		.209			
	Right View:	90.0 degree	es		Hea	vy Trucks	: 46	.228			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fres		Barrier Att		m Atter
Autos:	68.46	-1.93		0.3		-1.20		-4.66		000	0.0
Medium Trucks:	79.45	-19.94		0.4		-1.20		-4.87		000	0.0
Heavy Trucks:	84.25	- 20.39		0.4	1	-1.20		-5.41	0.0	000	0.0
Unmitigated Noise			_				Market		Ldn		NEL
VehicleType Autos:	Leq Peak Hou 65		64.6	Leq E	64.9	Leq	vigrit 60	7	67.9		VEL 68
Medium Trucks:	58		58.5		53.7		53		60.5	-	60
Heavy Trucks:	63		61.3		54.7		61		67.8	-	67
Vehicle Noise:	68		67.0		65.5		64		71.		71
Centerline Distanc	e to Noise Co	ntour (in feet,)								
		-	T	70 c	iBA	65 (iBA	- 6	i0 dBA	55	dBA
			Ldn:		63		13	6	293		63
			VEL:		66		14		307		66

Wednesday, January 24, 2024

	FHWA-R	D-77-108 H i GH	WAY	NOISE	PREDIC	CTION M	ODEL	(9/12/2	021)		
Road Nam	io: OYC+P ne: Pepper Av. nt: s/o High l ar					Project Job N	Name: umber:				
	SPECIFIC II	IPUT DATA							L INPUTS	3	
Highway Data				s	ite Con	ditions	(Hard =	= 10, S	oft = 15)		
Peak H	Percentage: lour Volume:	19,897 vehicle 6.82% 1,357 vehicle				edium Tre eavy True		,	15		
	hicle Speed:	45 mph		V	ehicle	Mix					
Near/Far La	ne Distance:	48 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						-	Autos:	64.09	6 16.8%	19.29	6 97.19%
Bai	rrier Height:	0.0 feet			М	edium Ti	rucks:	77.19	6.4%	16.5%	6 1.60%
Barrier Type (0-W	/all, 1-Berm):	0.0				Heavy Ti	ucks:	54.0%	6 3.0%	43.09	6 1.21%
Centerline Dis		52.0 feet		N	loise S	ource El	evatior	ıs (in f	eet)		
Centerline Dist.		52.0 feet				Auto:	s: 0	.000			
Barrier Distance		0.0 feet			Mediu	m Truck:	s: 2	.297			
Observer Height (5.0 feet			Hear	y Truck:	s: 8	.004	Grade Adj	ustmer	it: 0.0
	ad Elevation: ad Elevation:	0.0 feet		,	ano Eo	uivalent	Dietan	co (in	foot)		
	aa ⊨ievation: Road Grade:	0.0 feet			ane Ly	Auto:		.400	reer)		
	Left View:	0.0% -90.0 degree			Modiu	m Truck:		209			
	Right View:	90.0 degree				y Truck		.228			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fres	nel	Barrier Atte	en Be	rm Atten
Autos:	68.46	-0.64		0.38		-1.20		-4.66	0.0	00	0.000
Medium Trucks:	79.45	-18.48		0.41		-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-19.68		0.41		-1.20		-5.41	0.0	00	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	r attenu	ıation)						
VehicleType	Leq Peak Ho	ır Leq Day	′	Leq Ev	ening	Leq	Night		Ldn		CNEL
Autos:	67	7.0	65.9		66.1		62.	.0	69.2		69.8
Medium Trucks:			59.9		55.2		54.		62.0		62.2
Heavy Trucks:			62.0		55.4		62.		68.5		68.6
Vehicle Noise:	-		68.1		66.8		65.	.5	72.3	1	72.6
Centerline Distant	ce to Noise C	ontour (in feet)								
			L	70 di		65	dBA		60 dBA	5	5 dBA
			Ldn:		74		160		345		743
		C	VEL:		78		168	3	362		780

FHWA-R	D-77-108 HIGH	WAY	NOISE	PREDIC	CTION	MODEL	(9/12/2	021)		
Scenario: HY Road Name: Pepper Av Road Segment: s/o Highla						t Name: Number:		r 210		
SITE SPECIFIC II	NPUT DATA			Site Cor				L INPUT	s	
Highway Data	40.000 .111			Site Cor	iaitions	(maru -				
Average Daily Traffic (Adt): Peak Hour Percentage:	18,826 vehicl	es			t: T	rucks (2	Autos:			
Peak Hour Percentage: Peak Hour Volume:	6.82% 1.284 vehicle	_				icks (3+	,			
Vehicle Speed:	45 mph	S		П	eavy III	icks (5+	Axies).	10		
Near/Far Lane Distance:	48 feet			Vehicle						
Neal/Fal Lane Distance.	40 1661			Veh	nicleTyp	е	Day	Evening	Night	Daily
Site Data						Autos:	64.0%		19.2%	
Barrier Height:	0.0 feet				ledium 1		77.1%		16.5%	
Barrier Type (0-Wall, 1-Berm):	0.0				Heavy T	rucks:	54.0%	3.0%	43.0%	0.72%
Centerline Dist. to Barrier:	52.0 feet			Noise S	ource E	levation	ns (in f	eet)		
Centerline Dist. to Observer:	52.0 feet		T I		Auto		.000	,		
Barrier Distance to Observer:	0.0 feet			Mediu	ım Truck		.297			
Observer Height (Above Pad):	5.0 feet				vv Truck		.004	Grade Ao	justmen	t: 0.0
Pad Elevation:	0.0 feet									
Road Elevation:	0.0 feet		- 4	Lane Eq			_	feet)		
Road Grade:	0.0%				Auto		.400			
Left View:	-90.0 degre				ım Truck		.209			
Right View:	90.0 degre	es		Hea	vy Truci	ks: 46	.228			
FHWA Noise Model Calculation	ıs		•							
VehicleType REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos: 68.46			0.3		-1.20		-4.66	0.	000	0.000
Medium Trucks: 79.45			0.4		-1.20		-4.87		000	0.000
Heavy Trucks: 84.25	-22.21		0.4	1	-1.20		-5.41	0.	000	0.000
Unmitigated Noise Levels (with		_			1				1	
VehicleType Leq Peak Ho			Leq E			Night		Ldn	_	NEL
	6.8	65.7		65.9		61.		69.	-	69.5
	0.4	60.2		55.4		54.		62.	_	62.5
· -	1.3	59.4		52.9		59.		66.		66.0
-	8.6	67.5		66.5)	64.	.3	71.	3	71.7
Centerline Distance to Noise C	ontour (in feet)	70 0	IBA	65	dBA	1 ,	60 dBA	55	i dBA
		Ldn:	,,,,	64	1 00	13		296		638
	С	NEL:		67		14		313		675

	FHWA-R	D-77-108 HIGH	IWAY N	OISE P	REDIC	TION	MODEL (9	/12/2	021)		
Scenari Road Nam Road Segmer	e: Pepper Av						t Name: F Number: 1				
	SPECIFIC II	NPUT DATA							L INPUTS	3	
Highway Data				Si	e Cor	ditions	(Hard = 1	10, Sc	oft = 15)		
Peak H	Percentage: our Volume: hicle Speed:	25,375 vehicle 6.82% 1,731 vehicle 45 mph 48 feet		Ve	He hicle	avy Tru Mix	rucks (2 A icks (3+ A	xles):	15 15	N	
Site Data					ven	icleTyp		Day 64.0%	Evening 16.8%	Night 19.2	Daily % 97.51%
Bar Barrier Type (0-W		0.0 feet 0.0				edium 1 Heavy 1	rucks:	77.1% 54.0%	6.4%	16.5° 43.0°	% 1.78%
Centerline Dist		52.0 feet 52.0 feet		No	ise S	ource E	levations	(in f	eet)		
Barrier Distance Observer Height (. Pa Roa	to Observer: Above Pad): ad Elevation: ad Elevation: Road Grade: Left View:	0.0 feet 5.0 feet 0.0 feet 0.0 feet 0.0% -90.0 degre		La	Hea ne Eq Mediu	Auto m Truck	ks: 2.2 ks: 8.0 kt Distanc os: 46.4 ks: 46.2	97 04 e (in 00	Grade Adji feet)	ustmei	nt: 0.0
	Right View:	90.0 degre	es		Hea	vy Truck	ks: 46.2	28			
FHWA Noise Mode		_									
VehicleType	REMEL	Traffic Flow	Dista		Finite	Road	Fresne		Barrier Atte	_	erm Atten
Autos: Medium Trucks:	68.46 79.45	-16.95		0.38		-1.20 -1.20		4.66 4.87	0.0	00	0.000
Heavy Trucks:	84.25			0.41		-1.20		5.41	0.0	100	0.000
Unmitigated Noise							*** **				24151
VehicleType Autos:	Leq Peak Ho	ur Leq Da _. 3.1	7 L 67.0	eq Eve	ning 67.2		Night 63.0		Ldn 70.3		70.8
Medium Trucks:		1.7	61.4		56.7		56.0		63.5		63.8
Heavy Trucks:		2.5	60.7		54.2		61.0		67.3		67.3
Vehicle Noise:		9.9	68.8		67.8		65.6		72.6		73.0
Centerline Distance	e to Noise C	ontour (in feet	t)								
				70 dE	Α	65	dBA	(60 dBA	5	5 dBA
			Ldn:		78		168		361		778
		С	NEL:		82		177		382		824

	FHWA-RD-	-77-108 HIGH	WAY	NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
	o: HY+P						Name:		r 210		
	e: Pepper Av.					Job N	lumber:	14324			
Road Segmer	nt: s/o Highland	Av.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 2	21,608 vehic l e	S					Autos:	15		
Peak Hour	Percentage:	6.82%				dium Tr					
Peak H	our Volume:	1,474 vehic l es			He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	45 mph		ŀ	Vehicle	Mix					
Near/Far La	ne Distance:	48 feet		ŀ		icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	64.0%	16.8%	19.2%	97.229
Rai	rier Height:	0.0 feet			М	edium T	rucks:	77.1%	6.4%	16.5%	1.619
Barrier Type (0-W		0.0				Heavy T	rucks:	54.0%	3.0%	43.0%	1.179
Centerline Dis	st. to Barrier:	52.0 feet		ŀ	Noise S	ource E	levation	s (in fe	eet)		
Centerline Dist.	to Observer:	52.0 feet		ŀ		Auto		.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck		.297			
Observer Height (Above Pad):	5.0 feet				vy Truck		.004	Grade Ad	iustment	. 0.0
Pa	ad Elevation:	0.0 feet			7700	y maon	0, 0	.004	0.000.10	,	
Ros	ad Elevation:	0.0 feet			Lane Eq	uivalen	t Distan	ice (in i	feet)		
1	Road Grade:	0.0%				Auto	s: 46	.400			
	Left View:	-90.0 degree	s		Mediu	m Truck	s: 46	.209			
	Right View:	90.0 degree	s		Hear	/y Truck	s: 46	.228			
FHWA Noise Mode	el Calculations										
VehicleType		Traffic Flow	Dis	tance		Road	Fres		Barrier Att		m Atten
Autos:	68.46	-0.28		0.3	38	-1.20		-4.66	0.0	000	0.00
Medium Trucks:	79.45	-18.08		0.4	11	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	- 19.46		0.4	11	-1.20		-5.41	0.0	000	0.00
Unmitigated Noise			barrie				A 17 - 1 - 4		1.1.		
VehicleType Autos:	Leg Peak Hour 67.4		36.3	Leq E	vening 66.5		Night 62.	2	Ldn 69.6		NEL 70.
Medium Trucks:	60.6		30.3		55.5		6∠. 54.		62.4		62.
Heavy Trucks:	64.0		52.2		55.7		62		68.		68.
Vehicle Noise:	69.6		38.5		67.2		65.		72.6		72.
Centerline Distanc	e to Noise Cor	ntour (in feet)									
		· · · · · · · · ·		70	dBA	65	dBA		60 dBA		dBA
			Ldn:		78		168	3	361		778
			IEL:		82		176		379		817

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 H I GH	WAY	NOISE	PREDIC	TION M	ODEL (9/12/2	021)		
	io: E+P le: Pepper Av. nt: s/o SR-210						Name: umber:				
	SPECIFIC IN	IPUT DATA							L INPUTS	3	
Highway Data					Site Con	ditions	(Hard =	10, S	oft = 15)		
Peak H	Percentage: lour Volume:	25,843 vehicle 6.82% 1,762 vehicle				edium Tra eavy True	icks (2.	,	15		
	hicle Speed:	45 mph			Vehicle I	Mix					
Near/Far La	ne Distance:	48 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						,	Autos:	64.0%	6 16.8%	19.2%	97.55%
Bai	rrier Height:	0.0 feet			M	edium T	rucks:	77.19	6.4%	16.5%	1.75%
Barrier Type (0-W	all, 1-Berm):	0.0			1	Heavy T	ucks:	54.0%	6 3.0%	43.0%	0.70%
Centerline Dis		52.0 feet			Noise So	ource El	evation	s (in f	eet)		
Centerline Dist.		52.0 feet				Auto.	s: 0,	000	-		
Barrier Distance		0.0 feet			Mediu	m Truck	s: 2.	297			
Observer Height (5.0 feet			Heav	vy Truck	s: 8.	004	Grade Adju	ıstmen	t: 0.0
	ad Elevation:	0.0 feet					D				
	ad Elevation:	0.0 feet		ļ.	Lane Eq				reet)		
/	Road Grade:	0.0%				Auto		400			
	Left View:	-90.0 degree				m Truck		.209			
	Right View:	90.0 degree	es		Heav	y Truck	s: 46	.228			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	nel	Barrier Atte	n Be	rm Atten
Autos:	68.46	0.52		0.3	8	-1.20		-4.66	0.0	00	0.000
Medium Trucks:	79.45	-16.95		0.4	1	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-20.91		0.4	1	-1.20		-5.41	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barri	er atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	′	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	68	3.2	67.1		67.3		63.	1	70.4		70.9
Medium Trucks:	61	1.7	61.4		56.7		56.)	63.5		63.8
Heavy Trucks:			60.7		54.2		61.		67.3		67.3
Vehicle Noise:	69	9.9	68.9		67.9		65.	7	72.7		73.0
Centerline Distance	e to Noise Co	ontour (in feet,)								
				70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		78		169	1	364		784
		Ci	NEL:		83		179	F	385		830

	FHWA-RD-	77-108 HIGH	WAY NO	SE PRED	CTION IV	ODEL (9/12/2	021)		
Scenario: Road Name:						Name: umber:				
Road Segment:		EB Ramps			00011					
	ECIFIC INF	PUT DATA						L INPUT	S	
Highway Data				Site Co	nditions	(Hard =	10, S	oft = 15)		
Average Daily Tra	iffic (Adt): 4	10,419 vehic i e	es				Autos:			
Peak Hour Pe	rcentage:	6.82%		Λ.	ledium Tr	ucks (2 i	Axles).	15		
Peak Hou	r Volume: 2	2,757 vehicles	3	H	leavy Tru	cks (3+ ,	Axles).	15		
Vehici	le Speed:	45 mph		Vehicle	Mix					
Near/Far Lane	Distance:	48 feet			hicleType		Day	Evening	Night	Daily
Site Data						Autos:	64.0%	16.8%	19.2	% 97.51%
Barrie	r Height:	0.0 feet		1	Лedium Т.	rucks:	77.19	6.4%	16.5	% 1.78%
Barrier Type (0-Wall,	•	0.0			Heavy T	rucks:	54.0%	3.0%	43.0	% 0.72%
Centerline Dist. t	to Barrier:	52.0 feet		Noise S	Source El	evation	s (in f	eet)		
Centerline Dist. to 0	Observer:	52.0 feet		770700	Auto		000	0019		
Barrier Distance to 0	Observer:	0.0 feet		Medi	um Truck		297			
Observer Height (Ab	ove Pad):	5.0 feet			avy Truck		004	Grade Ad	iustme	nt: 0.0
Pad I	Elevation:	0.0 feet			•					
Road I	Elevation:	0.0 feet		Lane E	quivalent	Distan	ce (in	feet)		
Ros	ad Grade:	0.0%			Auto		400			
L	Left View:	-90.0 degree	es		um Truck		209			
Ri	ight View:	90.0 degree	es	He	avy Truck	s: 46.	.228			
FHWA Noise Model C				-1						
		Traffic Flow	Distanc		e Road	Fresi		Barrier Att		erm Atten
Autos:	68.46	2.46		0.38	-1.20		-4.66		000	0.000
Medium Trucks:	79.45	-14.93		0.41	-1.20		-4.87		000	0.000
Heavy Trucks:	84.25	-18.89		0.41	-1.20		-5.41	0.0	000	0.000
Unmitigated Noise Le										
	q Peak Hour	, ,		g Evening		Night		Ldn		CNEL
Autos:	70.		69.0	69.		65.		72.3		72.9
Medium Trucks:	63.7		63.5	58.		58.		65.5		65.8
Heavy Trucks: Vehicle Noise:	64.6 71.9		62.8 70.8	56. 69.		63.		69.3 74.6		69.4 75.0
Centerline Distance t						٠,,		7-1-1		70.
			,							
Centerine Distance t				70 dBA	65	dBA		60 dBA	5	55 dBA
Centernine Distance t			Ldn:	70 dBA 106		dBA 229	_	60 dBA 493		55 dBA 1,061

	FHWA-RI	D-77-108 HIGH	WAY NO	ISE PR	EDIC	TION MC	DDEL (9	/12/20	21)		
Scenari Road Nam Road Segmer	e: Pepper Av.					Project I Job Nu	Vame: F mber: 1		210		
SITE S	SPECIFIC IN	IPUT DATA				N	DISE N	IODE	L INPUT	5	
Highway Data				Site	Con	ditions (i	Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	44,461 vehicle	es				A	lutos:	15		
Peak Hour	Percentage:	6.82%			Me	dium True	cks (2 A	xles):	15		
Peak H	our Volume:	3,032 vehicles	5		He	avy Truck	(s (3+ A	xles):	15		
Vel	hicle Speed:	45 mph		Vot	icle l	Miv					
Near/Far Lar	ne Distance:	48 feet		V 67		icleType		Day	Evening	Night	Daily
Site Data								64.0%	16.8%	19.29	
Rar	rier Height:	0.0 feet			M	edium Tru	icks:	77.1%	6.4%	16.59	6 1.78
Barrier Type (0-W		0.0			F	leavy Tru	icks:	54.0%	3.0%	43.09	6 0.72
Centerline Dis		52.0 feet		A1-1	6-		4!	/! F-	-41		
Centerline Dist.	to Observer:	52,0 feet		NOI	se sc	urce Ele		•	et)		
Barrier Distance	to Observer:	0.0 feet				Autos: n Trucks:					
Observer Height (Above Pad):	5.0 feet		Λ.		n Trucks: v Trucks:			Grade Ad	iuetmor	t: 0.0
Pa	ad Elevation:	0.0 feet			пеач	y Trucks.	0.0	104	Grade Auj	ustriiei	2. 0.0
Roa	ad Elevation:	0.0 feet		Lan	e Eq	uivalent l	Distanc	e (in f	eet)		
F	Road Grade:	0.0%				Autos:	46.4	100			
	Left View:	-90.0 degree		٨		n Trucks:					
	Right View:	90.0 degree	es		Heav	y Trucks:	46.2	228			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	-	Finite	Road	Fresne		Barrier Atte	en Be	rm Atter
Autos:	68.46			0.38		-1.20		4.66	0.0	000	0.0
Medium Trucks:	79.45			0.41		-1.20		4.87	0.0		0.0
Heavy Trucks:	84.25	-18.48		0.41		-1.20		5.41	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou			q Even		Leq N	•		Ldn		NEL
Autos:			69.4		69.7		65.5		72.7		73
Medium Trucks:	64		63.9		59.1		58.4		66.0		66
Heavy Trucks:_ Vehicle Noise:			63.2 71.2		56.6 70.2		63.4 68.1		69.7 75.1		69 75
					70.2		00.1		/5.1	1	/5
Centerline Distanc	e to Noise Co	ontour (in feet	1	70 dBA		65 d	RA.	6	0 dBA	5.	5 dBA
			Ldn:	, c ubr	113	00 0	244		525		1,13
			VEL:		120		258		556		1,19
											, , ,

		77-108 HIGH	TVVA	-NOI2	EP	CEDIC	HON W	ODEL (<i>3</i> 11212	0 2 1)		
Scenario: OYC+P							Project			r 210		
Road Name: Pepper							Job N	umber:	14324			
Road Segment: s/o SR-	210 E	B Ramps										
SITE SPECIFIC	INP	UT DATA								L INPUT	S	
Highway Data					Site	e Conc	litions	(Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Ad	t): 4	0,887 vehic	es						Autos:	15		
Peak Hour Percentag	e:	6.82%					lium Tro		,			
Peak Hour Volum	e: 2	,789 vehic l e	s			Hea	avy Truc	ks (3+ .	Axles):	15		
Vehicle Spee	d:	45 mph			Vel	nicle N	lix					
Near/Far Lane Distanc	e:	48 feet					cleType		Day	Evening	Night	Daily
Site Data								lutos:	64.0%	16.8%	19.2%	97.53
Barrier Heigh	nt:	0.0 feet			1	Me	dium Ti	ucks:	77.1%	6.4%	16.5%	1.76
Barrier Type (0-Wall, 1-Bern	n):	0.0				Н	leavy Ti	ucks:	54.0%	3.0%	43.0%	0.71
Centerline Dist. to Barrie		52.0 feet			No	ise So	urce El	evation	s (in fe	et)		
Centerline Dist. to Observe		52.0 feet					Auto:	s: 0.	.000			
Barrier Distance to Observe		0.0 feet			,	Mediun	1 Truck		297			
Observer Height (Above Pad	,	5.0 feet				Heav	/ Truck		.004	Grade Ad	justmeni	t: 0.0
Pad Elevation		0.0 feet										
Road Elevation		0.0 feet			Lar	ne Equ	ivalent			feet)		
Road Grad		0.0%					Auto		400			
Left Vie		-90.0 degre			/		1 Truck		209			
Right Vie	w:	90.0 degre	es			Heav	/ Truck	s: 46	.228			
FHWA Noise Model Calcular												
VehicleType REMEL	_	raffic Flow		istance		Finite I		Fresi		Barrier Att		rm Atter
	3.46	2.51			.38		-1.20		-4.66		000	0.0
	.45	-14.93			.41		-1.20		-4.87		000	0.00
Heavy Trucks: 84	.25	- 18.89		0.	.41		-1.20		-5.41	0.0	000	0.00
Unmitigated Noise Levels (v		•		_								
VehicleType Leq Peak		Leq Day		Leq	Ever		Leq	Night		Ldn		NEL
Autos:	70.2		69.1			69.3		65.		72.		72
Medium Trucks:	63.7		63.5			58.7		58.		65.		65
Heavy Trucks:	64.6		62.8			56.2		63.		69.		69
Vehicle Noise:	71.9		70.9	1		69.8		67.	1	74.	′	75
Centerline Distance to Noise	e Con	tour (in feet	t)	7/	2.10.		0.5	/D.4		20 104		104
) dB/		05	dBA		60 dBA		dBA
		_	Ldn: NEL:			107 113		230 243		495 524		1,06

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 H i GH	WAY	NOISE	PREDIC	TION M	ODEL	(9/12/2	(021)		
Road Nam	io: HY+P ne: Pepper Av. nt: s/o SR-210					Project Job N	Name: umber:				
	SPECIFIC IN	IPUT DATA							EL INPUTS	3	
Highway Data				5	Site Con	ditions	(Hard =	= 10, S	oft = 15)		
Peak H	Percentage: lour Volume:	44,929 vehicle 6.82% 3,064 vehicle				dium Tru avy Truc		,	: 15		
	hicle Speed:	45 mph		١	/ehicle l	Vix					
Near/Far La	ne Distance:	48 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						P	Autos:	64.0%	6 16.8%	19.29	6 97.53%
Bai	rrier Height:	0.0 feet			M	edium Ti	rucks:	77.19	6.4%	16.5%	6 1.76%
Barrier Type (0-W	/all, 1-Berm):	0.0			1	Heavy Ti	rucks:	54.0%	6 3.0%	43.0%	6 0.71%
Centerline Dis		52.0 feet		1	Voise So	ource El	evatior	s (in f	eet)		
Centerline Dist.		52.0 feet				Auto		.000			
Barrier Distance		0.0 feet			Mediu	m Truck		.297			
Observer Height (5.0 feet				vy Truck		.004	Grade Adj	ustmer	t: 0.0
	ad Elevation:	0.0 feet				•					
Roa	ad Elevation:	0.0 feet		L	ane Eq	uivalent			feet)		
1	Road Grade:	0.0%				Auto		.400			
	Left View:	-90.0 degre	es			m Truck		.209			
	Right View:	90.0 degree	es		Heav	y Truck	s: 46	.228			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance		Road	Fres		Barrier Atte		erm Atten
Autos:	68.46	2.92		0.38	В	-1.20		-4.66	0.0	00	0.000
Medium Trucks:	79.45	-14.52		0.4	1	-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-18.48		0.4	1	-1.20		-5.41	0.0	00	0.000
Unmitigated Noise				er atten	uation)						
VehicleType	Leq Peak Hot	ır Leq Day	,	Leq Ev	ening/	Leq	Night		Ldn		CNEL
Autos:			69.5		69.7		65.		72.8		73.3
Medium Trucks:	64	l.1	63.9		59.1		58.	4	66.0		66.2
Heavy Trucks:			63.2		56.6		63.		69.7		69.8
Vehicle Noise:	72	2.3	71.3		70.3		68.	.1	75.1		75.5
Centerline Distant	ce to Noise Ce	ontour (in feet)								
				70 c	IBA	65	dBA		60 dBA	5	5 dBA
			Ldn:		114		24	5	527		1,136
		C	VEL:		120		259	9	558		1,202

	FHWA-RI	D-77-108 HIGH	WAY N	IOISE	PREDIC	TION	IODEL	(9/12/2	021)		
	rio: E ne: State St. nt: n/o High l an	nd Av.					t Name: lumber:		r 210		
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data					Site Cor	ditions	(Hard				
Average Daily		13,926 vehicle	es					Autos:			
	Percentage:	6.82%				dium Tr					
	lour Volume:	950 vehic l e	S		He	avy Tru	cks (3+	Axles):	15		
	hicle Speed:	45 mph		1	Vehicle	Vix					
Near/Far La	ne Distance:	48 feet			Veh	icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	64.0%	16.8%	19.2	% 97.51%
Ra	rrier Height:	0.0 feet			М	edium T	rucks:	77.1%	6.4%	16.5	% 1.78%
Barrier Type (0-W		0.0				Heavy T	rucks:	54.0%	3.0%	43.0	% 0.72%
Centerline Di	st. to Barrier:	52.0 feet		1	Noise S	ource E	levatio	ns (in fe	eet)		
Centerline Dist.	to Observer:	52.0 feet		F		Auto		.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck		.297			
Observer Height	(Above Pad):	5.0 feet				v Truck		3.004	Grade Ao	liustme	nt: 0.0
P	ad Elevation:	0.0 feet								,	
Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distar	nce (in i	feet)		
	Road Grade:	0.0%				Auto		3.400			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 46	5.209			
	Right View:	90.0 degre	es		Hear	ry Truck	rs: 46	5.228			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow	Dista			Road	Fres		Barrier Att		erm Atten
Autos:				0.3		-1.20		-4.66		000	0.000
Medium Trucks:				0.4	1	-1.20		-4.87		000	0.000
Heavy Trucks:	84.25	-23.52		0.4	1	-1.20		-5.41	0.0	000	0.000
Unmitigated Nois			barrier	atten	uation)						
VehicleType	Leq Peak Hou			Leg E	vening	Leq	Night		Ldn		CNEL
Autos:	65	5.5	64.4		64.6		60	.4	67.	7	68.2
Medium Trucks:	59		58.8		54.1		53	.4	60.	9	61.1
Heavy Trucks:	59		58.1		51.6		58		64.		64.7
Vehicle Noise:	67	7.3	66.2		65.2		63	.0	70.	0	70.4
Centerline Distant	ce to Noise Co	ontour (in feet)								
				70 c	BA.	65	dBA	(60 dBA		55 dBA
			Ldn:		52		11	2	242	2	522
		C	NEL:		55		11	9	256	ò	552

Barrier Height: 0.0 feet Medium Trucks: 77.1% 6.4% 16.5% 19.2% 5 Medium Trucks: 70.00 10.0%		FHWA-RI	D-77-108 HIG	YAW	NOISE	PREDIC	CTION	MODEL	(9/12/2	021)		
Average Daily Traffic (Adi):	Road Nam	e: State St.	nd Av.							r 210		
Average Daily Traffic (Adt):		SPECIFIC IN	NPUT DATA								S	
Peak Hour Percentage: 6.82% Medium Trucks (2 Axles): 15						Site Cor	iditions	(Hard				
Peak Hour Volume: 1,070 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet Vehicle Mix Vehicle Vehicle Noise Vehicle Mix Vehicle Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Vehicle Mix Vehicle Mix	,			es								
Vehicle Speed:									,			
Near/Far Lane Distance:				s		He	avy Tru	icks (3+	· Axles):	15		
Site Data Autos: 64.09 16.8% 1			45 mph		ľ	Vehicle	Mix					
Barrier Height: 0.0 feet	Near/Far La	ne Distance:	48 feet		ı	Veh	icleTyp	9	Day	Evening	Night	Daily
Barrier Type (0-Wall, 1-Berm):	Site Data							Autos:	64.0%	16.8%	19.2%	97.519
Barrier Type (0-Wall, 1-Berm):	Bai	rier Heiaht:	0.0 feet			M	ledium 1	rucks:	77.1%	6.4%	16.5%	1.789
Noise Source Elevations (in Feet)	Barrier Type (0-W	'all, 1-Berm):	0.0				Heavy T	rucks:	54.0%	3.0%	43.0%	0.729
Barrier Distance to Observer: 0.00 feet					İ	Noise S	ource E	levatio	ns (in fe	eet)		
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0					Ī		Auto	os: (0.000			
Pad Elevation:						Mediu	m Truck	ks: 2	2.297			
Road Elevation:		,				Hea	vy Truck	ks: 8	3.004	Grade Ad	justment	: 0.0
Road Grade: 0.0%					-			4 01-4-	(:-	C4)		
Left View:					-	Lane Eq				reet)		
FHWA Noise Model Calculations	,											
			-									
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm				162		1160	vy macr	10. 4	0.220			
Autos: 68.46												
Medium Trucks: 79.45 -19.04 0.41 -1.20 -4.87 0.000 Heavy Trucks: 84.25 -23.00 0.41 -1.20 -5.41 0.000 Ulmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Devining Leq Night Ldn CNE Autos: 66.0 64.9 65.1 60.9 68.2 Medium Trucks: 59.6 59.4 54.6 53.9 61.4 Heavy Trucks: 60.5 58.7 52.1 58.9 65.2 Vehicle Noise: 67.8 66.7 65.7 53.8 70.5 Centerline Distance to Noise Contour (in feet)												
Heavy Trucks: 84.25 -23.00 0,41 -1,20 -5.41 0,000												0.00
Unmitigated Noise Levels (without Topo and barrier attenuation)												0.00
VehicleType Leq Peak Hour Leq Day Leq Evenling Leq Night Ldn CNE							-1.20		-3.41	0,0	J00	0.00
Autos: 66.0 64.9 65.1 60.9 68.2 Medium Trucks: 59.6 59.4 54.6 53.9 61.4 Heavy Trucks: 60.5 58.7 52.1 58.9 65.2 Vehicle Noise: 67.8 66.7 65.7 63.6 70.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dB							Leo	Night		l dn	С	NFI
Medium Trucks: 59.6 59.4 54.6 53.9 61.4 Heavy Trucks: 60.5 58.7 52.1 58.9 65.2 Vehicle Noise: 67.8 66.7 65.7 63.6 70.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dB				_	Log L				1.9			68.
Heavy Trucks: 60.5 58.7 52.1 58.9 65.2 Vehicle Noise: 67.8 66.7 65.7 63.6 70.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dB	Medium Trucks:											61.
Vehicle Noise: 67.8 66.7 65.7 63.6 70.5 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dB												65.
70 dBA 65 dBA 60 dBA 55 dB	-											70.
	Centerline Distanc	e to Noise C	ontour (in fee	t)								
				L	70		65					
				Ldn:		56				262		565
CNEL: 60 129 277			C	NEL:		60		12	19	277		598

		-77-108 HIGH	aarallii.	TOIOL	- KEDIC						
Scenario						Project I			r 210		
Road Name		4.4				Job Nu	mber:	14324			
Road Segmen	it: n/o Highlan	d Av.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				s	ite Con	ditions (i	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	13,989 vehic	es					Autos:	15		
Peak Hour	Percentage:	6.82%				dium Tru		,			
Peak H	our Volume:	954 vehicle	S		He	avy Truci	ks (3+.	4xles):	15		
Vel	hicle Speed:	45 mph		ν	/ehicle l	Mix					
Near/Far Lar	ne Distance:	48 feet		F		icleType		Day	Evening	Night	Daily
Site Data						A	utos:	64.0%	16.8%	19.2%	97.52
Rar	rier Height:	0.0 feet			Me	edium Tru	ıcks:	77.1%	6.4%	16.5%	1.77
Barrier Type (0-W		0.0			F	leavy Tru	icks:	54.0%	3.0%	43.0%	0.71
Centerline Dis		52.0 feet		۸	loise Sc	urce Ele	vation	s (in fe	eet)		
Centerline Dist. 1	to Observer:	52.0 feet				Autos.	. 0.	000			
Barrier Distance t	to Observer:	0.0 feet			Mediu	m Trucks.		297			
Observer Height (,	5.0 feet			Heav	v Trucks.		004	Grade Ad	justment	: 0.0
	d Elevation:	0.0 feet				*					
	nd Elevation:	0.0 feet		L	ane Eq	uivalent i			feet)		
F	Road Grade:	0.0%				Autos.		400			
	Left View:	-90.0 degre				m Trucks.		.209			
	Right View:	90.0 degre	es		Heav	y Trucks.	46	.228			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow		ance	Finite		Fresi		Barrier Att		m Atter
Autos:	68.46	-2.15		0.38		-1.20		-4.66		000	0.0
Medium Trucks:	79.45	-19.56		0.41		-1.20		-4.87		000	0.0
Heavy Trucks:	84.25	-23.52		0.41		-1.20		-5.41	0.0	000	0.0
Unmitigated Noise							V - 1-4	1	1.1.		
VehicleType Autos:	Leq Peak Hou 65		64.4	Leq Ev	ening 64.6	Leq N	iignt 60.		Ldn 67.		NEL 68
Medium Trucks:	59		58.8		54.1		53.				61
Heavy Trucks:	59		58.1		51.6		58.		60. 64.		64
Vehicle Noise:	67		66.2		65.2		63.		70.		70
Centerline Distanc	a to Noise Co	ntour (in foot	-								
ocenine Distant	C TO NOISE CC	our (iii reet		70 d	BA	65 d	BA	- 6	60 dBA	55	dBA
			Ldn:		52		113		243		52

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 HIGH	WAY NO	DISE	PREDIC	CTION M	ODEL	(9/12/2	021)		
Road Nan	rio: OYC+P ne: State St. ent: n/o High l ar	nd Av.				Project Job N		: Peppe : 14324			
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data				s	ite Con	ditions	(Hard	= 10, S	oft = 15)		
	Traffic (Adt): Percentage: Hour Volume:	15,746 vehicle 6.82% 1,074 vehicles				edium Tru eavy Truc		,	15		
Ve	ehicle Speed:	45 mph		ν	ehicle	Mix					
Near/Far La	ane Distance:	48 feet		F		icleType		Day	Evening	Night	Daily
Site Data							lutos:	64.0%	-	19.29	-
Pa	rrier Height:	0.0 feet			М	ledium Tr	ucks:	77.1%		16.59	
Barrier Type (0-V	Vall, 1-Berm):	0.0				Heavy Tr	ucks:	54.0%	3.0%	43.09	% 0.71%
	ist. to Barrier:	52.0 feet		٨	loise S	ource El	evatio	ns (in f	eet)		
Centerline Dist.		52.0 feet				Autos	s: (0.000			
Barrier Distance		0.0 feet			Mediu	m Trucks	s: 2	2.297			
Observer Height	(Above Pad): Pad Elevation:	5.0 feet 0.0 feet			Hear	vy Trucks	s: 8	3.004	Grade Ad	justmer	nt: 0.0
	ad Elevation:	0.0 feet		,	ane Fo	uivalent	Dista	nce (in	feet)		
	Road Grade:	0.0%		F	u = q	Autos		6,400	,,,,,		
	Left View:	-90.0 degree	ae.		Mediu	m Trucks		6.209			
	Right View:	90.0 degree				vy Trucks		6.228			
FHWA Noise Mod	lel Calculation	s		_							
VehicleType	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fres	snel	Barrier Att	en Be	erm Atten
Autos:	68.46	-1.64		0.38	,	-1.20		-4.66	0.0	000	0.000
Medium Trucks:	79.45	-19.04		0.41		-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-23.00		0.41		-1.20		-5.41	0.0	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barrier a	attenu	ıation)						
VehicleType	Leq Peak Hot	ır Leq Day	L	eq Ev	ening	Leq	Night		Ldn	(CNEL
Autos:			64.9		65.1		61		68.		68.8
Medium Trucks:			59.4		54.6		53		61.		61.7
Heavy Trucks:			58.7		52.1		58		65.	_	65.3
Vehicle Noise:	67	. .8	66.7		65.7		63	.6	70.	5	70.9
Centerline Distan	ce to Noise C	ontour (in feet)									
				70 d		65 (60 dBA		5 dBA
			Ldn:		57		12	_	263		566
		CI	VEL:		60		12	9	278	i	599

	FHWA-R	D-77-108 HIGH	WAY N	IOISE	PREDIC	TION N	IODEL	(9/12/2	2021)		
	io: HY ne: State St. nt: n/o Highlar	nd Av.					t Name: lumber:				
	SPECIFIC II	NPUT DATA							L INPUT	'S	
Highway Data					Site Con	ditions	(Hard =				
Average Daily		17,252 vehicle	es					Autos			
	Percentage:	6.82%					ucks (2	,			
	lour Volume:	1,177 vehicle:	3		He	avy Tru	cks (3+	Axles)	: 15		
	hicle Speed:	45 mph		ı	Vehicle II	/lix					
Near/Far La	ne Distance:	48 feet		F		cleType	9	Day	Evening	Nigh	t Daily
Site Data							Autos:	64.09	6 16.8%	19.2	% 97.51%
Ba	rrier Heiaht:	0.0 feet			Me	edium T	rucks:	77.19	6.4%	16.5	% 1.78%
Barrier Type (0-W		0.0			F	leavy T	rucks:	54.09	6 3.0%	43.0	% 0.72%
Centerline Di	st. to Barrier:	52.0 feet		F	Noise So	uroo E	lovation	o (in t	foot)		
Centerline Dist.	to Observer:	52.0 feet		H	Worse 30	Auto		.000	eeij		
Barrier Distance	to Observer:	0.0 feet			Mediur			.297			
Observer Height	(Above Pad):	5.0 feet				y Truck		.004	Grade Ac	liuetma	nt: 0.0
P.	ad Elevation:	0.0 feet			rieav	y IIuuch	.s. o	.004	Orace Ac	justine	nn. 0.0
Ro	ad Elevation:	0.0 feet			Lane Equ	ıivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 46	.400			
	Left View:	-90.0 degree	es		Mediur	n Truck	s: 46	.209			
	Right View:	90.0 degree	es		Heav	y Truck	s: 46	.228			
FHWA Noise Mod	el Calculation	is									
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier At	ten E	Berm Atten
Autos:	68.46			0.3		-1.20		-4.66		000	0.000
Medium Trucks:	79.45			0.4		-1.20		-4.87		000	0.000
Heavy Trucks:	84.25	- 22.59		0.4	1	-1.20		-5.41	0.	000	0.000
Unmitigated Noise			barrier	atter	uation)						
VehicleType	Leg Peak Ho	, ,		Leq E	vening	Leq	Night		Ldn		CNEL
Autos:	66	5.4	65.3		65.5		61.	4	68.	6	69.2
Medium Trucks:	60	0.0	59.8		55.0		54.	3	61.	8	62.
Heavy Trucks:			59.1		52.5		59.		65.		65.
Vehicle Noise:	68	3.2	67.1		66.1		64.	0	71.	0	71.3
Centerline Distant	ce to Noise C	ontour (in feet)								
				70	dBA	65	dBA		60 dBA		55 dBA
			Ldn:		60		130		279		602
		C	VEL:		64		137	7	296	3	637

	FHWA-RE	0-77-108 HIGH	WAY NO	ISE PRED	ICTION N	MODEL (9/12)	(2021)	
	o: E e: State St. nt: s/o High l an	d Av.				t Name: Pepp Number: 1432		
	SPECIFIC IN	PUT DATA					EL INPUTS	
Highway Data				Site Co	nditions	(Hard = 10,	Soft = 15)	
Peak H	Percentage: our Volume:	20,772 vehicle 6.82% 1,417 vehicles	s			Auto rucks (2 Axles rcks (3+ Axles	s): 15	
	hicle Speed:	45 mph		Vehicle	Mix			
Near/Far La	ne Distance:	48 feet		Ve	hicleType	9 Day	Evening I	Night Daily
Site Data						Autos: 64.0	% 16.8%	19.2% 97.51%
Bai	rier Height:	0.0 feet			Medium 1	rucks: 77.1	% 6.4%	16.5% 1.78%
Barrier Type (0-W	all, 1-Berm):	0.0			Heavy 7	rucks: 54.0	% 3.0%	43.0% 0.72%
Centerline Dis		52.0 feet		Noise	Source E	levations (in	feet)	
Centerline Dist.		52.0 feet			Auto			
Barrier Distance		0.0 feet		Med	um Truck	s: 2.297		
Observer Height (,	5.0 feet		He	avy Truck	s: 8,004	Grade Adju	stment: 0.0
	nd Elevation:	0.0 feet			<u>.</u>			
	d Elevation:	0.0 feet		Lane E		t Distance (ii	n feet)	
F	Road Grade:	0.0%			Auto			
	Left View: Right View:	-90.0 degree 90.0 degree			um Truck avy Truck			
FHWA Noise Mode	l Calculation:	s						
VehicleType	REMEL	Traffic Flow	Distan	ce Fini	e Road	Fresnel	Barrier Atter	Berm Atten
Autos:	68.46	-0.43		0.38	-1.20	-4.6	6 0.00	0.000
Medium Trucks:	79.45	-17.82		0.41	-1.20	-4.8	7 0.00	0.000
Heavy Trucks:	84.25	-21.78		0.41	-1.20	-5.4	1 0.00	0.000
Unmitigated Noise	Levels (with	out Topo and I	arrier a	ttenuation)			
VehicleType	Leq Peak Hou	r Leq Day	Le	q Evening	Leq	Night	Ldn	CNEL
Autos:	67		6.1	66		62.2	69.4	70.0
Medium Trucks:	60		6.03	55		55.1	62.6	62.9
Heavy Trucks:	61		9.9	53		60.1	66.4	66.
Vehicle Noise:	69		67.9	66	9	64.8	71.8	72.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dBA	65	dBA	60 dBA	55 dBA
			.dn:	70 dbA		147	316	681
			IEL:	7		155	334	721
		011			-	.00	554	721

	FHWA-RL	-77-108 HIGH	WAY	NOISE	PREDIC	TION MC	DDEL (9/12/20	021)		
Scenario Road Name Road Seamen		d Av.				Project I Job Nu			r 210		
SITES	PECIFIC IN	DIIT DATA				N	NISE	MODE	L INPUT	9	
Highway Data	, Lon lo li	IUIDAIA			Site Con	ditions (
Average Daily T Peak Hour I Peak Ho		17,314 vehicle 6.82% 1,181 vehicle				dium Trui avy Truci	cks (2 ,				
Vet	nicle Speed:	45 mph		Η,	Vehicle I	Miv					
Near/Far Lar	e Distance:	48 feet		Ε'		icleType		Day	Evening	Night	Daily
Site Data					* 0		utos:	64.0%	Ü	19.2%	,
Barrier Type (0-Wa	rier Height: all, 1-Berm):	0.0 feet 0.0				edium Tru Heavy Tru		77.1% 54.0%		16.5% 43.0%	
Centerline Dis	t. to Barrier:	52.0 feet		,	Voice S	urce Ele	vation	e (in fa	not)		
	o Observer: Above Pad): d Elevation:	52.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediu. Heav	Autos. m Trucks. ry Trucks.	0. 2.	000 297 004	Grade Ad	justment	t: 0.0
	d Elevation:	0.0 feet		- 4	Lane Eq	uivalent i			reet)		
r	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Autos. m Trucks. ry Trucks.	46.	400 209 228			
FHWA Noise Mode	I Calculation:	3									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresi	nel	Barrier Att	en Bei	rm Atten
Autos:	68.46	-1.22		0.3	8	-1.20		-4.66	0.0	000	0.00
Medium Trucks:	79.45	-18.63		0.4	1	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	- 22.59		0.4	1	-1.20		-5.41	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	′	Leq E	vening	Leq N	light		Ldn	C	NEL
Autos:	66	4	65.4		65.6		61.	1	68.6	6	69.
Medium Trucks:	60		59.8		55.0		54.		61.8	-	62.
Heavy Trucks:	60		59.1		52.5		59.		65.6		65.
Vehicle Noise:	68	.2	67.1		66.1		64.)	71.0)	71.
Centerline Distanc	e to Noise Co	ntour (in feet,)								
			L	70 c		65 d			60 dBA		dBA
			Ldn:		60		130		280		603
		C	VEL:		64		137		296		638

Wednesday, January 24, 2024

FHWA-RD-77-108 HIGHWAY NOI Scenario: E+P				DEL (9/12	/2021)		
nd Av.							
NPUT DATA			NO	ISE MOD	EL INPUT	s	
		Site Con	ditions (F	lard = 10,	Soft = 15)		
6.82%		Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
45 mph		Vehicle	Mix				
48 feet				Dav	Evening	Night	Daily
					-	19.2%	-
0.0 feet		М	edium Tru	cks: 77.1	1% 6.4%	16.5%	1.77%
0.0			Heavy Tru	cks: 54.0	3.0%	43.0%	0.71%
		Noise Se					
			Autos:	0.000			
		Mediu	m Trucks:	2.297			
3 1, 11 1 1 7		Hear	y Trucks:	8.004	Grade Adj	iustment	: 0.0
			uivolont F	liotopoo (i	n foot)		
		Laile Eq			n reet)		
		Madie					
				46.228			
ns		1					
Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	en Ber	m Atten
6 -0.42	0	.38	-1.20	-4.6	6 0.0	000	0.000
5 -17.82	0	.41	-1.20	-4.8	7 0.0	000	0.000
5 -21.78	0	.41	-1.20	-5.4	1 0.0	000	0.000
	parrier atte	enuation)					
				_	Ldn		NEL
				62.2			70.0
							62.9
				60.1			66.5 72.1
Contour (in foot)							
enterline Distance to Noise Contour (in feet)							
	7.	0 dBA	65 dF	3A	60 dBA	55	dBA
		0 dBA 68	65 dE	3 <i>A</i> 147	60 dBA 316	55	dBA 682
	20,835 vehicle 6,82% 1,421 vehicles 45 mph 48 feet 0.0 feet 0.0 feet 0.0 feet 0.0 feet 0.0 feet 0.0 feet 5.0 feet 0.0 feet 5.0 feet 0.0 feet 5.0 feet 0.0 feet 5.0 feet 0.0 fe	0.0 feet 0.0	NPUT DATA Site Con	Project N Job Nur	Project Name: Pepp Job Number: 1432	Noise Nois	Project Name: Pepper 210 Job Number: 14324

Wednesday, January 24, 2024 Wednesday, January 24, 2024

	FHWA-R	D-77-108 H GH	WAY I	NOISE	PREDIC	TION N	/IODEL	9/12/2	(021)		
Road Nan	io: OYC ne: State St. nt: s/o High l ar	nd Av.					t Name: lumber:				
	SPECIFIC II	NPUT DATA							L INPUT	s	
Highway Data					Site Con	ditions	(Hard =				
Average Daily		23,393 vehicle	es					Autos			
	Percentage:	6.82%					ucks (2				
Peak F	lour Volume:	1,595 vehicle	В		He	avy Tru	cks (3+	Axles)	: 15		
Ve	hicle Speed:	45 mph		F	Vehicle I	Mix					
Near/Far La	ne Distance:	48 feet		ŀ		icleType	9	Day	Evening	Nigh	Daily
Site Data							Autos:	64.0%	6 16.8%	19.2	% 97.51%
Ra	rrier Heiaht:	0.0 feet			Me	edium 1	rucks:	77.19	6.4%	16.5	% 1.78%
Barrier Type (0-W		0.0			F	leavy 7	rucks:	54.0%	6 3.0%	43.0	% 0.72%
Centerline Di	st. to Barrier:	52.0 feet		H	Noise Sc	uroo E	lovation	c (in f	innt)		
Centerline Dist.	to Observer:	52.0 feet		F	Worse Sc	Auto		.000	eeij		
Barrier Distance	ance to Observer: 0.0 feet				A decadio	Auto n Truck		.000			
Observer Height	(Above Pad):					ri Truck y Truck		.004	Grade Ad	livotmo	nt: 0.0
P	ad Elevation:	0.0 feet			meav	y mucr	(S) 0	.004	Grade Ad	justrie	m. 0.0
Ro	ad Elevation:	0.0 feet			Lane Equ	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 46	400			
	Left View:	-90.0 degre	es		Mediui	n Truck	s: 46	209			
	Right View:	90.0 degree	es		Heav	y Truck	rs: 46	.228			
FHWA Noise Mod	el Calculation	ıs		1							
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en E	erm Atten
Autos:	68.46			0.3		-1.20		-4.66		000	0.000
Medium Trucks:	79.45			0.4	-1	-1.20		-4.87	0.	000	0.000
Heavy Trucks:	84.25	-21.27		0.4	1	-1.20		-5.41	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	r atter	uation)						
VehicleType	Leg Peak Ho	ur Leq Day	′	Leq E	vening	Leq	Night		Ldn		CNEL
Autos:	67	7.7	66.7		66.9		62.	7	69.	9	70.
Medium Trucks:	61	1.4	61.1		56.3		55.	6	63.	2	63.4
Heavy Trucks:	62		60.4		53.9		60.	6	66.	9	67.0
Vehicle Noise:	69	9.5	68.5		67.4		65.	3	72.	3	72.6
Centerline Distant	ce to Noise C	ontour (in feet)								
				70	dBA	65	dBA		60 dBA	- 4	55 dBA
			Ldn:		74		159)	342	?	737
		C	NEL:		78		168	3	362	2	780

FHWA-RD-77-108 HIGHWAY NO Scenario: HY		NOISE	PREDIC	TION N	10DEL (9/	12/20	021)				
Scenario Road Name Road Segment	: State St.	nd Av.					Name: Pe lumber: 14		r 210		
	PECIFIC IN	IPUT DATA							L INPUTS		
Highway Data					Site Con	ditions	(Hard = 1), Sc	oft = 15)		
Average Daily T Peak Hour F Peak Ho		25,732 vehicle 6.82% 1,755 vehicles					Aı ucks (2 Ax cks (3+ Ax		15 15 15		
	icle Speed:	45 mph		1	Vehicle I	Vix					
Near/Far Lan	e Distance:	48 feet			Veh	icleType	D	ay	Evening .	Night	Daily
Site Data							Autos: 6	4.0%	16.8%	19.2%	97.51%
Barr	ier Height:	0.0 feet			M	edium T	rucks: 7	7.1%	6.4%	16.5%	1.78%
Barrier Type (0-Wa	II, 1-Berm):	0.0			f	Heavy T	rucks: 5	4.0%	3.0%	43.0%	0.72%
Centerline Dist		52.0 feet		1	Noise Sc	ource E	levations (in fe	eet)		
Centerline Dist. to		52.0 feet				Auto	s: 0.00	0			
Barrier Distance to		0.0 feet 5.0 feet			Mediu	m Truck	s: 2.29	7			
	Pad Elevation: (Heav	ry Truck	s: 8.00	14	Grade Adju	stment	0.0
Road	d Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distance	(in i	feet)		
R	oad Grade:	0.0%				Auto	s: 46.40	00			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 46.20	9			
	Right View:	90.0 degree	s		Heav	ry Truck	s: 46.22	28			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fresnel		Barrier Atte		m Atten
Autos:	68.46			0.3		-1.20		1.66	0.00		0.00
Medium Trucks:	79.45			0.4	1	-1.20		1.87	0.00		0.00
Heavy Trucks:	84.25			0.4		-1.20	-5	5.41	0.00	00	0.00
Unmitigated Noise											
	eq Peak Ho.			Leq E	vening		Night		Ldn	CI	VEL
Autos:			67.1		67.3		63.1		70.4		70.
Medium Trucks:			61.5		56.7		56.1		63.6		63.
Heavy Trucks:			8.00		54.3		61.1		67.3		67.
Vehicle Noise:			68.9		67.8		65.7		72.7		73.
Centerline Distance	to Noise C	ontour (in feet)		70 (iBA	65	dBA	-	60 dBA	55	dBA
			Ldn:		79		169		365		786

0-111	o: OYC+P	77-108 HIGH\					•		•		
	e: State St.					,	Name: lumber:		r 210		
	e: State St. nt: s/o High l and	٨٧				JOD IN	iumber:	14324			
SITE :	SPECIFIC INF	UT DATA			Site Con		(Hard =		L INPUTS	5	
	T65- (0-44). C	3.455 vehic l e	_		JILC 0011	uniono		Autos:	15		
Average Daily		6.82%	S		Mo	olium Te	ucks (2 A		15		
	Percentage: our Volume:	0.02% 1.600 vehic l es					cks (3+ A				
	hicle Speed:	45 mph			7.70	avy IIu	cha (a i	1,163).	10		
Ve. Near/Far La	- p	48 feet		١	/ehicle l	Mix					
iveai/i ai Lai	ne Distance.	40 1661			Veh	icleType		Day	Evening	Night	Daily
Site Data						,	Autos:	64.0%	16.8%	19.2%	97.519
Bai	rier Height:	0.0 feet			M	edium T	rucks:	77.1%	6.4%	16.5%	1.78%
Barrier Type (0-W	all, 1-Berm):	0.0			- 1	Heavy T	rucks:	54.0%	3.0%	43.0%	0.719
Centerline Dis	st. to Barrier:	52.0 feet		_	Joine Se	ouroo E	levation:	o (in f	noti		
Centerline Dist.	to Observer:	52.0 feet		- 1	10/3e 30	Auto		000	901)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck		297			
Observer Height (5.0 feet				n Truck vy Truck		004	Grade Adi	uetmant	. 0.0
Pa	Pad Elevation: 0.0 feet				пеац	y Huck	s. o.	004	Oracle Auj	usunon	. 0.0
Ros	ad Elevation:	0.0 feet		L	.ane Eq	uivalen	t Distand	ce (in :	feet)		
1	Road Grade:	0.0%				Auto	s: 46.	400			
	Left View:	-90.0 degree	S		Mediu	m Truck	s: 46.	209			
	Right View:	90.0 degree	-		Heav	vy Truck	s: 46.	228			
HWA Noise Mode	el Calculations										
VehicleType		Traffic Flow	Dista			Road	Fresn		Barrier Atte		m Atten
Autos:	68.46	0.09		0.38		-1.20		-4.66	0.0		0.00
Medium Trucks:	79.45	-17.30		0.41		-1.20		-4.87	0.0		0.00
Heavy Trucks:	84.25	- 21.27		0.41	1	-1.20		-5.41	0.0	00	0.00
Inmitigated Noise											
,,	Leq Peak Hour	Leq Day		.eq Ev			Night		Ldn		NEL
Autos:	67.7		6.7		66.9		62.7		70.0		70.
Medium Trucks:	61.4		31.1		56.3		55.6		63.2		63.
Heavy Trucks: Vehicle Noise:	62.2		60.4 68.5		53.9 67.4				66.9 72.3		67. 72.
					07.4		00.0		, 2.0	•	, 2.
	e to Noise Cor	ιτοur (in τeet)									
Centerline Distanc				70 a	IBA	65	dBA	1 6	iO dBA	55	dBA
Senterline Distand		,	_dn:	70 a	IBA 74	65	dBA 159	(343 343	55	dBA 738

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 H I GH	WAY	NOISE	PREDIC	TION I	ODEL ()/12/20	021)				
Road Nan	io: HY+P ne: State St. nt: s/o High l an	d Av.					Name: I lumber:		210				
	SPECIFIC IN	IPUT DATA							L INPUTS	}			
Highway Data					Site Con	ditions	(Hard =	10, Sc	ft = 15)				
	Traffic (Adt): Percentage: lour Volume:	25,794 vehicle 6.82% 1,759 vehicle	nic l es						ucks (2 A cks (3+ A	,	15 15 15		
	hicle Speed:	45 mph		,	Vehicle I	Vix							
Near/Far La	ne Distance:	48 feet		Ī	Veh	icleType		Day	Evening	Night	Daily		
Site Data							Autos:	64.0%	16.8%	19.29	97.51%		
Ra	rrier Height:	0.0 feet			M	edium T	rucks:	77.1%	6.4%	16.5%	1.78%		
Barrier Type (0-W	/all, 1-Berm):	0.0			1	Heavy T	rucks:	54.0%	3.0%	43.0%	0.71%		
Centerline Di		52.0 feet		1	Noise So	ource El	evations	(in fe	eet)				
Centerline Dist.		52.0 feet				Auto	s: 0.0	000	,				
Barrier Distance		0.0 feet			Mediu	m Truck	s: 2.2	297					
Observer Height		5.0 feet			Heav	v Truck	s: 8.0	004	Grade Adju	ıstmen	t: 0.0		
	ad Elevation:	0.0 feet		*									
	ad Elevation:	0.0 feet	et La		Lane Equivalent Distance (in feet) Autos: 46.400								
	Road Grade:	0.0%											
	Left View:	-90.0 degree				m Truck		6.209					
	Right View:	90.0 degree	es		Heav	y Truck	s: 46.	228					
FHWA Noise Mod	el Calculation	s											
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Atte	n Be	rm Atten		
Autos:	68.46	0.51		0.3	8	-1.20		-4.66	0.0	00	0.000		
Medium Trucks:	79.45	-16.89		0.4	1	-1.20		-4.87	0.0	00	0.000		
Heavy Trucks:	84.25	-20.85		0.4	1	-1.20		-5.41	0.0	00	0.000		
Unmitigated Nois				er atten	uation)								
VehicleType	Leq Peak Hou			Leq E		Leq	Night		Ldn	C	NEL		
Autos:			67.1		67.3		63.1		70.4		70.9		
Medium Trucks:			61.5		56.7		56.1		63.6		63.8		
Heavy Trucks:			60.8		54.3		61.1		67.3		67.4		
Vehicle Noise:	69	1.9	68.9		67.8		65.7		72.7		73.1		
Centerline Distant	ce to Noise Co	ontour (in feet,)										
				70 c		65	dBA	- 6	i0 dBA	58	5 dBA		
			Ldn:		79		169		365		786		
		C	NEL:		83		179		386		832		

	FHWA-RD-77-108 HIGHWA\			NOISE	PREDIC	CTION	IODEL	(9/12/2	021)		
Road Nan	rio: E ne: Highland A int: w/o Drivew							: Peppei : 14324	r 210		
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				٤	ite Cor	ditions	(Hard	= 10, Sc			
Average Daily	Traffic (Adt):	9,924 vehic	es					Autos:	15		
Peak Hour	Percentage:	6.82%					,	Axles):			
Peak H	dour Volume:	677 vehicle	S		He	eavy Tru	cks (3+	Axles):	15		
	ehicle Speed:	45 mph		١	/ehicle	Mix					
Near/Far La	ane Distance:	48 feet		F		icleTyp	9	Day	Evening	Night	Daily
Site Data							Autos:	64.0%	16.8%	19.2%	97.51%
Ba	rrier Height:	0.0 feet			M	edium 1	rucks:	77.1%	6.4%	16.5%	1.78%
Barrier Type (0-V		0.0				Heavy 1	rucks:	54.0%	3.0%	43.0%	0.72%
Centerline D	ist. to Barrier:	52.0 feet			Noise Source Elevations (in feet)						
Centerline Dist.	to Observer:	52.0 feet		Ė	Autos: 0.000						
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck		2.297			
Observer Height	(Above Pad):	5.0 feet				v Truck		3.004	Grade Ao	iustment	. 0.0
P	Pad Elevation: 0.0 feet									Judimom	. 0.0
Ro	ad Elevation:	0.0 feet	L	ane Eq	uivalen	t Distai	nce (in i	feet)			
	Road Grade:	0.0%				Auto	s: 46	6.400			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 46	5.209			
	Right View:	90.0 degre	es		Hea	vy Truck	rs: 46	5.228			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	snel	Barrier Att	en Bei	m Atten
Autos:	68.46	-3.64		0.38	38 -1.20		-4.66		0.	000	0.000
Medium Trucks:	79.45	-21.03		0.41		-1.20		-4.87	0.	000	0.000
Heavy Trucks:	84.25	- 24.99		0.41		-1.20		-5.41	0.	000	0.000
Unmitigated Nois	e Levels (with	out Topo and	barri	er atteni	uation)						
VehicleType	Leg Peak Ho			Leg Ev			Night		Ldn		NEL
Autos:	-	1.0	62.9		63.1		59		66.	_	66.
Medium Trucks:		7.6	57.4		52.6		51		59.		59.
Heavy Trucks:		3.5	56.7		50.1		56		63.		63.
Vehicle Noise:		5.8	64.7		63.7		61	.6	68.	b	68.9
Centerline Distan	ce to Noise C	ontour (in feet)	70 -	ID 4		-ID 4				7D 4
			Ldn:	70 a	<i>BA</i> 42	65	dBA	0	60 dBA 193		dBA 416
		0			42						416
CNE		· *LL.		44		95		204		-+40	

	FHWA-RD-77-108 HIGHWAY Scenario: OYC					TION	MODEL (9	9/12/20	21)		
	e: Highland A						t Name: F Number: 1		210		
SITE	SPECIFIC II	NPUT DATA					NOISE N	IODEL	. INPUTS	3	
Highway Data				S	ite Con	ditions	(Hard =	10, Soi	ft = 15)		
Peak H	Percentage: our Volume:	13,566 vehicle 6.82% 925 vehicle					rucks (2 A icks (3+ A	,	15 15 15		
	hicle Speed:	45 mph		V	ehicle i	Иiх					
Near/Far La	ne Distance:	48 feet			Veh	icleTyp	е	Day	Evening	Night	Daily
Site Data Bai Barrier Type (0-W	rier Height: 'all, 1-Berm):	0.0 feet 0.0				edium 1 Heavy 1	Trucks:	64.0% 77.1% 54.0%	16.8% 6.4% 3.0%	19.2% 16.5% 43.0%	1.78%
Centerline Dis	st. to Barrier:	52.0 feet			oico Sa	ourco E	levations	(in fo	n#l		
Barrier Distance Observer Height (Pa Roa	r/line Dist. to Observer: 52.0 feet 52.0 feet 7 bistance to Observer: 0.0 feet 7 height (Above Pad): 5.0 feet 9 hed Elevation: 0.0 feet 8 head Elevation: 0.0 feet 8 head Grade: 0.0% 1.00 feet 9.00 degrees 1.00 feet 9.00 degrees 9.00 degrees 9.00 degrees		L	Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustn Lane Equivalent Distance (in feet) Autos: 46.400 Medium Trucks: 46.209 Heavy Trucks: 46.228						t: 0.0	
FHWA Noise Mode	el Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dist	tance	nce Finite		Fresn	el E	Barrier Atte	en Be	rm Atten
Autos:	68.46	-2.28		0.38		-1.20		-4.66	0.0	100	0.000
Medium Trucks:	79.45	-19.67		0.41		-1.20		-4.87	0.0	00	0.000
Heavy Trucks:	84.25	-23.63		0.41		-1.20		-5.41	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Da	y	Leq Ev	ening	Leq	Night		Ldn	С	NEL
Autos:		5.4	64.3		64.5		60.3		67.6		68.1
Medium Trucks:	59	9.0	58.7		54.0		53.3		60.8	}	61.0
Heavy Trucks:		9.8	58.0		51.5		58.3	i	64.6	i	64.6
Vehicle Noise:	67	7.2	66.1		65.1		62.9		69.9)	70.3
Centerline Distance	e to Noise C	ontour (in fee	t)								
			L	70 di		65	dBA	60) dBA	55	dBA
		_	Ldn:		51		110		238		513
		C	NEL:		54		117		252		542

: E+P										
: Highland Av					Project N Job Nur			210		
					300 1401	iibei.	14324			
									_	
PECIFIC IN	PUT DATA			ito Con					S	
	10.000		-	nte con	unions (i					
		es		Mo	dium Trum					
		_								
		5	L	1 1						
			١							
e Distance.	40 1661			Veh				0		Daily
ier Height:	0.0 feet									
ıll, 1-Berm):	0.0			,	leavy Iru	cks:	54.0%	3.0%	43.0%	0.70
to Barrier:			٨	loise Sc	urce Elev	ation	s (in fe	eet)		
	52.0 feet				Autos:	0.	000			
				Mediu	m Trucks:	2.	297			
,				Heav	y Trucks:	8.	004	Grade Ad	justmen	t: 0.0
Pad Elevation: Road Elevation:			١.							
				ane Eq			_	eet)		
	-									
Right View:	90.0 degree	es		meav	y Trucks:	40.	.226			
Calculations										
REMEL	Traffic Flow	Dist				Fresi				rm Atten
										0.00
										0.00
84.25	-24.99		0.41		-1.20		-5.41	0.0	000	0.00
							1			
			Leg Ev		Leq N	_				NEL
							-		-	66
	-						-			59
										63
				63.8		61.	5	68.6	ь	69
Centerline Distance to Noise Contour (in feet)				0.5.15			i0 dBA	-	- 10.4	
		Ldn:	70 a	<i>BA</i> 42	65 dE	90 90		194		5 dBA 41:
	PECIFIC INI raffic (Adt): rercentage: ur Volume: icle Speed: e Distance: ier Height: II, 1-Berm): . to Barrier: Observer: Observer: Observer: Observer: Elevation: Dead Grade: Left View: Right View: Calculations REMEL 68.46 79.45 68.46 64.55 Levels (witho	Percentage: 6.82% 687 vehicles 687 vehicles	PECIFIC INPUT DATA	PECIFIC INPUT DATA S	PECIFIC INPUT DATA Site Con raffic (Adt): 10,080 vehicles learned for the first of the f	PECIFIC INPUT DATA Site Conditions (https://precentage: 6.82% Medium Truck: Cles Speed: 45 mph e Distance: 48 feet Wehicle Mix Vehicle Mix Veh	PECIFIC INPUT DATA Site Conditions (Hard = raffic (Adt): 10,080 vehicles Percentage: 6.82% Medium Trucks (2. Heavy Trucks (3+. Vehicle Mix vehicle fill, 1-Berm): 0.0 Autos: 10. Barrier: 52.0 feet Observer: 52.0 feet Observer: 52.0 feet Heavy Trucks: 1. Heavy Tru	PECIFIC INPUT DATA Site Conditions (Hard = 10, Sc Autos: 10, Sc Auto	PECIFIC INPUT DATA Site Conditions (Hard = 10, Soft = 15)	Noise Nois

Wednesday, January 24, 2024

FHWA-RD-77-108 HIGHWAY NO Scenario: OYC+P					PREDIC	CTION M	ODEL	(9/12/2	021)		
Road Nam	io: OYC+P ie: High l and A nt: w/o Drivew					Project Job N		: Peppe : 14324			
SITE	SPECIFIC IN	NPUT DATA							L INPUT	s	
Highway Data				5	Site Con	ditions	(Hard	= 10, S	oft = 15)		
	Traffic (Adt): Percentage: lour Volume:	13,722 vehicle 6.82% 936 vehicle				edium Tra eavy True		,	15		
Ve	hicle Speed:	45 mph		1	/ehicle	Mix					
Near/Far La	ne Distance:	48 feet		F		icleType		Day	Evening	Night	Dailv
Site Data							Autos:	64.09	-	19.29	6 97.53%
Bai	rrier Height:	0.0 feet			М	ledium T	rucks:	77.19	6.4%	16.59	6 1.76%
Barrier Type (0-W	all, 1-Berm):	0.0				Heavy T	ucks:	54.0%	6 3.0%	43.09	% 0.71%
Centerline Dis		52.0 feet		1	loise S	ource El	evatio	ns (in f	eet)		
Centerline Dist.		52.0 feet				Auto	s: (0.000	-		
Barrier Distance		0.0 feet			Mediu	m Truck	s: 2	2.297			
	erver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet				Hear	vy Truck	s: 8	3.004	Grade Ad	justmer	nt: 0.0
	Pad Elevation: 0.0 feet Road Elevation: 0.0 feet			,	ane Fa	uivalent	Dieta	nce (in	foot)		
	Road Grade:	0.0%		ľ	une Eq	Auto		6.400	1001/		
· '	Left View:	-90.0 degree	00		Madiu	m Truck		6.209			
	Right View:	90.0 degree				vy Truck		6.228			
FHWA Noise Mode	el Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresnel		Barrier Atten		erm Atten
Autos:	68.46	-2.23		0.38	3	-1.20		-4.66	0.0	000	0.000
Medium Trucks:	79.45	-19.67		0.4	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25	-23.63		0.4	1	-1.20		-5.41	0.0	000	0.000
Unmitigated Noise	Levels (with	out Topo and	barri	er atten	uation)						
, , ,	Leq Peak Hou	ur Leq Day	/	Leq Ev	rening	Leq	Night		Ldn		CNEL
Autos:			64.3		64.5		60		67.		68.2
Medium Trucks:			58.7		54.0		53		60.		61.0
Heavy Trucks:		9.8	58.0		51.5		58		64.		64.6
Vehicle Noise:	67	7.2	66.1		65.1		63	.0	69.	9	70.3
Centerline Distance	e to Noise Co	ontour (in feet)								
			L	70 c		65	dBA		60 dBA		5 dBA
			Ldn:		51		11		239		515
		C	NEL:		55		11	7	253	3	545

Barrier Height: 0.0 feet 0.	Daily 97.519
Average Daily Traific (Adi):	1.789
Average Daily Traffic (Adt): 14,922 vehicles Peak Hour Percentage: 6,82% Medium Trucks (2 Axles): 15 Heavy Trucks (3 Axles): 15	1.789
Peak Hour Percentage: 6.82%	1.789
Peak Hour Volume: Vehicle Speed: As mph Vehicle Mix Vehicle Mix Vehicle Mix Vehicle Type Day Evening Night Vehicle Type Nose Surce Elevations In Feet Autos: 64.0% 64.0%	1.789
Vehicle Speed: Near/Far Lane Distance: 45 mph 48 feet Vehicle Mix Vehicle Type Day Evening Night Site Data Barrier Height: 0.0 feet Medium Trucks: 64.0% 16.8% 192%: 192	1.789
Near/Far Lane Distance: 48 feet Vehicle Mix Modelum Trucks: 71.9% 64.9% 16.6% 16.6% Medium Trucks: 54.0% 3.0% 43.0% Medium Trucks: 54.0% 3.0% 43.0% Medium Trucks: 2.297 Medium Trucks: 3.004 Grade Adjustment: 1 Medium Trucks: 46.400 Medium Trucks: 46.209 Medium Trucks:	1.789
Site Data	1.789
Barrier Height: 0.0 feet Medium Trucks: 77.1% 6.4% 16.5%	1.789
Barrier Type (0-Wall, 1-Berm): 0.0 teet Heavy Trucks: 54.0% 3.0% 43.0%	
Barrier Type (0-Wall, 1-Berm): 0,0 Heavy Trucks: 54.0% 3.0% 43.0%	
Centerline Dist. to Observer:	0.729
Centerline Dist. to Observer: S2.0 feet Barrier Distance to Observer: O.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: S2.0 feet Heavy Trucks: 8.004 Grade Adjustment: S2.0 feet Heavy Trucks: S2.0 feet	
Medium Trucks: 2.297	
Diserver Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0 1.0 feet Lane Equivalent Distance (in feet)	
Pad Elevation: 0.0 feet	0.0
Road Grade: 0.0%	
Left View:	
FHWA Noise Model Calculations Property (a) REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Autos 68.46 -1.87 0.38 -1.20 -4.66 0.000 Medium Trucks: 79.45 -19.26 0.41 -1.20 -4.87 0.000	
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bernier Atten Autos: 68.46 -1.87 0.38 -1.20 -4.66 0.000 Medium Trucks: 79.45 -19.26 0.41 -1.20 -4.87 0.000	
Autos: 68.46 -1.87 0.38 -1.20 -4.66 0.000 Medium Trucks: 79.45 -19.26 0.41 -1.20 -4.87 0.000	
Medium Trucks: 79.45 -19.26 0.41 -1.20 -4.87 0.000	
	0.00
	0.00
Heavy Trucks: 84.25 -23.22 0.41 -1.20 -5.41 0.000	0.00
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNi	= 1
Autos: 65,8 64,7 64,9 60,7 68,0	68.
Medium Trucks: 59.4 59.1 54.4 53.7 61.2	61.
Heavy Trucks: 60.2 58.4 51.9 58.7 65.0	
Vehicle Noise: 67.6 66.5 65.5 63.3 70.3	
Centerline Distance to Noise Contour (in feet)	65. 70.
70 dBA 65 dBA 60 dBA 55 d.	65.
Ldn: 55 118 254	65. 70.
CNEL: 58 125 268	65. 70.

	FHWA-RD-77-108 HIGHWAY N			NUISE	PREDIC	CTION	MODEL (9/12/202	21)		
Scenario: Road Name: Road Segment:	Highland A						t Name: I Number:		210		
	ECIFIC IN	IPUT DATA							INPUTS	3	
Highway Data				S	ite Cor	ditions	(Hard =	10, Sof	t = 15)		
Average Daily Tra Peak Hour Pe Peak Hou	rcentage: r Volume:	9,924 vehicle 6.82% 677 vehicle					rucks (2 A Icks (3+ A		15 15 15		
	le Speed:	45 mph		ν	ehicle	Mix					
Near/Far Lane	Distance:	48 feet			Veh	icleTyp	ө	Day I	Evening	Night	Daily
Site Data Barrie Barrier Type (0-Wall,	er Height: , 1-Berm):	0.0 feet 0.0				edium 1 Heavy 1	rucks:	64.0% 77.1% 54.0%	16.8% 6.4% 3.0%	19.2% 16.5% 43.0%	1.78%
Centerline Dist.	to Barrier:	52.0 feet		_	loise S	ource F	levations	(in fee	of)		
Barrier Distance to Observer Height (Ab Pad Road Roi	10 10 10 10 10 10 10 10		L	Hea ane Eq Mediu	Auto m Truck vy Truck uivalen Auto m Truck vy Truck	ks: 2.5 ks: 8.0 t Distanc os: 46. ks: 46.	e (in fe 400 209	Grade Adj.	ustmen	: 0.0	
FHWA Noise Model (Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fresn	el B	Barrier Atte	en Be	m Atten
Autos:	68.46	-3.64		0.38		-1.20		-4.66	0.0		0.000
Medium Trucks:	79.45	-21.03		0.41		-1.20		-4.87	0.0		0.000
Heavy Trucks:	84.25	-24.99		0.41		-1.20		-5.41	0.0	100	0.000
Unmitigated Noise L	evels (with	out Topo and	barrie	er attent	ıation)						
VehicleType Le	eq Peak Hοι	ır Leq Daj		Leq Ev	ening	Leq	Night	I	Ldn	С	NEL
Autos:	64		62.9		63.1		59.0		66.2		66.8
Medium Trucks:	57		57.4		52.6		51.9		59.4		59.7
Heavy Trucks:	58		56.7		50.1		56.9		63.2		63.3
Vehicle Noise:	65	.8	64.7		63.7		61.6	i	68.5	•	68.9
Centerline Distance	to Noise Co	ontour (in feet)								
			L	70 d		65	dBA	60) dBA	55	dBA
		_	Ldn:		42		90		193		416
		С	NEL:		44		95		204		440

FHWA-RD-77-108 HJGHWAY N			NOISE	PREDI	CTION IN	IODEL	(9/12/2	021)				
Road Nam	rio: HY+P ne: High l and Av nt: w/o Drivewa					,		Peppe 14324	r 210			
	SPECIFIC IN	PUT DATA			0" 0	N nditions			L INPUT	s		
Peak H Ve	Percentage:	15,078 vehick 6.82% 1,028 vehicle: 45 mph 48 feet			M H Vehicle	edium Tr eavy Tru Mix	ucks (2 cks (3+	Autos: Axles): Axles):	15 15 15			
	ine Distance.	40 1661			Vel	nicleType		Day	Evening	Night	Daily	
Site Data Ba Barrier Type (0-W	rrier Height: Vall, 1-Berm):	0.0 feet 0.0				, ledium T Heavy T		64.0% 77.1% 54.0%	6.4%	19.2% 16.5% 43.0%	1.76	
Centerline Dist. Centerline Dist. Barrier Distance Observer Height	to Observer: to Observer: (Above Pad):	52.0 feet 52.0 feet 0.0 feet 5.0 feet 0.0 feet			Mediu	ource El Auto im Truck vy Truck	s: 0	ns (in fo 0.000 2.297 3.004	e et) Grade Ad	justment	: 0.0	
	Pad Elevation: Road Elevation:				Lane Eq	uivalen	t Distar	nce (in	feet)			
	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Auto im Truck vy Truck	s: 46	6.400 6.209 6.228				
FHWA Noise Mod	el Calculations											
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	snel	Barrier Att	en Bei	m Atter	
Autos: Medium Trucks: Heavy Trucks:	79.45	-1.82 -19.26 -23.22		0.3 0.4 0.4	41 -1.20			-4.66 -4.87 -5.41	0.0	000 000	0.0	
Unmitigated Noise						1.20		0.41	0.0		0.0	
VehicleType	Lea Peak Hour				vening	Lea	Night		Ldn	С	NEL	
Autos:			64.8		65.0		60	.8	68.0		68	
Medium Trucks:	59.	4	59.1		54.4	ı	53	.7	61.2	2	61	
Heavy Trucks: Vehicle Noise:			58.4 66.5		51.9 65.5		58 63		65.0 70.0		65 70	
Centerline Distan	ce to Noise Co	ntour (in feet,)									
				70	dBA	65	dBA		60 dBA		dBA	
			Ldn:		55		11		255		54	
		C	NEL:		58		12	5	269	1	58	

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 HIGH	WAY N	OISE	PREDIC	CTION M	ODEL	(9/12/2	021)				
Road Nar	rio: E+P ne: High l and A ent: w/o Pepper					Project Job Ni		: Peppe : 14324					
SITE	SPECIFIC IN	IPUT DATA				N	OISE	MODE	L INPUT	S			
Highway Data				s	ite Con	ditions	Hard	= 10, S	oft = 15)				
	Traffic (Adt): Percentage: Hour Volume:	11,452 vehicle 6.82% 781 vehicles				dium Tru avy Truc		,	15				
Ve	ehicle Speed:	45 mph		ν	ehicle	Mix							
Near/Far La	ane Distance:	48 feet		F		icleType		Day	Evening	Night	Daily		
Site Data							utos:	64.0%	-	19.29	-		
Rs	rrier Height:	0.0 feet			М	edium Tr	ucks:	77.1%	6.4%	16.59	6 1.54%		
Barrier Type (0-V	Vall, 1-Berm):	0.0				Heavy Tr	ucks:	54.0%	3.0%	43.09	% 0.62%		
	ist. to Barrier:	52.0 feet		٨	loise S	ource Ele	evatio	ns (in f	eet)				
Centerline Dist.		52.0 feet			Autos: 0,000								
Barrier Distance		0.0 feet			Mediu	m Trucks	: 1	2.297					
	Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet				Hear	vy Trucks	s: 8	3.004	Grade Ad	justmer	nt: 0.0		
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Dista	nce (in	feet)				
	Road Grade:	0.0%				Autos	: 4	6.400					
	Left View:	-90.0 degree	s		Mediu	m Trucks	: 4	3.209					
	Right View:	90.0 degree	s		Hear	y Trucks	s: 40	6.228					
FHWA Noise Mod	lel Calculation	s											
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fres	snel	Barrier Att	en Be	erm Atten		
Autos:	68.46	-3.01		0.38		-1.20		-4.66	0.0	000	0.000		
Medium Trucks:	79.45	-21.03		0.41		-1.20		-4.87	0.0	000	0.000		
Heavy Trucks:	84.25	-24.99		0.41		-1.20		-5.41	0.0	000	0.000		
Unmitigated Nois													
VehicleType	Leg Peak Hou		_	.eq Ev		Leq I			Ldn		CNEL		
Autos:			63.6		63.8		59		66.		67.4		
Medium Trucks:			57.4		52.6		51		59.		59.7		
Heavy Trucks: Vehicle Noise:			56.7 65.2		50.1 64.3		56 61		63. 68.		63.3 69.3		
					04.0		31		30.		55.5		
Centerline Distan	ce to Noise Co	ontour (in feet)		70 d	RΔ	65 (IRΔ	т.	50 dBA	5	5 dBA		
			Ldn:	, o u	44	00 0			205		441		
			VFI:	44 95 205 47 101 217			468						
		01					10		-11				

	FHWA-R	D-77-108 H GH	YAW	NOISE	PREDIC	TION N	IODEL (9/12/2	(021)		
Road Nan	io: OYC ne: High l and A nt: w/o Peppe						t Name: lumber:				
	SPECIFIC II	NPUT DATA			04. 0				L INPUT	S	
Highway Data					Site Con	ditions					
Average Daily		13,566 vehicle	es					Autos			
	Percentage:	6.82%					ucks (2				
	four Volume:	925 vehidle	В		He	avy Tru	cks (3+.	Axles)	: 15		
	hicle Speed:	45 mph		Ī	Vehicle I	/lix					
Near/Far La	ne Distance:	48 feet		İ		cleType	9	Day	Evening	Nigh	Daily
Site Data							Autos:	64.09	6 16.8%	19.2	% 97.51%
Ba	rrier Heiaht:	0.0 feet			Me	edium T	rucks:	77.19	6.4%	16.5	% 1.78%
Barrier Type (0-W		0.0			F	leavy T	rucks:	54.0%	6 3.0%	43.0	% 0.72%
Centerline Di	. ,	52.0 feet			Noise Sc	E	lassatian	a lin f	'a a 41		
Centerline Dist.	to Observer:	52.0 feet		H	Noise 30	Auto		000	eei)		
Barrier Distance	to Observer:	0.0 feet			A decadio	Auto n Truck		297			
Observer Height	(Above Pad):	5.0 feet						004	Grade Ad	livotmo	nt: 0.0
P	ad Elevation:	0.0 feet			Heav	y Truck	:s: 8.	004	Grade Ad	justrie	nt. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	ıivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 46	400			
	Left View:	-90.0 degre	es		Mediui	n Truck	s: 46	209			
	Right View:	90.0 degre	es		Heav	y Truck	s: 46	.228			
FHWA Noise Mod	el Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite		Fresi		Barrier Att		erm Atten
Autos:	68.46			0.3		-1.20		-4.66		000	0.000
Medium Trucks:	79.45			0.4		-1.20		-4.87		000	0.000
Heavy Trucks:	84.25	-23.63		0.4	1	-1.20		-5.41	0.	000	0.000
Unmitigated Noise			barrie	r atter	uation)						
VehicleType	Leg Peak Ho	, ,		Leq E	vening	Leq	Night		Ldn	_	CNEL
Autos:	65	5.4	64.3		64.5		60.	3	67.	6	68.
Medium Trucks:	59	9.0	58.7		54.0		53.	3	60.	8	61.0
Heavy Trucks:	59	9.8	58.0		51.5		58.	3	64.	6	64.6
Vehicle Noise:	67	7.2	66.1		65.1		62.	9	69.	9	70.3
Centerline Distant	ce to Noise C	ontour (in feet)								
				70	dBA	65	dBA		60 dBA		55 dBA
			Ldn:		51		110		238		513
		C	NEL:		54		117		252	2	542

	FHWA-RI	D-77-108 HIG	HWAY	NOISE	PREDI	CTION	MODEL	(9/12/2	021)		
Scenario Road Namo Road Segmen	e: High l and A						t Name: Number:				
	PECIFIC IN	NPUT DATA							L INPUT	S	
		14,922 vehicl 6.82% 1,018 vehicl 45 mph			М	edium T eavy Tru	rucks (2 rcks (3+	Autos Axles)	: 15		
Near/Far Lar	ne Distance:	48 feet		-		nicleTvp	e	Dav	Evening	Night	Daily
Site Data Bar Barrier Type (0-Wa	rier Height:	0.0 feet 0.0			٨	ledium i		64.0% 77.1% 54.0%	6 16.8% 6 6.4%	19.2% 16.5% 43.0%	1.78%
Centerline Dis	t. to Barrier:	52.0 feet		l.	Noise S	ource F	levation	ns (in f	eet)		
Centerline Dist. to Observer: 52.0 feet					Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8,004 Grade Adjustment: 0 Lane Equivalent Distance (in feet) Autos: 46,400 Medium Trucks: 46,209 Heavy Trucks: 46,228						
FHWA Noise Mode	I Calculation	ıs		-							
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		m Atten
Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25	-19.2	6	0.3 0.4 0.4	1	-1.20 -1.20 -1.20		-4.66 -4.87 -5.41	0.0	000 000 000	0.00
Unmitigated Noise	Levels (with	out Topo and	l barri	ier atten	uation)						
VehicleType	Leq Peak Ho	ur Leq Da	ay .	Leq E	vening	Leq	Night		Ldn	С	NEL
Autos:		5.8	64.7		64.9		60.		68.0		68.
Medium Trucks:		9.4	59.1		54.		53.		61.2		61.
Heavy Trucks: _ Vehicle Noise:		7.6	58.4 66.5		51.9 65.9		58. 63.		65.0 70.3	-	65. 70.
Centerline Distanc	o to Noiso C	ontour (in for	.+1								
Centernile Distanc	e to worse C	untour (III let	11)	70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		55		118		254		546
		(ONEL:		58		12		268		578

FHWA-RD-77-108 HIGH									
Scenario: OYC+P				Project Na			210		
Road Name: Highland Av. Road Segment: w/o Pepper Av.				Job Nun	iber:	14324			
		-							
SITE SPECIFIC INPUT DATA		-	_				LINPUT	S	
Highway Data		Site	Con	ditions (H					
Average Daily Traffic (Adt): 15,094 vehicle	s					Autos:	15		
Peak Hour Percentage: 6.82%				dium Truci		,	15		
Peak Hour Volume: 1,029 vehicles			He	avy Trucks	(3+)	(xies	15		
Vehicle Speed: 45 mph		Veh	icle N	/lix					
Near/Far Lane Distance: 48 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data				Au	os:	64.0%	16.8%	19.2%	97.76
Barrier Height: 0.0 feet		1	Me	edium Truc	ks:	77.1%		16.5%	1.60
Barrier Type (0-Wall, 1-Berm): 0.0			F	leavy Truc	ks:	54.0%	3.0%	43.0%	0.64
Centerline Dist. to Barrier: 52.0 feet		Nois	se So	urce Elev	ation	s (in fe	et)		
Centerline Dist. to Observer: 52.0 feet		7407.	,6 00	Autos:		000	01)		
Barrier Distance to Observer: 0.0 feet			lediur	n Trucks:		297			
Observer Height (Above Pad): 5.0 feet				v Trucks:		004	Grade Ad	iustment.	: 0.0
Pad Elevation: 0.0 feet									
Road Elevation: 0.0 feet		Lan	e Equ	ıivalent D			eet)		
Road Grade: 0.0%				Autos:		400			
Left View: -90.0 degree				n Trucks:		209			
Right View: 90.0 degree	·S		Heav	y Trucks:	46.	228			
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow	Distan	ce F	inite	Road	Fresr	iel .	Barrier Att	en Ber	m Atter
Autos: 68.46 -1.81		0.38		-1.20		-4.66	0.0	000	0.0
Medium Trucks: 79.45 -19.67		0.41		-1.20		-4.87	0.0	000	0.00
Heavy Trucks: 84.25 -23.63		0.41		-1.20		-5.41	0.0	000	0.0
Unmitigated Noise Levels (without Topo and	barrier a	ttenuati	ion)						
VehicleType Leg Peak Hour Leg Day		g Eveni		Leg Ni	ght		Ldn	CI	NEL
Autos: 65.8	64.8		65.0		60.8	3	68.	ĺ	68
Medium Trucks: 59.0	58.7		54.0		53.3	3	60.8	3	61
Heavy Trucks: 59.8	58.0		51.5		58.3	3	64.6	3	64
Vehicle Noise: 67.5	66.4		65.5		63.2	2	70.2	2	70
Centerline Distance to Noise Contour (in feet)									
Centennie Distance to Noise Contour (in feet)		70 dBA	T	65 dB	Δ	6	0 dBA	55	dBA
Centerine Distance to Noise Contour (in reet)	L	70 UDA		00 00					UD/ I
	Ldn:	70 UDA	54	00 00	115		249		53

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL (9	9/12/20	021)		
Scenario Road Name Road Segment	: Highland A						Name: F umber: '		r 210		
SITE S	PECIFIC IN	IPUT DATA				N	IOISE N	IODE	L INPUTS		
Highway Data				5	Site Con	ditions	(Hard =	10, Sc	oft = 15)		
		16,450 vehicle 6.82% 1,122 vehicle 45 mph				avy Tru	ucks (2 A cks (3+ A	,			
Near/Far Lane	e Distance:	48 feet		,		icleType		Day	Evening 1	Vight	Daily
Site Data Barra	ier Height:	0.0 feet			М	edium T	Autos: rucks:	64.0% 77.1%	16.8% 6.4%	19.2% 16.5%	97.74% 1.61%
Barrier Type (0-Wa		0.0			,	leavy T	rucks:	54.0%	3.0%	43.0%	0.65%
Centerline Dist		52.0 feet		٨	loise So	urce El	evations	(in fe	eet)		
Centerline Dist. to		52.0 feet				Auto.	s: 0.0	000			
Barrier Distance to		0.0 feet			Mediu	m Truck	s: 2.2	297			
Observer Height (A		5.0 feet			Heav	y Truck	s: 8.0	004	Grade Adjus	stment:	0.0
	l Elevation:	0.0 feet					Di-4	- (:	C4)		
	f Elevation:	0.0 feet		L	.ane ⊑q		Distanc		reet)		
Ri	oad Grade:	0.0%				Auto					
,	Left View: Right View:	-90.0 degre 90.0 degre				n Truck ry Truck					
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresn	el	Barrier Atten	Bern	n Atten
Autos:	68.46	-1.44		0.38	3	-1.20		-4.66	0.00	0	0.000
Medium Trucks:	79.45	-19.26		0.41	1	-1.20		-4.87	0.00	0	0.000
Heavy Trucks:	84.25	-23.22		0.41	1	-1.20		-5.41	0.00	0	0.000
Unmitigated Noise	Levels (with	out Topo and	barri	er atten	uation)						
VehicleType L	eq Peak Ho.	ır Leq Day	/	Leq Ev	rening	Leq	Night		Ldn	CN	EL
Autos:	66	3.2	65.1		65.3		61.2		68.4		69.0
Medium Trucks:	59	9.4	59.1		54.4		53.7		61.2		61.4
Heavy Trucks:).2	58.4		51.9		58.7		65.0		65.0
Vehicle Noise:	67	7.9	66.8		65.9		63.6		70.6		71.0
Centerline Distance	to Noise Co	ontour (in feet)								
				70 a	IBA .	65	dBA	6	60 dBA	55 c	IBA .
			Ldn:		57		122		264		568
		С	NEL:		60		130		280		602

FHWA-F	D-77-108 HIGH	WAY	NOISI	E PREDIC	CTION IN	IODEL	(9/12/20	021)		
Scenario: E Road Name: Highland / Road Segment: e/o Peppe							Pepper 14324	r 210		
SITE SPECIFIC I	NPUT DATA			04. 0				L INPUT	S	
Highway Data				Site Cor	ditions	(Hard				
Average Daily Traffic (Adt):	16,653 vehic	es					Autos:	15		
Peak Hour Percentage:	6.82%				edium Tr			15		
Peak Hour Volume:	1,136 vehidle	S		He	avy Tru	cks (3+	Axles):	15		
Vehicle Speed:	45 mph			Vehicle	Mix					
Near/Far Lane Distance:	48 feet			Veh	icleType)	Day	Evening	Night	Daily
Site Data						Autos:	64.0%	16.8%	19.29	6 97.51%
Barrier Height:	0.0 feet			М	edium T	rucks:	77.1%	6.4%	16.5%	6 1.78%
Barrier Type (0-Wall, 1-Berm):	0.0				Heavy T	rucks:	54.0%	3.0%	43.09	6 0.72%
Centerline Dist. to Barrier:	52.0 feet			Noise S	ource E	levatio	ns (in fe	eet)		
Centerline Dist. to Observer:	52.0 feet				Auto	s: (0.000			
Barrier Distance to Observer:	0.0 feet			Mediu	m Truck	s: 2	.297			
Observer Height (Above Pad):	5.0 feet			Hear	vy Truck		3.004	Grade Ao	justmer	nt: 0.0
Pad Elevation:	0.0 feet									
Road Elevation:	0.0 feet			Lane Eq				feet)		
Road Grade:	0.0%				Auto		6.400			
Left View:	-90.0 degre				m Truck		3.209			
Right View:	90.0 degre	es		Hear	vy Truck	s: 46	5.228			
FHWA Noise Model Calculation										
VehicleType REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		erm Atten
Autos: 68.4			0.		-1.20		-4.66		000	0.000
Medium Trucks: 79.4			0.	11	-1.20		-4.87	0.	000	0.000
Heavy Trucks: 84.2	5 -22.74		0.	1 1	-1.20		-5.41	0.	000	0.000
Unmitigated Noise Levels (with										
VehicleType Leq Peak Ho	, ,		Leq E	vening		Night		Ldn		ONEL
	6.2	65.2		65.4		61		68.	5	69.0
	9.9	59.6		54.8		54		61.		61.9
	8.0	58.9 67.0		52.4 66.0		59 63		65. 70.		65.5 71.2
Centerline Distance to Noise C				00.0		- 55		70.		11.2
Committee Distance to Noise C	omour (in feet	,	70	dBA	65	dBA	1 6	0 dBA	5.	5 dBA
		Ldn:		59		12	7	273	3	588
	С	NEL:		62		13	4	289	9	622

	FHWA-RI	0-77-108 H I GH	WAY NO	SE PRED	ICTION MO	DDEL (9	/12/20)21)		
Scenari Road Nam Road Segmer	e: Highland A				Project i Job Nu	Vame: F Imber: 1		210		
SITE S	SPECIFIC IN	IPUT DATA			N	OISE M	IODE	L INPUT	S	
Highway Data				Site Co	nditions (
Average Daily	Traffic (Adt): Percentage:	21,143 vehicle 6,82%	s		fedium Tru		lutos:	15 15		
	our Volume:	1,442 vehicles			leavy Truc		,	15		
	nicle Speed:	45 mph				10 10 71	,,,,,,,,			
Near/Far I ar		48 feet		Vehicle						
	io Diotarios.	10 1001		Ve	hicleType		Day	Evening	Night	
Site Data							64.0%		19.2	
Bar	rier Height:	0.0 feet		'	Medium Tro		77.1%		16.5	
Barrier Type (0-W	all, 1-Berm):	0.0			Heavy Tro	ıcks:	54.0%	3.0%	43.0	% 0.72
Centerline Dis	t. to Barrier:	52.0 feet		Noise S	Source Ele	vations	(in fe	et)		
Centerline Dist.	to Observer:	52.0 feet			Autos		•			
Barrier Distance	to Observer:	0.0 feet		Medi	um Trucks					
Observer Height (Above Pad):	5.0 feet			avy Trucks			Grade Ad	iustmei	nt: 0.0
Pa	d Elevation:	0.0 feet								
Roa	d Elevation:	0.0 feet		Lane E	quivalent			eet)		
F	Road Grade:	0.0%			Autos					
	Left View:	-90.0 degree			um Trucks					
	Right View:	90.0 degree	S	Hea	avy Trucks	46.2	228			
FHWA Noise Mode	l Calculation	s								
VehicleType	REMEL	Traffic Flow	Distant		e Road	Fresne		Barrier Att		erm Atten
Autos:	68.46	-0.36		0.38	-1.20		4.66	0.0	000	0.00
Medium Trucks:	79.45	-17.74		0.41	-1.20		4.87		000	0.00
Heavy Trucks:	84.25	-21.70		0.41	-1.20		5.41	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	barrier at	tenuation)					
VehicleType	Leq Peak Hοι	ır Leq Day	Le	q Evening	Leq N	light		Ldn	- (CNEL
Autos:	67	.3	66.2	66.	4	62.2		69.5	5	70.
Medium Trucks:	60	.9	30.7	55.	9	55.2		62.7		63
Heavy Trucks:	61	.8	59.9	53.	4	60.2		66.5	5	66
Vehicle Noise:	69	.1	0.86	67.	0	64.9		71.8	3	72.
Centerline Distanc	e to Noise Co	ontour (in feet)		70 -ID4		10.4		O -ID 4		E -10 A
				70 dBA 69	65 a		6	0 dBA		5 dBA
			Ldn: IEL:	73		148 157		320 338		689 729
		Cr	VEL.	73	•	15/		338		729

Scenari	-: E.D					Desired		Pepper	- 240		
	o: E+P e: High l and Av					,	ivarrie: lumber:		210		
	e: nightand Av nt: e/o Pepper /					JODIN	uniber.	14324			
							10105	MODE	LINDIG		
Highway Data	SPECIFIC IN	PUIDAIA		5	ite Con	ditions			L NPUT ft = 15)	3	
Average Daily	Traffic (Adt):	16.965 vehic l e	s					Autos:	15		
,	Percentage:	6.82%			Me	dium Tr	ucks (2		15		
		1.157 vehicles				avy Tru			15		
	hicle Speed:	45 mph									
Near/Far Lar	ne Distance:	48 feet		١,	/ehicle	icleType		Day	Evening	Night	Daily
Site Data				\dashv	VCII		Autos:	64.0%		19.2%	,
		221			М	edium T		77.1%		16.5%	
Barrier Type (0-W	rier Height:	0.0 feet 0.0				Heavy T		54.0%		43.0%	
Centerline Dis		52.0 feet		L							
Centerline Dist. 1		52.0 feet		٨	loise S	ource E			eet)		
Barrier Distance t		0.0 feet				Auto		.000			
Observer Height (5.0 feet				m Truck		.297			
	d Elevation:	0.0 feet			Hear	ry Truck	s: 8	.004	Grade Ad	justment.	: 0.0
	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	nce (in i	eet)		
F	Road Grade:	0.0%				Auto	s: 46	3.400			
	Left View:	-90.0 degree	s		Mediu	m Truck	s: 46	5.209			
	Right View:	90.0 degree	s		Hear	vy Truck	s: 46	3.228			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	68.46	-1.31		0.38	3	-1.20		-4.66		000	0.00
Medium Trucks:	79.45	-18.78		0.41	l	-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-22.74		0.41		-1.20		-5.41	0.0	000	0.00
Unmitigated Noise											
	Leg Peak Hour			Leg Ev			Night		Ldn		NEL
Autos:	66.		35.3		65.5		61		68.0		69.
Medium Trucks:	59.		59.6		54.8		54		61.		61.
Heavy Trucks: Vehicle Noise:	60. 68.		58.9 57.0		52.4 66.0		59		65.8 70.8		65. 71.
			or.U		00.0		63	.5	/0.8)	71.
	e to Noise Co	ntour (in feet)				0.0	/D.4	1 /	i0 dBA		10.4
Centernine Distanc				70 a							
centernne Distanc			Ldn:	70 a	BA 59	65	dBA 12		и ава 275		dBA 592

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 H i GH	WAY	' NOISE	PREDIC	TION M	ODEL	(9/12/2	021)		
Road Nam	io: OYC+P ie: Highland A nt: e/o Pepper					Project Job N		Peppe 14324			
	SPECIFIC IN	NPUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard	= 10, S	oft = 15)		
	Traffic (Adt): Percentage: lour Volume:	21,455 vehicle 6.82% 1,463 vehicle				dium Tru avy Truc		,	15		
	hicle Speed:	45 mph			Vehicle I	Vix					
Near/Far La	ne Distance:	48 feet		F	Veh	icleType		Dav	Evening	Night	Daily
Site Data							Autos:	64.09	-	19.29	
Rai	rrier Height:	0.0 feet			М	edium Ti	rucks:	77.19	6.4%	16.5%	6 1.75%
Barrier Type (0-W	all, 1-Berm):	0.0			1	Heavy Ti	rucks:	54.0%	6 3.0%	43.09	% 0.70%
Centerline Di		52.0 feet			Noise So	ource El	evatio	ns (in f	eet)		
Centerline Dist.		52.0 feet				Auto	s: (0.000			
Barrier Distance		0.0 feet			Mediu	m Truck:	s: 2	2.297			
Observer Height (5.0 feet			Heav	y Truck	s: 8	3.004	Grade Ad	iustmer	it: 0.0
	ad Elevation:	0.0 feet						-			
	ad Elevation:	0.0 feet		<u> </u>	Lane Eq				feet)		
	Road Grade:	0.0%				Auto		6.400			
	Left View:	-90.0 degre				m Truck:		6.209			
	Right View:	90.0 degre	es		Heav	y Truck:	s: 46	6.228			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance		Road	Fres		Barrier Att		erm Atten
Autos:	68.46	-0.29		0.3	8	-1.20		-4.66	0.0	000	0.000
Medium Trucks:	79.45	-17.74		0.4	1	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	84.25			0.4		-1.20		-5.41	0.0	000	0.000
Unmitigated Noise				ier atten	uation)						
VehicleType	Leq Peak Hot			Leq E	vening		Night		Ldn		CNEL
Autos:		7.4	66.3		66.5		62		69.6		70.1
Medium Trucks:		0.9	60.7		55.9		55		62.		63.0
Heavy Trucks:		1.8	59.9		53.4		60		66.		66.5
Vehicle Noise:	-	9.1	68.1		67.0		64	.9	71.9	•	72.2
Centerline Distant	e to Noise C	ontour (in feet)						-		
			1	70	dBA	65	dBA		60 dBA		5 dBA
			Ldn:		69		14		322		693
		С	NEL:		73		15	8	341		734

	FHWA-R	D-77-108 HIGH	IWAY	NOISE	PREDIC	CTION IN	IODEL	(9/12/2	021)		
Road Na	nrio: HY me: Highland A ent: e/o Pepper						t Name: lumber:	Peppe 14324	r 210		
SITE Highway Data	SPECIFIC II	NPUT DATA			Site Con				L INPUT	S	
	/ Traffic (Adt):	23,258 vehic			Site Con	uitions	(riaru -	Autos:	15		
	r Percentage:	6.82%	62		Me	dium Tr	ucks (2		15		
	Hour Volume:	1.586 vehicle	s			avy Tru			15		
	ehicle Speed:	45 mph	-	-							
	ane Distance:	48 feet		-	Vehicle	icleType		Day	Evening	Night	Daily
Site Data					VCII		Autos:	64.0%		19.2%	,
		0.0 feet			м	edium T		77.1%		16.5%	
Barrier Type (0-l	arrier Height: Nall, 1-Berm):	0.0 reet 0.0				Heavy T		54.0%		43.0%	
Centerline E	ist. to Barrier:	52.0 feet		-	Noise S	ource F	levatio	ns (in fe	et)		
Centerline Dist	to Observer:	52.0 feet		f	Autos: 0,000						
Barrier Distance	e to Observer:	0.0 feet			Mediu	m Truck		.297			
	Observer Height (Above Pad): 5.0 feet					vy Truck	s: 8	3.004	Grade Ao	justmen	t: 0.0
	Pad Elevation:	0.0 feet		-	Lane Eq			//	P 41		
R	oad Elevation:	0.0 feet		ŀ	Lane ⊑q				reet)		
	Road Grade:	0.0%			A decidio	Auto m Truck		5.400 5.209			
	Left View:	-90.0 degre 90.0 degre				m muck vy Truck		5.228			
	Right View:		es		пва	ry Truck	.5. 40	.220			
FHWA Noise Mod					1						
VehicleType	REMEL	Traffic Flow		stance 0.3		Road	Fres	-4.66	Barrier Att		rm Atten
Autos Medium Trucks				0.4		-1.20 -1.20		-4.87		000	0.000
Heavy Trucks				0.4		-1.20		-5.41		000	0.000
Unmitigated Nois						-1.20		-3.47	0.	300	0.000
VehicleType	Leg Peak Ho		_		vening	Lea	Night		Ldn	-	NEL
Autos		7.7	66.6		66.8		62	.7	69.	9	70.5
Medium Trucks	: 6	1.3	61.1		56.3		55	.6	63.	1	63.4
Heavy Trucks	:62	2.2	60.4		53.8		60	.6	66.	9	67.0
Vehicle Noise	: 69	9.5	68.4		67.4		65	.3	72.	2	72.6
Centerline Distar	nce to Noise C	ontour (in feet)								
			L	70	dBA	65	dBA		60 dBA		5 dBA
		_	Ldn:		73		15		341		734
		С	NEL:		78		16	7	361		777

	FHWA-R	D-77-108 H i GH	WAY N	OISE	PREDIC	CTION N	ODEL (9/	12/20	21)		
	io: E le: High l and A nt: e/o State S						t Name: Pe lumber: 14		210		
	SPECIFIC II	NPUT DATA					NOISE M	ODE	L INPUTS		
Highway Data				S	ite Con	ditions	(Hard = 1	0, So	ft = 15)		
	Traffic (Adt): Percentage: lour Volume:	15,363 vehicle 6.82% 1,048 vehicle					Aı rucks (2 Ax rcks (3+ Ax	,	15 15 15		
Ve	hicle Speed:	45 mph		1/	ehicle i	Miss					
Near/Far La	ne Distance:	48 feet		-		icleTvp	a D	av	Evening	Night	Dailv
Site Data					* 077	- ,,		4.0%	16.8%	19.2%	97.51%
Ra	rrier Height:	0.0 feet			М	edium 1	rucks: 7	7.1%	6.4%	16.5%	1.78%
Barrier Type (0-W		0.0			,	Heavy 7	rucks: 5	4.0%	3.0%	43.0%	0.72%
Centerline Di		52.0 feet		Ν	loise So	ource E	levations	(in fe	et)		
Centerline Dist. to Observer: 52.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0%					Heav	Auto m Truck vy Truck uivalen Auto	s: 2.29 s: 8.00 t Distance)7)4 (in f	Grade Adju eet)	stment:	0.0
	Left View: Right View:	-90.0 degree 90.0 degree				m Truck vy Truck					
FHWA Noise Mode	el Calculation REMEL	Traffic Flow	Dista		F1-14-	Road	Fresne		D 1 444 -	- 0	44
VehicleType Autos:	68.46		Dista	0.38		-1.20		1.66	Barrier Atte 0.00		n Atten 0.000
Medium Trucks:	79.45			0.41		-1.20		1.87	0.00		0.000
Heavy Trucks:	84.25			0.41		-1.20		5.41	0.00		0.000
Unmitigated Noise	Levels (with	out Topo and	barrier	attenu	ıation)						
VehicleType	Leq Peak Ho	ur Leq Day	′ L	.eq Ev	ening	Leq	Night		Ldn	CN	IEL
Autos:	65	5.9	64.8		65.0		60.9		68.1		68.7
Medium Trucks:	59	9.5	59.3		54.5		53.8		61.3		61.6
Heavy Trucks:	60	0.4	58.6		52.0	ı	58.8		65.1		65.2
Vehicle Noise:	67	7.7	66.6		65.6		63.5		70.4		70.8
Centerline Distant	ce to Noise C	ontour (in feet,)								
			L	70 di		65	dBA	6	0 dBA	55	dBA
			Ldn:		56		120		259		557
		C	NEL:		59		127		274		589

	FHWA-RD-	-77-108 HIGH\	1 YAN	NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
	rio: HY+P						Name:		r 210		
	ne: Highland Av.					Job N	lumber:	14324			
	nt: e/o Pepper A										
	SPECIFIC IN	PUT DATA			0'4 - 0				L INPUT	S	
Highway Data				-	Site Con	aitions	(Hara =				
Average Daily	, ,	23,570 vehic l e	s					Autos:			
	Percentage:	6.82%				dium Tr					
		1,607 vehic l es			He	avy Tru	cks (3+	Axles):	15		
	hicle Speed:	45 mph			Vehicle I	Mix					
Near/Far La	ne Distance:	48 feet		ħ	Veh	icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	64.0%	16.8%	19.2%	97.54%
Ba	rrier Height:	0.0 feet			М	edium T	rucks:	77.1%	6.4%	16.5%	1.76%
Barrier Type (0-V		0.0				Heavy T	rucks:	54.0%	3.0%	43.0%	0.71%
Centerline Di	ist. to Barrier:	52.0 feet		- 1	Noise S	ource E	lovation	e (in f	not)		
Centerline Dist.	to Observer:	52.0 feet		ť	110/36 01	Auto		.000	301)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck		.297			
Observer Height	(Above Pad):	5.0 feet				ry Truck		.004	Grade Ad	iustment	. 0.0
P	ad Elevation:	0.0 feet		L	11641	ry Truch	3, 0	.004	Orado rio	Judennone	. 0.0
Ro	ad Elevation:	0.0 feet		<u> </u>	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto		.400			
	Left View:	-90.0 degree				m Truck		.209			
	Right View:	90.0 degree	S		Hear	vy Truck	s: 46	.228			
FHWA Noise Mod											
VehicleType		Traffic Flow	Dist	ance		Road	Fres		Barrier Att		m Atten
Autos:		0.12		0.3		-1.20		-4.66		000	0.00
Medium Trucks:		-17.33		0.4		-1.20		-4.87		000	0.00
Heavy Trucks:		-21.29		0.4		-1.20		-5.41	0.0	000	0.00
Unmitigated Nois											
VehicleType Autos:	Leg Peak Hour			Leq E	vening		Night		Ldn		NEL
Medium Trucks:			66.7 61.1		66.9 56.3		62. 55.		70.0 63.1		70. 63.
Heavy Trucks:			30.4		53.8		60.		66.9		67.
Vehicle Noise:			88.5		67.5		65.		72.		72.
Centerline Distan	ce to Noise Cor	ntour (in feet)									
				70	dBA	65	dBA	- 6	60 dBA	55	dBA
			dn:		74		159	•	343		738
		CA	IEL:		78		168		363		781

Wednesday, January 24, 2024

	FHWA-R	D-77-108 HIGH	WAY NO	DISE	PREDIC	CTION M	ODEL	(9/12/2	021)				
Road Nar	Scenario: E+P Road Name: Highland Av. Road Segment: e/o State St.					Project Name: Pepper 210 Job Number: 14324							
	SPECIFIC II	IPUT DATA							L INPUT	s			
Highway Data				S	ite Con	ditions	(Hard	= 10, S	oft = 15)				
	Traffic (Adt): r Percentage: Hour Volume:	15,550 vehicles 6.82% 1,061 vehicles			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15								
V	ehicle Speed:	45 mph		ν	ehicle	Mix							
Near/Far La	ane Distance:	48 feet				icleType		Day	Evening	Night	Daily		
Site Data							lutos:	64.0%	-	19.2	_		
R	rrier Height:	0.0 feet			М	ledium Tr	ucks:	77.1%	6.4%	16.59	% 1.76%		
Barrier Type (0-V	Vall, 1-Berm):	0.0				Heavy Tr	ucks:	54.0%	3.0%	43.0	% 0.71%		
	ist. to Barrier:	52.0 feet		٨	Noise Source Elevations (in feet)								
Centerline Dist.	52.0 feet				Autos	s: (0.000						
Barrier Distance	0.0 feet			Medium Trucks: 2.297									
Observer Height	(Above Pad): Pad Elevation:	5.0 feet 0.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet				L	Lane Equivalent Distance (in feet)								
	Road Grade:					Autos	s: 41	6,400	-				
	Left View:	-90.0 degrees			Medium Trucks: 46,209								
	Right View:	90.0 degree			Hear	vy Trucks	s: 40	6.228					
FHWA Noise Mod	lel Calculation	s											
VehicleType	REMEL	Traffic Flow	Distar	псе	Finite	Road	Fres	snel	Barrier Att	en Be	erm Atten		
Autos.	68.46	-1.69		0.38		-1.20		-4.66	0.0	000	0.000		
Medium Trucks	79.45	-19.13		0.41		-1.20		-4.87	0.0	000	0.000		
Heavy Trucks.	84.25	-23.09		0.41		-1.20		-5.41	0.0	000	0.000		
Unmitigated Nois	e Levels (with	out Topo and	barrier a	ttenu	ıation)								
VehicleType	Leq Peak Ho	ır Leq Day	L	eq Ev	ening	Leq	Night		Ldn	(CNEL		
Autos.	: 66	3.0	64.9		65.1		60	.9	68.	2	68.7		
Medium Trucks	59	9.5	59.3		54.5		53	8.	61.	3	61.6		
Heavy Trucks.	60).4	58.6		52.0	l	58	.8	65.	1	65.2		
Vehicle Noise	67	7.7	66.7		65.6		63	.5	70.	5	70.8		
Centerline Distan	ce to Noise C	ontour (in feet)											
				70 d	BA	65 (dΒA	-	60 dBA	5	5 dBA		
			Ldn:		56		12		260)	560		
		CI	VEL:		59		12	18	275	i	592		

	FHWA-R	D-77-108 HIGH	WAY N	IOISE	PREDIC	TION N	IODEL (9/12/2	021)			
Road Nan	io: OYC ne: High l and A nt: e/o State S						Name: lumber:		r 210			
	SPECIFIC II	NPUT DATA			NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15)							
Highway Data					Site Con	ditions						
Average Daily		19,641 vehicle	es					Autos:				
	Percentage:	6.82%					ucks (2 i					
	lour Volume:	1,340 vehicle	Б		He	avy Iru	cks (3+ /	4xles):	15			
	hicle Speed:	45 mph		1	Vehicle I	Vlix						
Near/Far La	ne Distance:	48 feet			Veh	icleType)	Day	Evening	Nigh	t L	Daily
Site Data							Autos:	64.0%	16.8%	19.2	% 97	7.51%
Ba	rrier Heiaht:	0.0 feet			M	edium T	rucks:	77.1%	6.4%	16.5	5% 1	1.78%
Barrier Type (0-W	•	0.0			· · · · · · · · · · · · · · · · · · ·	leavy T	rucks:	54.0%	3.0%	43.0)% (.72%
Centerline Di	. ,	52.0 feet			Noise So		laveatian	a lin E	0.041			
Centerline Dist.	to Observer:	52.0 feet		Ľ	voise sc				eet)			
Barrier Distance	to Observer:	0.0 feet			A decadio	Auto m Truck		000 297				
Observer Height	(Above Pad):	5.0 feet						297 004	Grade A	divotes	net: O	0
P	ad Elevation:	0.0 feet			neav	ry Truck	8: 6.	004	Grade At	njustrie	nn. 0.	J
Ro	ad Elevation:	0.0 feet		[Lane Eq	uivalen	t Distan	ce (in	feet)			
	Road Grade:	0.0%				Auto	s: 46.	400				
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 46.	209				
	Right View:	90.0 degre	es		Heav	y Truck	s: 46.	228				
FHWA Noise Mod	el Calculation	ıs										
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite	Road	Fresr	nel	Barrier At	ten E	Berm A	ltten
Autos:	68.46			0.3	8	-1.20		-4.66		.000		0.000
Medium Trucks:	79.45	-18.06		0.4	1	-1.20		-4.87	0.	.000		0.000
Heavy Trucks:	84.25	-22.02		0.4	1	-1.20		-5.41	0.	.000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barrier	atten	uation)							
VehicleType	Leg Peak Ho	ur Leq Day	′ L	Leq E	vening	Leq	Night		Ldn		CNEL	
Autos:	67	7.0	65.9		66.1		61.9	9	69.	.2		69.7
Medium Trucks:	60	0.6	60.3		55.6		54.9	9	62.	.4		62.6
Heavy Trucks:			59.6		53.1		59.9		66.			66.2
Vehicle Noise:	68	3.8	67.7		66.7		64.	5	71.	.5		71.9
Centerline Distant	ce to Noise C	ontour (in feet)									
				70 c		65	dBA		60 dBA		55 dB,	
			Ldn:		66		141		30			656
		C	NEL:		69		150		32:	2		694

	FHWA-R	D-77-108 HIG	I YAWH	NOISE F	PREDIC	TION	MODEL (9	/12/2	021)		
Scenari Road Nam Road Segmer	e: Highland A						t Name: F Number: 1		r 210		
SITE	SPECIFIC II	NPUT DATA					NOISE N	IODE	L INPUTS	3	
Highway Data				S	ite Cor	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily Peak Hour Peak H	e: 6.82% e: 1,473 vehicles			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15							
Near/Far Lar	hicle Speed:	45 mph 48 feet		V	ehicle .						
Near/Far Lar	ie Distance.	40 1661			Veh	icleTyp		Day	Evening	Night	Daily
Site Data								64.0%		19.2%	
Bar	rier Height:	0.0 feet				edium 1		77.1%		16.5%	
Barrier Type (0-W	all, 1-Berm):	0.0				Heavy :	Trucks:	54.0%	3.0%	43.0%	0.72%
Centerline Dis	t. to Barrier:	52.0 feet		N	oise Si	ource F	levations	(in fe	oet)		
Centerline Dist. i Barrier Distance i Observer Height (, Pa Roa F	52.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet 0.0% -90.0 degrees 90.0 degrees		L	Autos: 0,000 Medium Trucks: 2,297 Heavy Trucks: 8,004 Grade Adjustment: 0.0 Lane Equivalent Distance (in feet) Autos: 46,400 Medium Trucks: 46,209 Heavy Trucks: 46,228							
FHWA Noise Mode	l Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	e/	Barrier Atte	en Be	rm Atten
Autos:	68.46			0.38		-1.20		-4.66	0.0		0.000
Medium Trucks:	79.45			0.41		-1.20		-4.87	0.0		0.000
Heavy Trucks:	84.25	-21.61		0.41		-1.20		-5.41	0.0	00	0.000
Unmitigated Noise	Levels (with	out Topo and	barrie	r attenu	ation)						
VehicleType	Leq Peak Ho	ur Leq Da	У	Leq Eve	ening	Leq	Night		Ldn	C	NEL
Autos:		7.4	66.3		66.5		62.3		69.6		70.1
Medium Trucks:		1.0	60.8		56.0		55.3		62.8		63.1
Heavy Trucks:		1.8	60.0		53.5		60.3		66.6		66.6
Vehicle Noise:	69	9.2	68.1		67.1		64.9		71.9	1	72.3
Centerline Distanc	e to Noise C	ontour (in fee	t)								
			L	70 dl		65	dBA	6	60 dBA	55	5 dBA
			Ldn:		70		151		324		699
		C	NEL:		74		159		343		740

								(9/12/2					
	o: OYC+P				Project Name: Pepper 210								
	e: Highland Av				Job Number: 14324								
Road Segmer	nt: e/o State St												
	SPECIFIC IN	PUT DATA							L INPUT	S			
Highway Data				S	ite Cor	ditions	(Hard	= 10, S	oft = 15)				
Average Daily	Traffic (Adt):	19,828 vehic i	es					Autos:	15				
Peak Hour	Percentage:	6.82%			Ме	edium Tr	ucks (2	Axles).	15				
Peak H	our Volume:	1,352 vehic l e	S		He	eavy Tru	cks (3+	Axles).	15				
Vehicle Speed: 45 mph					ehicle	Mix							
Near/Far Lai	ne Distance:	48 feet		Ė		icleType	9	Day	Evening	Night	Daily		
Site Data							Autos:	64.0%	16.8%	19.2%	97.53		
Rai	rier Height:	0.0 feet			M	ledium 1	rucks:	77.1%	6.4%	16.5%	1.76		
Barrier Type (0-W	•	0.0				Heavy 7	rucks:	54.0%	3.0%	43.0%	0.71		
Centerline Dis	st. to Barrier:	52.0 feet		N	Noise Source Elevations (in feet)								
Centerline Dist.	to Observer:	52.0 feet				Auto		0.000	,				
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck		2.297					
Observer Height (Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	iustmen	r- 0 0		
Pa	d Elevation:	0.0 feet								,			
Ros	d Elevation:	0.0 feet		L	Lane Equivalent Distance (in feet)								
F	Road Grade:	0.0%				Auto		3.400					
	Left View:	-90.0 degre	es			m Truck		6.209					
	Right View:	90.0 degree	es		Hea	vy Truck	s: 4	5.228					
FHWA Noise Mode													
VehicleType	REMEL	Traffic Flow	Dist	ance		Road	Fres		Barrier Att	_	rm Atter		
Autos:	68.46	-0.64		0.38		-1.20		-4.66		000	0.00		
Medium Trucks:	79.45	-18.06		0.41		-1.20		-4.87		000	0.00		
Heavy Trucks:	84.25	-22.02		0.41		-1.20		-5.41	0.0	000	0.00		
Unmitigated Noise							Allestat		Ldn		NEL		
VehicleType Autos:	Leq Peak Hou 67		65.9	Leq Ev	66.1		Night 62	10	69.		NEL 69		
Medium Trucks:	60	-	60.3		55.6		54		62.		62		
Heavy Trucks:	61	-	59.6		53.1		59		66.		66		
Vehicle Noise:	68		67.7		66.7		64		71.		71		
Centerline Distanc	e to Noise Co	ntour (in feet)										
				70 di	BA	65	dBA	-	60 dBA	55	dBA		
			Ldn:		66		14	.2	306	:	65		
			Lun.		00		177	-	000	,	- 00		

Wednesday, January 24, 2024

	FHWA-RI	D-77-108 HIGHW	AY NOIS	E PREDIC	CTION M	DDEL (9/12	2/2021)	
Road Na.	ario: HY+P me: High l and A ent: e/o State S					Vame: Pep Imber: 143		
SITE	SPECIFIC IN	IPUT DATA			N	OISE MO	DEL INPUTS	3
Highway Data				Site Con	ditions (Hard = 10,	Soft = 15)	
Average Dail	Traffic (Adt):	21,792 vehicles				Auto	os: 15	
Peak Hou	r Percentage:	6.82%		Ме	dium Tru	cks (2 Axle	s): 15	
Peak	Hour Volume:	1,486 vehicles		He	avy Truc	ks (3+ Axle	s): 15	
ν	ehicle Speed:	45 mph		Vehicle	Miv			
Near/Far L	ane Distance:	48 feet			icleType	Da	/ Evening	Night Daily
Site Data						utos: 64.		19.2% 97.53%
	arrier Height:	0.0 feet		М	edium Tr		1% 6.4%	16.5% 1.76%
Barrier Type (0-		0.0			Heavy Tr	ıcks: 54.	0% 3.0%	43.0% 0.71%
,, ,	Dist. to Barrier:	52.0 feet						
Centerline Dis	t, to Observer:	52.0 feet		Noise S		vations (ii	i reet)	
Barrier Distance	e to Observer:	0.0 feet			Autos			
Observer Height	(Above Pad):	5.0 feet			m Trucks		Crada Adi	ustment: 0.0
,	Pad Elevation:	0.0 feet		Hear	vy Trucks	8.004	Grade Adj	usurieni. 0.0
R	oad Elevation:	0.0 feet		Lane Eq	uivalent	Distance (in feet)	
	Road Grade:	0.0%			Autos	46.400		
	Left View:	-90.0 degrees		Mediu	m Trucks	46.209		
	Right View:	90.0 degrees		Hear	vy Trucks	46.228		
FHWA Noise Mod	del Calculation	s						
VehicleType	REMEL	Traffic Flow	Distance		Road	Fresnel	Barrier Atte	
Autos			0.		-1.20	-4.0		
Medium Trucks			0.	41	-1.20	-4.8		
Heavy Trucks	: 84.25	-21.61	0.	41	-1.20	-5.4	11 0.0	0.000
Unmitigated Nois								
VehicleType	Leq Peak Hou			Evening	Leq N	-	Ldn	CNEL
Autos			6.4	66.6		62.4	69.6	
Medium Trucks			8.0	56.0		55.3	62.8	
Heavy Trucks			0.0	53.5		60.3	66.6	
Vehicle Noise	: 69	9.2 6	8.1	67.1		65.0	72.0	72.3
Centerline Distar	nce to Noise Co	ontour (in feet)						
				dBA	65 a		60 dBA	55 dBA
			dn:	70		151	326	702
		CNI	EL:	74		160	345	742

APPENDIX 9.1:

OPERATIONAL NOISE CALCULATIONS





14324 - Pepper 210

CadnaA Noise Prediction Model: 14324-02.cna

Date: 25.01.24 Analyst: B. Lawson

Calculation Configuration

Configurat	tion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	3048.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	365.76
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	1
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Val	ue		Land	Use	Height		Co	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Υ	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	51.4	51.4	58.0	57.8	52.7	0.0				5.00	r	6223818.04	2360027.16	1411.49
RECEIVERS		R2	48.8	48.8	55.5	58.4	51.9	0.0				5.00	r	6223612.13	2360666.53	1384.68
RECEIVERS		R3	29.7	29.6	36.3	59.9	59.3	0.0				5.00	r	6230332.33	2359504.19	1299.25
RECEIVERS		R4	45.1	45.1	51.8	69.6	66.9	0.0				5.00	r	6225001.22	2358523.59	1370.59
RECEIVERS		R5	43.9	43.9	50.6	58.6	54.7	0.0				5.00	r	6224083.55	2358688.48	1398.20
RECEIVERS		R6	47.2	47.2	53.9	58.9	53.4	0.0				5.00	r	6223867.90	2359521.90	1410.82

Point Source(s)

Name	М.	ID	R	esult. PW	/L		Lw / L	i	Оре	erating Ti	me	Height	t	Co	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			Х	Υ	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6226805.38	2359389.05	1421.55
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6226746.93	2359421.71	1421.55
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6226530.33	2359034.93	1421.55
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6226477.04	2359079.62	1421.55
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	r	6226822.57	2359617.68	1346.11
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	r	6226188.28	2359023.67	1312.97

Line Source(s)

I	Name	M.	ID	R	esult. PW	'L	R	esult. PW	'L'		Lw/L	i	Op	erating Ti	me		Moving	Pt. Src		Heigh	ıt
I				Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed		
I				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	Г
I	LINESOURCE		TRUCK01	93.2	93.2	93.2	69.9	69.9	69.9	Lw	93.2									8	r
ı	LINESOURCE		TRUCK02	93.2	93.2	93.2	64.6	64.6	64.6	Lw	93.2									8	r

Name	M.	ID	R	esult. PW	'L	R	esult. PW	L'		Lw/L	i	Ор	erating Ti	me		Moving	Pt. Src		Heigh	ht
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE		TRUCK03	93.2	93.2	93.2	70.0	70.0	70.0	Lw	93.2									8	r
LINESOURCE		TRUCK04	93.2	93.2	93.2	71.8	71.8	71.8	Lw	93.2									8	r
LINESOURCE		TRUCK05	93.2	93.2	93.2	65.9	65.9	65.9	Lw	93.2									8	r
LINESOURCE		TRUCK06	93.2	93.2	93.2	62.4	62.4	62.4	Lw	93.2									8	r
LINESOURCE		TRUCK07	93.2	93.2	93.2	62.7	62.7	62.7	Lw	93.2									8	r
LINESOURCE		TRUCK08	93.2	93.2	93.2	67.0	67.0	67.0	Lw	93.2									8	r
LINESOURCE		TRUCK09	93.2	93.2	93.2	69.0	69.0	69.0	Lw	93.2									8	r
LINESOURCE		TRUCK10	93.2	93.2	93.2	67.9	67.9	67.9	Lw	93.2									8	r
LINESOURCE		TRUCK11	93.2	93.2	93.2	69.6	69.6	69.6	Lw	93.2									8	r
LINESOURCE		TRUCK12	93.2	93.2	93.2	69.6	69.6	69.6	Lw	93.2									8	r
LINESOURCE		TRUCK13	93.2	93.2	93.2	72.8	72.8	72.8	Lw	93.2									8	r

Name	LINESOURCE	TRUC	K13 9	3.2	93.2	93.2	72.8	72.8	72.	.8 Lw	93.2	
	Name	ID		Hei	ght	I		Coord	dinate			\neg
TRUCKO	Italiic	10	Begi		i e		х				Grou	und
LINESOURCE TRUCKOZ S.O.				Τ						(ft)	_	
LINESOURCE TRUCKOZ S.00 F	LINESOURCE	TRUCK01	8.00	r		6227	7150.73	235946	3.88	1329.00	1321	1.00
LINESOURCE TRUCKOZ R.O.						6226	801.77	235889	7.27	1321.15	1313	3.15
March						6226	800.46	235886	5.39	1320.41	1312	2.41
March	LINESOURCE	TRUCK02	8.00) r		6226	801.77	235889	7.27	1321.15	1313	3.15
March						_			_		+	_
March				+		+			_		+	_
LINESOURCE TRUCKO3 R.O.				+		_			_			_
LINESOURCE TRUCKO3 8.00 r 6 224723.65 2359983.20 1370.92 1362.92 LINESOURCE TRUCKO3 8.00 r 6 2225200.21 2359461.07 1338.87 1330.87 133				+					-		+	_
LINESOURCE TRUCKO3 8.00 r				+		_			-			_
LINESOURCE TRUCK04 8.00 r 6 622453.0.9 2359687.37 3157.50 3149.50 LINESOURCE TRUCK05 8.00 r 6 6224530.94 2359642.84 3139.91 3131.91 LINESOURCE TRUCK05 8.00 r 6 6224530.94 2359642.84 3139.91 3131.91 LINESOURCE TRUCK05 8.00 r 6 6224086.93 2350243.51 3153.07 3155.73 CENTRAL STAN STAN STAN STAN STAN STAN STAN STAN	LINESOLIDOE	TDLICKUS	9 00	1		_			_		+	
LINESOURCE TRUCKO4 R.00 F	LINESCORCE	TROCKOS	8.00	+		_			_		+	
LINESOURCE TRUCKOS 8.00 r 6224908.54 2359442.84 339.91 331.91	LINESOURCE	TRUCK04	8.00) r		_			-		_	_
LINESOURCE TRUCKOS 8.00 T		THE SHET	0.0	Ť		_			_			_
	LINESOURCE	TRUCK05	8.00	r		+			-		_	-
				T		6224	1232.76	235988	4.25	1356.68	3 1348	3.68
						6224	1086.93	236023	4.51	1363.97	1355	5.97
				I		6224	1085.43	236026	3.97	1365.33	1357	7.33
				I		6224	1086.09	236029	3.46	1364.87	1356	5.87
						6224	1088.91	236032	2.82	1363.71	1355	5.71
						6224	1093.87	236035	1.90	1363.00	1355	5.00
				1		6224	100.95		-	1363.26	1355	5.26
						_					+	_
				\perp		_			_		+	_
Company				+		_			-		+	_
LINESOURCE TRUCKO6 8.00 r 6224576.51 2361136.85 1362.45 1354.45 LINESOURCE TRUCKO6 8.00 r 6224576.51 2361136.85 1362.45 1354.45 6226956.72 235960.39 1341.65 1333.65 6227150.73 2359468.88 1329.00 1321.00 62277697.61 2359121.22 1332.68 1324.68 622776.67 2359108.11 1332.26 1324.26 6227750.21 2359076.31 1312.40 1303.40 622776.43 2359076.31 1311.40 1303.40 6227764.32 2359076.31 1311.40 1303.40 6227776.44 2359038.25 1310.00 1302.00 6227776.44 2359038.25 1310.00 1302.00 6227794.21 235895.58 1310.00 1302.00 6227794.21 235895.58 1310.00 1302.00 6227794.21 235895.51 1310.00 1302.00 6227794.21 235895.51 1310.00 1302.00 6227794.21 235895.51 1310.00 1302.00 6227796.80 2358973.10 1310.00 1302.00 6227801.74 235893.39 1309.99 1301.99 LINESOURCE TRUCKO7 8.00 r 6227601.79 235895.15 1310.40 1302.80 6227801.74 235893.95 1309.97 1301.97 LINESOURCE TRUCKO7 8.00 r 6227671.79 235895.16 1310.00 1302.00 6227801.74 235893.95 1309.97 1301.97 LINESOURCE TRUCKO8 8.00 r 6227671.79 235895.15 1332.54 1317.42 6227671.79 235895.16 1336.97 1328.97 6224508.74 2361033.58 1365.51 1357.51 LINESOURCE TRUCKO8 8.00 r 6224508.74 2361033.58 1365.51 1357.51 LINESOURCE TRUCKO8 8.00 r 62245597.30 2360760.55 1358.30 1350.30 62245297.30 2360760.55 1358.30 1350.30 62245297.30 2360760.55 1358.30 1355.03 6224220.56 2359913.60 1336.79 1328.97 6224597.30 2360760.55 1358.30 1355.03 62242597.30 2360760.55 1358.30 1355.03 62242597.30 2360760.55 1358.30 1355.03 62242597.30 2360760.35 1358.30 1355.03 62242597.30 2360760.35 1358.30 1355.03 62242597.30 2360760.35 1364.78 1355.03 6224269.90 2360060.03 1364.78 1355.78 LINESOURCE TRUCK10 8.00 r 62243629.90 2360060.03 1364.78 1355.78 LINESOURCE TRUCK12 8.00 r 62245629.90 2360060.03 1364.78 1355.78 LINESOURCE TRUCK12 8.00 r 62245629.90 2360060.03 1364.78 1355.78 LINESOURCE TRUCK12 8.00 r 62245629.90 2360060.03 1364.78 1355.32 6224629.90 2360060.03 1364.78 1355.32 6224629.90 2360060.03 1364.78 1355.32 6224629.90 2360060.03 1364.78 1355.32 62				\perp		_			_			_
LINESOURCE TRUCKO6 8.00 r				+		_			-		_	-
	LINIESOLIBOE	TRUCKOG	9.00	1.		+			_		+	_
	LINESCORCE	TROCKOO	8.00	+		+			_		+	_
				+		_			-		_	_
				+		+			_		+	_
				t		_			-		_	-
				T		+			_		+	_
						6227	7750.21	235907	5.31	1311.40	1303	3.40
				T		6227	7764.32	235905	7.96	1310.00	1302	2.00
6227794.21 2358995.58 1310.00 1302.00						6227	7776.44	235903	3.25	1310.00	1302	2.00
6227799.68 2358973.10 1310.00 1302.00						6227	7786.44	235901	7.38	1310.00	1302	2.00
						6227	7794.21	235899	5.58	1310.00	1302	2.00
Company						6227	7799.68	235897	3.10	1310.00	1302	2.00
Company						6227	7802.77		_	1310.00	+	_
LINESOURCE TRUCKO7 8.00 r 6227671.90 2359137.57 1332.54 1324.54 LINESOURCE RUCKO8 8.00 r 6227162.45 235929.30 1325.42 1317.42 LINESOURCE TRUCKO8 8.00 r 6224508.74 2361033.58 1365.51 1357.51 LINESOURCE TRUCKO8 8.00 r 6224458.01 2360956.28 1383.08 1375.08 LINESOURCE TRUCKO9 8.00 r 6224420.56 2359913.56 1357.46 1349.46 LINESOURCE TRUCKO9 8.00 r 6224520.50 2359913.56 1357.46 1378.52 LINESOURCE TRUCK10 8.00 r 6224597.30 2360855.25 1386.52 1378.52 LINESOURCE TRUCK11 8.00 r 6224369.03 2359794.39 1353.33 1345.33 LINESOURCE TRUCK11 8.00 r 6224960.00 2360096.04 1374.71 1366.17 LINESOURCE TRUCK12 8				1		+			_		+	_
137.42 1317.42 1317.42 1317.42 1317.42 1317.42 1317.42 1317.42 1317.42 1318.97 1328.				1		_			-		+	_
138.97 1328.	LINESOURCE	TRUCK07	8.00) r		+			_		+	_
1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.51 1357.68 1357				+		_			-			-
LINESOURCE TRUCK08 8.00 r 6224458.01 2360956.28 1383.08 1375.08 LINESOURCE RUCK09 8.00 r 6224757.50 2360760.55 1358.30 1350.30 LINESOURCE TRUCK10 8.00 r 6224597.30 2360865.25 1386.52 1378.52 LINESOURCE TRUCK10 8.00 r 6224369.03 2359794.39 1355.31 1345.33 LINESOURCE TRUCK11 8.00 r 6224369.03 2359794.39 1355.33 1345.33 LINESOURCE TRUCK11 8.00 r 6224369.03 2360795.80 1377.26 1369.26 LINESOURCE TRUCK11 8.00 r 6224629.00 2360069.46 1374.17 1366.17 LINESOURCE TRUCK12 8.00 r 6224629.90 2360060.03 1364.78 1355.78 LINESOURCE TRUCK12 8.00 r 6224629.90 2360060.03 1364.78 1355.23 GE24456.09 2360105.99 <				+		+					_	_
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LINESOURCE TRUCK09 8.00 r 6224597.30 2360865.25 1386.52 1378.52 LINESOURCE TRUCK10 8.00 r 6224369.03 2359794.39 1353.33 1345.33 LINESOURCE TRUCK11 8.00 r 6224964.47 2360735.80 1377.26 1369.26 LINESOURCE TRUCK11 8.00 r 6225020.09 2360699.46 1374.17 1366.17 LINESOURCE TRUCK12 8.00 r 6224629.90 2360060.03 1367.92 1362.92 LINESOURCE TRUCK12 8.00 r 6224629.90 2360060.03 1367.78 1356.78 6224529.90 2360060.03 1364.78 1356.78 6224566.09 236015.95 1360.32 1352.32 6224510.24 236048.97 1369.02 1361.02 1352.32 1361.02 LINESOURCE TRUCK13 8.00 r 6224514.99 236048.97 1369.02 1361.02				+		_			_			_
135.01 1	LINESOURCE	TRUCKNO	ጸ በባ) r		_			-		+	_
LINESOURCE TRUCK10 8.00 r 6224369.03 2359794.39 1353.33 1345.33 LINESOURCE TRUCK11 8.00 r 6224964.47 2360735.80 1377.26 1369.26 LINESOURCE TRUCK11 8.00 r 6224629.00 2360090.46 1374.17 1366.17 LINESOURCE TRUCK12 8.00 r 6224629.00 2360060.03 1364.78 1356.78 LINESOURCE TRUCK12 8.00 r 6224629.90 2360060.03 1364.78 1356.32 4 6224566.09 2360105.95 1360.32 1352.32 5 6224110.24 236048.97 1369.02 1361.02 LINESOURCE TRUCK13 8.00 r 6224514.99 2359698.15 1351.85 1343.85	LAVESCONCE	MOCKOS	0.00	+		_			_			_
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6224110.24 2360408.97 1369.02 1361.02						6224	1629.90	2360060	0.03	1364.78	1356	5.78
LINESOURCE TRUCK13 8.00 r 6224514.99 2359698.15 1351.85 1343.85				Γ		6224	1566.09	236010	5.95	1360.32	1352	2.32
				Ι		6224	1110.24	236040	3.97	1369.02	1361	1.02
6224701.54 2360001.32 1379.25 1371.25	LINESOURCE	TRUCK13	8.00	r		_		235969	8.15		+	_
						6224	1701.54	236000	1.32	1379.25	1371	1.25

Urban Crossroads, Inc.

Area Source(s)

Name	М.	ID	R	esult. PW	L	Re	esult. PW	L''		Lw/L	i	Op	erating Ti	me	Heigh	ıt
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	I
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		1
AREASOURCE		CAR01	81.1	81.1	81.1	50.4	50.4	50.4	Lw	81.1					5	7
AREASOURCE		CAR02	81.1	81.1	81.1	55.6	55.6	55.6	Lw	81.1					5	7
AREASOURCE		CAR03	81.1	81.1	81.1	56.2	56.2	56.2	Lw	81.1					5	7
AREASOURCE		CAR04	81.1	81.1	81.1	55.9	55.9	55.9	Lw	81.1					5	1
AREASOURCE		CAR05	81.1	81.1	81.1	53.2	53.2	53.2	Lw	81.1					5	1
AREASOURCE		CAR06	81.1	81.1	81.1	54.4	54.4	54.4	Lw	81.1					5	7
AREASOURCE		CAR07	81.1	81.1	81.1	56.5	56.5	56.5	Lw	81.1					5	1
AREASOURCE		CAR08	81.1	81.1	81.1	63.0	63.0	63.0	Lw	81.1					5	7
AREASOURCE		CAR09	81.1	81.1	81.1	53.9	53.9	53.9	Lw	81.1					5	1
AREASOURCE		CAR10	81.1	81.1	81.1	53.7	53.7	53.7	Lw	81.1					5	1
AREASOURCE		CAR11	81.1	81.1	81.1	53.4	53.4	53.4	Lw	81.1					5	1
AREASOURCE		CAR12	81.1	81.1	81.1	53.1	53.1	53.1	Lw	81.1					5	1
AREASOURCE		CAR13	81.1	81.1	81.1	52.3	52.3	52.3	Lw	81.1					5	1
AREASOURCE		CAR14	81.1	81.1	81.1	52.3	52.3	52.3	Lw	81.1					5	1
AREASOURCE		CAR15	81.1	81.1	81.1	52.8	52.8	52.8	Lw	81.1					5	1
AREASOURCE		CAR16	81.1	81.1	81.1	58.9	58.9	58.9	Lw	81.1					5	7
AREASOURCE		CAR17	81.1	81.1	81.1	57.8	57.8	57.8	Lw	81.1					5	1
AREASOURCE		CAR18	81.1	81.1	81.1	66.2	66.2	66.2	Lw	81.1					5	1
AREASOURCE		CAR19	81.1	81.1	81.1	56.5	56.5	56.5	Lw	81.1					5	7
AREASOURCE		CAR20	81.1	81.1	81.1	56.2	56.2	56.2	Lw	81.1					5	1
AREASOURCE		CAR21	81.1	81.1	81.1	54.5	54.5	54.5	Lw	81.1					5	7
AREASOURCE		CAR22	81.1	81.1	81.1	56.5	56.5	56.5	Lw	81.1					5	1
AREASOURCE		CAR23	81.1	81.1	81.1	55.0	55.0	55.0	Lw	81.1					5	1
AREASOURCE		CAR24	81.1	81.1	81.1	51.5	51.5	51.5	Lw	81.1					5	7
AREASOURCE		CAR25	81.1	81.1	81.1	54.5	54.5	54.5	Lw	81.1					5	1
AREASOURCE		DOCK01	103.4	103.4	103.4	69.1	69.1	69.1	Lw	103.4					8	1
AREASOURCE		DOCK02	103.4	103.4	103.4	67.9	67.9	67.9	Lw	103.4					8	1
AREASOURCE		DOCK03	103.4	103.4	103.4	65.7	65.7	65.7	Lw	103.4					8	1
AREASOURCE		DOCK04	103.4	103.4	103.4	65.9	65.9	65.9	Lw	103.4					8	7
AREASOURCE		DOCK05	103.4	103.4	103.4	69.6	69.6	69.6	Lw	103.4					8	1
AREASOURCE		DOCK06	103.4	103.4	103.4	76.2	76.2	76.2	Lw	103.4					8	1
AREASOURCE		DOCK07	103.4	103.4	103.4	70.6	70.6	70.6	Lw	103.4					8	1
AREASOURCE		DOCK08	103.4	103.4	103.4	68.2	68.2	68.2	Lw	103.4					8	1
AREASOURCE		DOCK09	103.4	103.4	103.4	68.8	68.8	68.8	Lw	103.4					8	٦
AREASOURCE		DOCK10	103.4	103.4	103.4	63.1	63.1	63.1	Lw	103.4					8	1
AREASOURCE		DOCK11	103.4	103.4	103.4	65.8	65.8	65.8	Lw	103.4					8	٦
AREASOURCE		DOCK12	103.4	103.4	103.4	63.2	63.2	63.2	Lw	103.4					8	1
AREASOURCE		DOCK13	103.4	103.4	103.4	62.4	62.4	62.4	Lw	103.4					8	1
AREASOURCE		DOCK14	103.4	103.4	103.4	62.6	62.6	62.6	Lw	103.4					8	٦

6227592.51 2359115.69 1312.4 6227623.17 2359105.40 1313.3 6227632.92 2359092.71 1330.9 6227681.57 2359077.69 1329.1 6227708.93 2359060.45 1317.3 6227720.93 2359060.45 1317.3 6227731.24 235903.740 1307.8 6227731.24 235903.740 1307.8 6227745.94 2359008.89 1307.3 6227745.94 2359008.89 1307.3 6227742.26 2358892.89 1307.9 622772.63 2358895.63 1308.3 622772.93 2358969.31 1307.9 6227722.63 2358895.63 1308.3 6227722.93 235896.91 1307.9 6227722.93 235896.91 1307.9 6227722.93 235896.91 1307.9 6227722.93 235896.91 1308.0 6227718.97 235900.92 1308.0 6227711.56 235900.92 1308.0 6227702.54 2359040.36 1308.0 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.0 2359070.05 1316.4 6227637.09 235924.44 1330.8 6227187.09 2359244.44 1330.8 6227277.48 235900.0 1321.0 6227277.48 235900.0 1321.0 6227277.48 235900.0 1321.0 6227277.48 235900.0 1321.0 6227277.48 235900.0 1321.0 6227277.48 235902.0 1322.0 6227278.48 235922.48 1323.3 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6						_		<u> </u>		
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AREASOURCE CAR01 5.00 r 6227327.71 2359189.20 1321.6 6227592.51 2359115.69 1312.4 6227623.17 2359105.40 1313.7 622762.92 2359092.71 1330.9 6227681.57 235907.69 1329.1 6227708.93 235906.45 1317.1 6227708.93 235906.45 1317.1 6227731.24 2359037.40 1307.2 6227731.24 2359037.40 1307.2 6227745.94 2359038.99 1307.2 6227745.94 235908.89 1307.2 6227742.26 2358892.89 1307.2 622772.263 2358984.20 1307.2 622772.263 2358985.63 1308.6 622772.263 2358985.63 1308.6 622772.263 235890.92 1308.6 622772.27 235918.97 235900.92 1308.6 622772.2 235890.3 1308.6 622772.2 235896.3 1308.6 622772.6 235890.3 1308.6 622772.6 235890.9 23 1308.6 622772.5 235900.9 23 1308.6 622772.5 235900.9 23 1308.6 622772.5 235900.9 23 1308.6 622771.5 235903.1 23 1308.6 622767.6 235900.9 1316.4 6227653.70 235907.0 1316.4 6227653.70 235907.0 1316.4 622762.7 82 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.6 235908.1 1316.2 6227627.4 235900.0 1324.0 622762.7 235918.3 7 1320.1 6227627.4 235900.0 1324.0 6227627.4 235900.0 1323.0 622700.0 1323.0 622700.0 1323.0 622700.0 1323.0 622700.0 132			Begin		End		х	у	z	Ground
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6227623.17 2359105.40 1313.3 6227652.92 2359092.71 1330.5 6227681.57 2359077.69 1329.1 6227708.93 2359060.45 1317.3 6227731.24 2359049.74 1307.8 6227731.24 2359037.40 1307.5 6227731.24 2359037.40 1307.5 6227745.94 2359008.89 1307.2 6227750.02 2358993.33 1307.5 6227742.63 2358992.89 1307.3 6227722.63 2358895.63 1308.3 6227722.63 2358895.63 1308.3 6227728.9 2358996.93 1308.3 6227728.9 235896.93 1308.3 6227728.9 2359020.76 1308.0 6227713.97 2359040.36 1308.0 6227713.97 2359040.36 1308.0 6227768.71 2359056.18 1311.0 6227627.60 2359070.05 1316.4 6227627.66 235908.91 1316.3 6227627.66 235908.91 1316.3 6227627.66 235908.91 1316.3 6227627.69 235904.44 1330.8 6227727.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227278.48 2359224.81 1323.3 6227098.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6	AREASOURCE	CAR01	5.00	r			6227327.71	2359189.20	1321.65	1316.65
6227652.92 2359092.71 1330.5 6227681.57 2359077.69 1329.1 6227708.93 2359060.45 1317.1 6227730.93 2359049.74 1307.8 6227731.24 2359037.40 1307.2 6227731.24 2359037.40 1307.2 6227735.04 2359037.40 1307.2 6227745.94 2359038.89 1307.2 6227742.62 2358892.89 1307.2 6227722.63 2358892.89 1307.2 6227722.93 2358984.20 1307.2 6227722.93 2358984.20 1307.2 6227728.29 2358996.93 1308.0 6227728.29 235909.22 1308.0 6227728.79 235909.21 1308.0 6227711.56 2359031.23 1308.0 6227711.56 2359031.23 1308.0 6227767.51 2359056.18 1311.0 6227627.63 235907.05 1316.4 6227627.66 235907.05 1316.4 6227627.66 235907.05 1316.4 6227627.66 235907.00 1324.0 6227718.90 2359244.44 1330.8 6227727.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227278.40 235907.00 1323.0 6227278.40 235907.00 1323.0 6227278.40 235907.00 1323.0 6227278.40 235907.00 1323.0 6227278.40 235907.00 1323.0 6227278.40 235907.00 1323.0							6227592.51	2359115.69	1312.44	1307.44
6227781.57 622772.63 622773.24 622773.24 622773.24 622773.24 622773.24 622773.24 622773.24 622773.24 622773.24 622773.24 622773.24 622773.25 622773.25 622773.26 622773.26 622773.26 622772.26 622772.26 622772.26 622772.27 62277							6227623.17	2359105.40	1313.74	1308.74
6227708.93 2359060.45 1317.1 6227720.93 2359049.74 1307.8 6227731.24 2359037.40 1307.3 6227739.63 2359023.68 1307.3 6227745.94 235903.89 1307.2 6227745.02 2358993.33 1307.9 6227742.26 2358892.89 1307.2 622772.63 2358895.63 1308.3 622772.8.29 2358996.93 1308.5 6227724.80 2359009.22 1308.6 6227724.80 2359009.22 1308.6 6227724.60 2359009.22 1308.6 6227724.60 2359009.22 1308.6 6227715.6 2359031.23 1308.5 6227715.6 2359031.23 1308.5 6227715.6 2359031.23 1308.5 6227715.5 2359031.23 1308.6 6227725.5 2359031.23 1308.6 6227705.54 2359040.36 1308.6 622768.71 2359056.18 1311.6 622763.70 2359070.05 1316.4 622763.70 2359070.05 1316.4 622762.76 2359031.23 1302.6 6227727.48 2359020.01 1324.6 6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.6 6227277.48 2359207.00 1321.6 6227277.48 2359207.00 1321.6 6227269.72 2359187.37 1320.3 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.5 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.00 2359273.66 1323.6 622708.00 2359273.66 1323.6 622708.00 2359273.66 1323.6 622708.00 2359273.66 1323.6 622708.00 2359273.66 1323.6 622708.00 2359273.66 1323.6 622708.00 2							6227652.92	2359092.71	1330.95	1325.95
6227720.93 2359049.74 1307.8 6227731.24 2359037.40 1307.2 6227731.24 2359037.40 1307.2 6227736.3 2359023.68 1307.3 6227745.94 2359008.89 1307.2 6227750.02 2358993.33 1307.3 6227726.63 235895.63 1308.3 6227726.63 235895.63 1308.3 6227728.29 2358996.93 1308.3 6227728.29 2358996.93 1308.3 6227718.97 2359009.22 1308.6 6227711.56 2359009.22 1308.6 6227715.56 2359031.23 1308.3 6227715.6 2359031.23 1308.3 622776.5 2359031.23 1308.3 622776.5 235900.76 1308.6 622767.76 235900.05 1316.6 622762.76 2359031.23 1308.3 6227323.14 235906.18 1311.6 622762.76 2359081.91 1316.3 6227323.14 2359169.56 1320.6 6227323.14 235900.05 1316.4 6227323.14 235900.05 1316.4 6227323.14 235900.05 1316.4 6227323.14 235900.05 1316.3 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359129.50 1324.4 6227323.14 2359129.50 1324.4 6227323.14 2359129.50 1323.6 6227323.14 235923.15 1323.4 6227323.14 235923.15 1323.4 6227323.14 235923.15 1323.4 6227323.14 235923.15 1323.4 6227323.14 235923.15 1323.2 622734.80 2359224.81 1323.3 622738.80 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6							6227681.57	2359077.69	1329.13	1324.13
6227731.24 2359037.40 1307.2 6227739.63 2359023.68 1307.3 6227745.94 2359008.89 1307.3 6227742.02 2358993.33 1307.5 6227742.03 2358993.33 1307.5 6227722.03 2358895.63 1308.3 6227722.03 2358895.63 1308.3 6227722.04 235909.22 1308.0 6227724.60 235909.22 1308.0 6227718.97 2359020.76 1308.0 6227711.56 2359031.23 1308.0 6227702.54 2359040.36 1308.0 6227653.70 2359056.18 1311.0 6227653.70 2359056.18 1311.0 6227657.76 2359081.91 1316.3 6227677.66 235908.91 1316.4 6227657.70 235907.00 1324.0 6227727.48 235907.00 1324.0 6227727.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227278.40 235907.00 1321.0 6227278.40 235907.00 1321.0 6227278.40 235907.00 1321.0 6227278.40 235907.00 1321.0 6227278.40 235907.00 1321.0 622728.40 235907.00 1323.0 622708.00 2359273.66 1323.0 6227098.00 2359273.66 1323.0 6227098.00 2359273.66 1323.0 6227098.00 2359273.66 1323.0							6227708.93	2359060.45	1317.14	1312.14
6227739.63 2359023.68 1307.1 6227745.94 2359008.89 1307.2 6227742.62 2358893.33 1307.5 6227724.26 2358892.89 1307.5 6227722.63 2358895.63 1308.1 6227722.63 2358895.63 1308.2 6227722.63 2358895.63 1308.2 6227728.29 235896.93 1308.2 6227728.29 235896.93 1308.2 6227718.97 2359020.76 1308.2 6227711.56 2359031.23 1308.2 6227711.56 2359031.23 1308.2 6227702.54 2359040.36 1308.3 6227653.70 2359056.18 1311.0 6227653.70 2359056.18 1311.0 6227653.70 2359056.18 1311.0 6227653.70 2359050.10 1316.3 62277323.14 2359056.18 1316.3 62277323.14 2359056.18 1316.3 62277323.14 2359056.18 1316.3 62277323.14 2359070.05 1316.4 6227187.09 235924.44 1330.8 6227187.09 235924.44 1330.8 6227187.09 235924.44 1330.8 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227278.40 2359273.66 1323.6 6227088.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6							6227720.93	2359049.74	1307.81	1302.81
6227745.94 2359008.89 1307.2 6227750.02 2358993.33 1307.5 6227742.63 2358895.63 1308.3 6227722.63 2358895.63 1308.3 6227722.93 2358894.20 1307.5 6227728.29 2358996.93 1308.0 6227728.29 2358906.93 1308.0 6227728.40 2359009.22 1308.0 6227713.50 2359002.21 1308.0 6227713.50 2359001.23 1308.0 6227762.54 2359040.36 1308.0 6227627.65 2359040.36 1308.0 6227627.66 2359070.05 1316.4 6227627.66 2359081.91 1316.3 6227627.66 2359081.91 1316.3 6227627.66 2359081.91 1316.3 62277333.14 2359169.56 1320.0 AREASOURCE CAR02 5.00 r 6227105.82 2359290.10 1324.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227277.48 235907.00 1321.0 6227278.40 235927.30 1320.0 6227278.40 235927.30 1320.0 622708.06 2359273.66 1323.3 622708.06 2359273.66 1323.3 622708.06 2359273.66 1323.3							6227731.24	2359037.40	1307.23	1302.23
6227750.02 2358993.33 1307.5 6227742.26 2358892.89 1307.5 6227722.63 2358895.63 1308.3 6227722.93 2358984.20 1307.5 6227728.29 2358996.93 1308.6 6227724.60 235900.22 1308.6 6227718.97 235900.26 1308.6 6227711.56 2359031.23 1308.6 6227762.54 2359040.36 1308.6 6227768.71 2359056.18 1311.6 6227627.66 2359070.05 1316.6 6227627.66 2359081.91 1316.3 6227627.66 2359081.91 1316.3 6227627.69 2359081.91 1316.3 6227187.09 2359244.44 1330.8 6227277.48 235907.00 1321.6 6227277.48 235907.00 1321.6 6227277.48 235907.00 1321.6 6227278.40 2359081.91 1323.6 6227278.41 235908.91 1323.6 6227278.43 235928.91 1323.4 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6							6227739.63	2359023.68	1307.10	1302.10
6227742.26 2358892.89 1307.5 6227722.63 2358895.63 1308.1 6227722.93 2358894.20 1307.5 6227724.60 2358996.93 1308.6 6227724.60 2359009.22 1308.6 6227711.56 2359009.21 1308.6 6227711.56 2359031.23 1308.6 6227711.56 2359040.36 1308.6 6227702.54 2359040.36 1308.6 622768.71 2359056.18 1311.6 622768.71 2359056.18 1311.6 622762.766 2359081.91 1316.3 6227323.14 2359169.56 1320.6 AREASOURCE CARO2 5.00 r 6227105.82 2359290.10 1324.6 6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.6 6227277.48 2359207.00 1321.6 6227277.48 2359207.00 1321.6 6227278.48 2359224.81 1323.3 622708.06 2359273.66 1323.6 AREASOURCE CARO3 5.00 r 6227078.43 2359283.5 1323.4 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6							6227745.94	2359008.89	1307.26	1302.26
622772.63 2358895.63 1308.1 6227728.29 2358996.39 1308.6 6227728.29 2358996.39 1308.6 6227718.79 2359009.22 1308.6 6227711.56 2359009.22 1308.6 6227711.56 2359031.23 1308.6 6227711.56 2359031.23 1308.6 622776.54 2359040.36 1308.6 622768.71 2359056.18 1311.6 622768.71 2359056.18 1311.6 6227653.70 2359070.05 1316.6 6227627.66 2359081.91 1316.3 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227323.14 2359129.10 1324.6 6227323.14 2359129.10 1324.6 6227323.14 2359129.10 1324.6 6227323.14 2359229.10 1324.6 6227323.14 2359229.10 1324.6 6227323.14 2359229.10 1324.6 6227323.14 2359223.10 1324.6 622734.80 2359224.81 1323.1 622708.06 2359273.66 1323.6 622708.06 2359273.66 1323.6							6227750.02	2358993.33	1307.50	1302.50
6227729.93 2358984.20 1307.5 6227728.29 2358996.93 1308.6 6227724.60 2359009.22 1308.6 6227718.97 2359020.76 1308.6 6227711.56 2359031.23 1308.6 6227702.54 2359040.36 1308.6 6227678.71 2359056.18 1311.6 6227653.70 2359070.05 1316.6 6227627.66 2359081.91 1316.5 6227627.66 2359081.91 1316.5 6227627.66 2359081.91 1316.5 6227323.14 2359169.56 1320.6 6227187.09 2359244.44 1330.8 6227187.09 2359244.44 1330.8 6227187.48 2359207.00 1321.6 6227184.80 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6							6227742.26	2358892.89	1307.96	1302.96
6227728.29 2358996.93 1308.0 6227724.60 2359009.22 1308.0 6227718.97 2359020.76 1308.0 6227711.56 2359031.23 1308.0 6227702.54 2359040.36 1308.0 6227678.71 2359056.18 1311.0 6227653.70 2359070.05 1316.4 6227677.76 235908.91 1316.5 6227627.66 235908.91 1316.5 6227627.66 235908.91 1316.5 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.0 6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227184.80 2359248.1 1323.1 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6							6227722.63	2358895.63	1308.19	1303.19
6227724.60 2359009.22 1308.0							6227729.93	2358984.20	1307.94	1302.94
6227718.97 2359020.76 1308.0 6227711.56 2359031.23 1308.0 6227702.54 2359040.36 1308.0 6227768.71 2359056.18 1311.0 6227627.66 2359070.05 1316.4 6227627.66 2359081.91 1316.3 6227323.14 2359169.56 1320.0 AREASOURCE CAR02 5.00 r 6227105.82 2359290.10 1324.0 6227277.48 2359207.00 1321.0 6227277.48 2359207.00 1321.0 6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227184.80 2359224.81 1323.3 622708.06 2359273.66 1323.0 AREASOURCE CAR03 5.00 r 6227078.43 2359283.25 1323.4 6227098.06 2359273.66 1323.6							6227728.29	2358996.93	1308.00	1303.00
6227711.56 2359031.23 1308.0							6227724.60	2359009.22	1308.06	1303.06
6227702.54 2359040.36 1308.0 6227678.71 2359056.18 1311.0 6227678.70 2359070.05 1316.4 622763.70 2359070.05 1316.4 6227627.66 2359081.91 1316.3 6227323.14 2359169.56 1320.0 AREASOURCE CAR02 5.00 r 6227105.82 2359290.10 1324.0 6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.0 6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227084.80 2359224.81 1323.3 AREASOURCE CAR03 5.00 r 6227078.43 2359283.25 1323.4 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6							6227718.97	2359020.76	1308.07	1303.07
6227678.71 2359056.18 1311.0 6227678.71 2359056.18 1311.0 6227653.70 2359070.05 1316.4 6227627.66 2359081.91 1316.3 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227184.80 2359224.81 1323.1 6227184.80 235927.366 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6							6227711.56	2359031.23	1308.00	1303.00
6227653.70 2359070.05 1316.4 6227627.66 2359081.91 1316.3 6227627.66 2359081.91 1316.3 6227323.14 2359169.56 1320.6 6227323.14 2359169.56 1320.6 6227187.09 2359244.44 1330.8 6227267.48 2359207.00 1321.6 6227269.72 2359187.37 1320.1 6227184.80 235924.81 1323.3 6227184.80 235924.81 1323.3 6227088.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 6227010.40 2359137.							6227702.54	2359040.36	1308.00	1303.00
6227627.66 2359081.91 1316.3							6227678.71	2359056.18	1311.00	1306.00
AREASOURCE CAR02 5.00 r 6227105.82 2359290.10 1324.0 6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227184.80 2359224.81 1323.1 6227098.06 2359273.66 1323.6 AREASOURCE CAR03 5.00 r 6227078.43 2359283.25 1323.2 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6							6227653.70	2359070.05	1316.49	1311.49
AREASOURCE CAR02 5.00 r 6227105.82 2359290.10 1324.0 6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227184.80 2359224.81 1323.3 6227088.06 2359273.66 1323.6 AREASOURCE CAR03 5.00 r 6227078.43 2359283.25 1323.4 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227010.40 2359137.61 1319.2							6227627.66	2359081.91	1316.34	1311.34
6227187.09 2359244.44 1330.8 6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227184.80 23592224.81 1323.3 6227098.06 2359273.66 1323.6 AREASOURCE CAR03 5.00 r 6227078.43 2359283.25 1323.4 6227098.06 2359273.66 1323.6 6227010.40 2359137.61 1319.2							6227323.14	2359169.56	1320.62	1315.62
6227277.48 2359207.00 1321.0 6227269.72 2359187.37 1320.1 6227184.80 2359224.81 1323.1 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227098.06 2359273.66 1323.6 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40 2359137.61 1319.2 6227010.40	AREASOURCE	CAR02	5.00	r			6227105.82	2359290.10	1324.00	1319.00
6227269.72 2359187.37 1320.1 13							6227187.09	2359244.44	1330.85	1325.85
6227184.80 2359224.81 1323.1							6227277.48	2359207.00	1321.00	1316.00
AREASOURCE CARO3 5.00 r 6227078.06 2359273.66 1323.6 6227078.43 2359283.25 1323.4 6227078.06 2359273.66 1323.6 6227010.40 2359137.61 1319.2							6227269.72	2359187.37	1320.12	1315.12
AREASOURCE CAR03 5.00 r 6227078.43 2359283.25 1323.4 6227098.06 2359273.66 1323.6 6227010.40 2359137.61 1319.2							6227184.80	2359224.81	1323.13	1318.13
6227098.06 2359273.66 1323.6 6227010.40 2359137.61 1319.2							6227098.06	2359273.66	1323.60	1318.60
6227010.40 2359137.61 1319.2	AREASOURCE	CAR03	5.00	r			6227078.43	2359283.25	1323.42	1318.42
							6227098.06	2359273.66	1323.60	1318.60
							6227010.40	2359137.61	1319.29	1314.29
							6226994.42	2359149.02	1319.94	1314.94

Urban Crossroads, Inc.

Name	ID	H	lei	ght		Coordinat	es	
		Begin		End	X (6)	У	Z (51)	Ground
AREASOURCE	CAROA	(ft) 5.00	r	(ft)	(ft) 6226964.74	(ft) 2359104.73	(ft) 1319.00	(ft) 1314.00
ANLASOONCE	CAILO	3.00	Ė		6226978.90	2359093.78	1319.00	1314.00
					6226878.91	2358936.26	1317.54	1312.54
					6226861.11	2358944.94	1318.61	1313.61
AREASOURCE	CAR05	5.00	r		6226914.98	2358942.66	1317.00	1312.00
					6227003.55	2359077.80	1318.82	1313.82
					6227040.08	2359055.88	1318.19	1313.19
					6226956.53 6226937.35	2358928.05 2358940.83	1316.21 1316.61	1311.21 1311.61
					6226931.41	2358933.52	1316.56	1311.56
AREASOURCE	CAR06	5.00	r		6227062.90	2359039.90	1317.45	1312.45
					6227099.43	2359018.44	1317.00	1312.00
					6227040.99	2358926.68	1316.72	1311.72
					6227021.36	2358940.37	1316.77	1311.77
					6227009.03 6226993.05	2358927.13 2358935.35	1316.00 1316.00	1311.00 1311.00
AREASOURCE	CAR07	5.00	r		6227120.89	2359002.46	1318.73	1313.73
7 III C I I I I I I I I I I I I I I I I	0,11107	5.00	Ė		6227157.87	2358981.46	1320.09	1315.09
					6227123.17	2358927.13	1315.56	1310.56
					6227102.17	2358941.29	1315.48	1310.48
					6227093.49	2358926.22	1314.79	1309.79
ADEACOURCE	CARCO	F 00	L	\vdash	6227075.69	2358937.18	1314.62	1309.62
AREASOURCE	CAR08	5.00	r	-	6227180.69 6227195.30	2358964.57 2358954.53	1322.42 1320.88	1317.42 1315.88
			H	\vdash	6227195.30	2358954.53	1315.00	1315.88
			H		6227160.61	2358935.81	1315.00	1310.00
AREASOURCE	CAR09	5.00	r		6227099.43	2359230.74	1322.51	1317.51
					6227138.24	2359206.55	1320.68	1315.68
					6227069.30	2359102.45	1317.02	1312.02
ADEACOURCE	CARIO	F 00	_		6227031.40	2359126.19	1319.00	1314.00
AREASOURCE	CARIU	5.00	r		6227162.89 6227199.41	2359200.15 2359176.41	1320.16 1317.83	1315.16 1312.83
					6227129.10	2359064.10	1316.53	1311.53
					6227091.67	2359086.93	1317.55	1312.55
AREASOURCE	CAR11	5.00	r		6227226.35	2359170.02	1318.18	1313.18
					6227263.79	2359146.74	1318.46	1313.46
					6227185.72	2359024.84	1320.57	1315.57
AREASOURCE	CARIZ	5.00	_		6227149.19	2359049.49	1317.40	1312.40
ANEASOUNCE	CANIZ	3.00	_		6227308.53 6227317.66	2359128.47 2359133.04	1320.00 1320.00	1315.00 1315.00
					6227333.18	2359123.45	1320.00	1315.00
					6227244.16	2358987.85	1323.00	1318.00
					6227208.09	2359010.68	1321.67	1316.67
					6227292.09	2359139.89	1320.00	1315.00
AREASOURCE	CAR13	5.00	r		6227378.84 6227384.78	2359112.95	1319.22	1314.22
					6227384.78	2359109.30 2359117.06	1318.77 1318.77	1313.77 1313.77
						2359106.56		
					6227303.51	2358948.59	1317.21	1312.21
						2358972.79	1322.39	
		_				2359123.91		
AREASOURCE	CAR14	5.00	r	\vdash		2359092.86	1320.00	
			H	-	6227455.09	2359088.30 2359094.23	1320.00 1320.00	
			H		_			
					022/4/3.1/	2359085.10		
						2359085.10 2358927.13	1315.46	
					6227372.91			1310.46
					6227372.91 6227351.45 6227342.77	2358927.13 2358941.29 2358927.13	1315.46 1316.95 1316.59	1310.46 1311.95 1311.59
					6227372.91 6227351.45 6227342.77 6227327.71	2358927.13 2358941.29 2358927.13 2358936.72	1315.46 1316.95 1316.59 1316.07	1310.46 1311.95 1311.59 1311.07
ADEASOURCE	CAP1E	E 00			6227372.91 6227351.45 6227342.77 6227327.71 6227435.45	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45	1315.46 1316.95 1316.59 1316.07 1319.89	1310.46 1311.95 1311.59 1311.07 1314.89
AREASOURCE	CAR15	5.00	r		6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57
AREASOURCE	CAR15	5.00	r		6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359069.12	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18
AREASOURCE	CAR15	5.00	r		6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359069.12 2359075.51	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57 1314.18	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25
AREASOURCE	CAR15	5.00	r		6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359069.12 2359075.51 2359066.84	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1312.36	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36
AREASOURCE	CAR15	5.00	r		6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227433.63	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359069.12 2359075.51 2359066.84 2358922.57 2358939.46	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1312.36	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36
AREASOURCE	CAR15	5.00	r		6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227433.63 6227428.15	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359075.51 2359066.84 2358922.57 2358939.46 2358928.96	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1312.36 1313.04 1312.84	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84
AREASOURCE	CAR15	5.00	r		6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227433.63 6227428.15 6227428.15	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359069.12 2359075.51 2359066.84 2358922.57 2358939.46 2358938.55	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1312.36 1313.04 1312.84 1313.15	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84
					6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227482.35 6227482.15 6227428.15 6227411.26 6227504.39	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359051.40 2359065.51 2359066.84 2358932.57 2358939.46 2358938.55 2359081.45	1315.46 1316.59 1316.59 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1312.36 1313.04 1312.84 1313.15 1317.49	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84 1308.15
AREASOURCE		5.00			6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227432.63 6227428.15 6227428.15 6227504.39 6227504.39	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359051.40 2359065.51 2359066.84 2358932.57 2358939.46 2358938.55 2359081.45	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1312.36 1313.04 1312.84 1313.15	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84 1308.15 1312.49
					6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227432.63 6227428.15 6227428.15 6227504.39 6227504.39	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359069.12 2359075.51 2359066.84 2358922.57 2358939.46 2358938.55 2358938.55 2359081.45 2359050.86 2359046.29	1315.46 1316.95 1316.59 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1313.04 1312.84 1313.15 1317.49 1311.00	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84 1308.15 1312.49 1306.00 1305.79
					6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227481.5 6227411.26 6227504.39 6227587.94 6227593.88 6227601.18	2358927.13 2358941.29 2358927.13 2358936.72 2359102.45 2359071.40 2359069.12 2359075.51 2359066.84 2358922.57 2358939.46 2358938.55 2358938.55 2359081.45 2359050.86 2359046.29	1315.46 1316.59 1316.59 1316.07 1319.89 1314.57 1314.25 1313.26 1313.26 1313.04 1312.84 1313.15 1317.49 1311.00 1310.79	1310.46 1311.95 1311.59 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84 1308.15 1312.49 1306.00 1305.79 1305.58
					6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227433.63 6227428.15 6227504.39 6227504.39 6227504.39 6227504.39 6227504.39 6227504.39 6227591.60	2358927.13 2358941.29 2358936.72 2359071.40 2359069.12 2359066.84 2358922.57 2358939.46 2358938.55 2359081.45 2359050.86 2359050.86 2359053.60 2359044.47 2359005.66	1315.46 1316.95 1316.07 1319.89 1314.15 1314.25 1313.26 1312.36 1312.84 1312.84 1313.15 1317.49 1311.00 1310.79 1310.58 1310.08	1310.46 1311.95 1311.07 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84 1308.15 1312.49 1305.09 1305.58
					6227372.91 6227351.45 6227342.77 6227327.71 6227435.45 6227520.83 6227527.68 6227529.96 6227545.03 6227452.35 6227433.63 6227428.15 6227411.26 6227504.39 6227593.88 6227593.88 6227601.18	2358927.13 2358941.29 2358927.13 2358936.72 2359071.40 2359069.12 2359066.84 2358922.57 2358938.46 2358938.55 2359081.45 2359050.86 2359050.86 2359050.86 2359050.80	1315.46 1316.95 1316.07 1319.89 1314.57 1314.18 1314.25 1313.26 1313.04 1313.04 1313.15 1317.49 1311.00 1310.79 1310.58 1310.08	1310.46 1311.95 1311.07 1311.07 1314.89 1309.57 1309.18 1309.25 1308.26 1307.36 1308.04 1307.84 1308.15 1312.49 1306.00 1305.58 1305.08

Name	ID		lei	ght _ ·		Coordinat		
		Begin (ft)	Н	End (ft)	(f+)	У / f+ \	Z (f+)	Ground
		(ft)	H	(ft)	(ft) 6227679.25	(ft) 2359013.42	(ft) 1308.94	(ft) 1303.94
			Н		6227649.12	2358967.77	1310.00	1305.00
			Н		6227613.97	2358991.51	1310.00	1305.00
			П		6227639.99	2359035.79	1309.76	1304.76
AREASOURCE	CAR18	5.00	r		6227680.17	2358967.77	1309.25	1304.25
					6227697.52	2358957.27	1308.79	1303.79
					6227689.76	2358943.57	1308.75	1303.75
					6227671.95	2358951.79	1309.34	1304.34
AREASOURCE	CAR19	5.00	r		6227687.47	2358902.02	1308.76	1303.76
					6227677.89	2358886.96	1309.00	1303.99
			H		6227533.61 6227544.57	2358980.09	1311.89	1306.89
AREASOURCE	CAP20	5.00	r		6226978.44	2358995.16 2359350.82	1312.08 1325.36	1307.08 1320.36
ANLAGOUNCE	CANZO	3.00	H		6226996.25	2359330.82	1325.00	1320.00
			Н		6226908.59	2359204.26	1320.20	1315.20
			Н		6226893.06	2359214.31	1323.80	1318.80
AREASOURCE	CAR21	5.00	r		6226892.61	2359351.27	1340.50	1335.50
			П		6226928.22	2359327.99	1335.20	1330.20
					6226866.13	2359232.11	1329.55	1324.55
					6226830.97	2359254.03	1333.50	1328.50
AREASOURCE	CAR22	5.00	r		6226876.17	2359414.74	1340.57	1335.57
			Ц	\perp	6226891.69	2359403.32	1340.16	1335.16
			Ц		6226804.04	2359269.55	1328.01	1323.01
ADEACOURSE	CADOO	F 00	Н	\vdash	6226788.06	2359279.59	1324.35	1319.35
AREASOURCE	CAR23	5.00	r		6226737.38	2359201.98	1321.00	1316.00
			Н	\vdash	6226753.36 6226631.91	2359192.85 2358999.27	1321.00 1319.70	1316.00 1314.70
			Н	+	6226631.91	2358999.27	1319.70	1314.70
AREASOURCE	CAR24	5.00	r		6226801.75	2359208.83	1320.76	1315.76
7 (11.2) 10.0 0 11.0 2	0,11121	5,00	Ė		6226836.45	2359185.54	1320.00	1315.00
			П		6226717.75	2358996.53	1319.82	1314.82
					6226698.57	2359011.60	1320.00	1315.00
					6226691.72	2359003.38	1319.90	1314.90
					6226675.29	2359013.88	1319.96	1314.96
AREASOURCE	CAR25	5.00	r		6226862.93	2359169.11	1319.59	1314.59
					6226880.74	2359158.61	1319.00	1314.00
					6226751.08	2358956.35	1319.00	1314.00
	200101		L		6226733.27	2358965.48	1319.19	1314.19
AREASOURCE	DOCK01	8.00	r		6224838.46	2360688.99	1379.57	1371.57
			Н		6224875.18 6224554.88	2360662.40 2360159.79	1380.00 1360.06	1372.00 1352.06
					6224511.36	2360133.73	1357.00	1349.00
AREASOURCE	DOCK02	8.00	r		6224808.08	2360776.35	1362.03	1354.03
			Ė		6224858.72	2360744.69	1378.12	1370.12
					6224501.70	2360192.71	1357.00	1349.00
					6224456.13	2360223.09	1358.81	1350.81
AREASOURCE	DOCK03	8.00	٢		6224619.44	2360813.06	1389.35	1381.35
					6224708.06	2360753.56	1360.69	1352.69
					6224389.03	2360262.34	1362.41	1354.41
1051			Ц		6224302.94		1366.92	1358.92
AREASOURCE	DOCK04	8.00	r	\vdash		2360906.75		
			Н	 		2360849.77		1379.17
			Н	 	6224238.37	2360359.82 2360388.94	1362.82 1366.08	1354.82 1358.08
			H	 	+	2360443.38	1365.54	
			H	 		2360472.50	1371.00	
AREASOURCE	DOCK05	8.00	r			2361039.68	1378.60	1370.60
			П			2361016.89	1379.15	1371.15
					6224187.73	2360616.83	1369.21	1361.21
			Д		6224142.15	2360645.95	1366.36	1358.36
AREASOURCE	DOCK06	8.00	r		6224100.37		1368.98	1360.98
			Ц		1	2360328.17	1368.09	
			Ц		6224202.92		1375.11	1367.11
ADEACOURS =	DOCKET	0.00	Н	\vdash		2360215.50	1372.00	1364.00
AREASOURCE	DUCK07	8.00	r	 	6224264.96		1376.00	1368.00
			Н	 		2360201.57	1375.00	
			H	 	+	2360024.33 2360054.71	1370.70 1368.51	
			H			2360034.71	1375.93	
			H	 	6224210.32		1369.77	1361.77
AREASOURCE	DOCK08	8.00	r			2360162.33	1368.17	1360.17
			П		6224514.36		1355.51	1347.51
			П		1	2359848.35		
					6224254.83	2359911.65	1357.00	1349.00
AREASOURCE	DOCK09	8.00	r		6224581.46	2360054.71	1361.00	1353.00
			_					4000.07
			Ш		6224668.82	2359996.48	1371.67	1363.67

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	у	Z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
					6224419.41	2359804.04	1352.11	1344.11
AREASOURCE	DOCK10	8.00	r		6224662.49	2359848.35	1355.18	1347.18
					6224715.66	2359936.97	1362.94	1354.94
					6225957.63	2359139.38	1328.54	1320.54
					6225928.51	2359093.81	1326.72	1318.72
					6225246.12	2359533.11	1353.14	1345.14
					6225220.80	2359488.80	1345.23	1337.23
AREASOURCE	DOCK11	8.00	r		6224570.07	2359709.09	1353.00	1345.00
					6224627.04	2359796.45	1353.70	1345.70
					6225185.35	2359438.16	1337.00	1329.00
					6225151.17	2359391.32	1337.00	1329.00
					6224996.72	2359495.13	1338.74	1330.74
					6224967.60	2359448.29	1338.79	1330.79
AREASOURCE	DOCK12	8.00	r		6226242.82	2359110.09	1328.00	1320.00
					6226201.97	2359053.29	1313.98	1305.98
					6224803.02	2359968.62	1356.73	1348.73
					6224837.09	2360018.22	1357.07	1349.07
AREASOURCE	DOCK13	8.00	r		6226781.48	2359657.58	1352.71	1344.71
					6226756.87	2359611.87	1353.00	1345.00
					6224610.49	2361002.36	1373.80	1365.80
					6224638.61	2361046.31	1372.96	1364.96
AREASOURCE	DOCK14	8.00	r		6226767.42	2359529.25	1354.00	1346.00
					6226727.08	2359479.38	1339.08	1331.08
					6224995.24	2360597.53	1359.09	1351.09
					6225027.11	2360645.51	1357.18	1349.18

Barrier(s)

Name	Sel.	М.	ID	Absc	rption	Z-Ext.	Canti	ilever	Hei	ght		Coordinat	es	
				left	right		horz. vert.		Begin	End	х	у	z	Ground
						(ft)	(ft) (ft)		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)

Building(s)

	<u> </u>											
Name	Sel.	М.	ID	RB	Residents	Absorption	Height			Coordinat	es	
							Begin		х	у	Z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BUILDING00001	х	0		55.00	r	6224763.17	2360236.53	1416.55	1361.55
									6224995.24	2360597.53	1416.55	1351.09
									6226848.36	2359401.08	1416.55	1336.00
									6226624.88	2359046.96	1416.55	1315.15
									6226593.94	2359064.15	1416.55	1315.58
									6226537.21	2358990.23	1416.55	1310.65
									6226422.04	2359064.15	1416.55	1317.71
									6226391.09	2359014.30	1416.55	1305.84
									6224837.09	2360018.22	1416.55	1349.07
									6224861.15	2360057.75	1416.55	1351.82

APPENDIX 10.1:

PROJECT CONSTRUCTION NOISE CALCULATIONS





14324 - Pepper 210

CadnaA Noise Prediction Model: 14324-02_Construction.cna

Date: 25.01.24 Analyst: B. Lawson

Calculation Configuration

Configuration Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	3048.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	365.76
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	1
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Val	ue		Lanc	l Use	Height		Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Υ	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)	
RECEIVERS		R1	51.4	51.4	58.0	57.8	52.7	0.0				5.00	r	6223818.04	2360027.16	1411.49	
RECEIVERS		R2	48.8	48.8	55.5	58.4	51.9	0.0				5.00	r	6223612.13	2360666.53	1384.68	
RECEIVERS		R3	29.7	29.6	36.3	59.9	59.3	0.0				5.00	r	6230332.33	2359504.19	1299.25	
RECEIVERS		R4	45.1	45.1	51.8	69.6	66.9	0.0				5.00	r	6225001.22	2358523.59	1370.59	
RECEIVERS		R5	43.9	43.9	50.6	58.6	54.7	0.0				5.00	r	6224083.55	2358688.48	1398.20	
RECEIVERS		R6	47.2	47.2	53.9	58.9	53.4	0.0				5.00	r	6223867.90	2359521.90	1410.82	

Area Source(s)

Name	М.	ID	R	esult. PW	'L	Re	esult. PW	L"		Lw / Li		Op	erating Ti	me	Height	П
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	П
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		П
SITEBOUNDARY		CONSTRUCTION	122.6	15.6	15.6	66.4	-40.6	-40.6	PWL-Pt	115.6					8	r

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	Z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	r		6224365.16	2361291.42	0.00	1359.19
					6224507.50	2361222.64	0.00	1355.00
					6224508.35	2361222.11	0.00	1355.00
					6224509.20	2361221.58	0.00	1355.00
					6224510.04	2361221.04	0.00	1355.00
					6224510.89	2361220.51	0.00	1355.00
					6224511.73	2361219.98	0.00	1355.00
					6224512.58	2361219.44	0.00	1355.00
					6224513.42	2361218.90	0.00	1355.00

Regin End x y z Ground	Name	ID	Н	eight		Coordinat	es	
					х	у	z	Ground
			(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
					6224514.26	2361218.36	0.00	1355.00
					6224515.10	2361217.82	0.00	1355.00
					6224515.94	2361217.28	0.00	1355.00
622788.83 235887.02 0.00 1301.0					6224516.78	2361216.74	0.00	1355.00
					6228144.03	2358874.50	0.00	1296.95
							0.00	1301.00
					6227844.44	2358903.68	0.00	1301.24
					6227762.26	2358904.21	0.00	1302.63
								1302.60
					6227728.95	2358884.73		1303.14
622693.70 2358864.59 0.00 131.03 6226652.78 235886.36 0.00 131.03 6226651.79 235886.61 0.00 131.03 6226649.80 235886.61 0.00 131.03 6226649.80 235886.61 0.00 131.03 6226648.81 235886.87 0.00 131.03 6226648.81 235886.87 0.00 131.03 6226648.81 2358867.00 0.00 131.03 6226648.81 2358867.00 0.00 131.03 6226648.81 2358867.00 0.00 131.03 6226648.81 2358867.00 0.00 131.03 6226648.81 2358867.50 0.00 131.03 6226648.82 2358867.50 0.00 131.03 6226648.83 2358867.50 0.00 131.03 6226648.84 2358867.90 0.00 131.03 6226648.85 2358867.90 0.00 131.03 6226649.80 2358868 2358867.90 0.00 131.03 6226639.80 2358868 235886 0.00 131.03 6226639.91 2358868 235886 0.00 131.03 6226639.91 2358868 235886 0.00 131.03 6226639.91 2358868 235886 0.00 131.03 6226639.91 2358868 235886 0.00 131.03 6226639.91 2358868 235886 0.00 131.03 6226639.91 2358868 235886 0.00 131.03 6226639.91 235886 235886 0.00 131.03 6226639.91 235886 235886 0.00 131.03 6226639.91 235886 235886 0.00 131.03 6226639.91 235886 0.00 131.03 6226639.91 235886 0.00 131.03 6226639.91 235886 0.00 131.03 6226639.91 235886 0.00 131.03 6226639.91 235886 0.00 131.03 6226639.91 235886 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03 6226639.91 235887 0.00 131.03								1303.56
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6226602.26 2358873.40 0.00 1313.5 6226601.27 2358873.55 0.00 1313.6 6226600.29 2358873.70 0.00 1313.6 6226599.30 2358873.85 0.00 1313.7 6226598.31 2358874.00 0.00 1313.7 6226596.33 2358874.15 0.00 1313.8 6226596.33 2358874.30 0.00 1313.8 6226595.34 2358874.45 0.00 1313.8 6226593.37 2358874.60 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226604.24	2358873.10	0.00	1313.46
6226601.27 2358873.55 0.00 1313.6 6226600.29 2358873.70 0.00 1313.6 6226599.30 2358873.85 0.00 1313.6 6226598.31 2358874.00 0.00 1313.7 6226596.33 2358874.15 0.00 1313.7 6226596.33 2358874.30 0.00 1313.8 6226596.34 2358874.45 0.00 1313.8 6226593.35 2358874.45 0.00 1313.8 6226593.37 2358874.75 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0					6226603.25	2358873.25	0.00	1313.51
6226599.30 2358873.70 0.00 1313.6 6226599.30 2358873.85 0.00 1313.6 6226598.31 2358874.00 0.00 1313.7 6226597.32 2358874.15 0.00 1313.7 6226595.34 2358874.30 0.00 1313.8 6226596.34 2358874.45 0.00 1313.8 6226594.35 2358874.45 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226593.37 2358874.70 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0					6226602.26	2358873.40	0.00	1313.55
6226599.30 2358873.85 0.00 1313.6 6226598.31 2358874.00 0.00 1313.7 6226597.32 2358874.15 0.00 1313.7 6226595.33 2358874.30 0.00 1313.8 6226595.34 2358874.45 0.00 1313.8 6226594.35 2358874.60 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226601.27	2358873.55	0.00	1313.60
6226598.31 2358874.00 0.00 1313.7 6226597.32 2358874.15 0.00 1313.7 6226596.33 2358874.30 0.00 1313.8 6226596.33 2358874.45 0.00 1313.8 6226594.35 2358874.45 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226600.29	2358873.70	0.00	1313.64
6226597.32 2358874.15 0.00 1313.7 6226596.33 2358874.30 0.00 1313.8 6226595.34 2358874.45 0.00 1313.8 6226594.35 2358874.60 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226599.30	2358873.85	0.00	1313.69
6226596.33 2358874.30 0.00 1313.8 6226595.34 2358874.45 0.00 1313.8 6226594.35 2358874.60 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226598.31	2358874.00	0.00	1313.73
6226595.34 2358874.45 0.00 1313.8 6226594.35 2358874.60 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226597.32	2358874.15	0.00	1313.78
6226594.35 2358874.60 0.00 1313.9 6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226596.33	2358874.30	0.00	1313.82
6226593.37 2358874.75 0.00 1313.9 6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226595.34	2358874.45	0.00	1313.87
6226592.38 2358874.90 0.00 1314.0 6226591.39 2358875.06 0.00 1314.0					6226594.35	2358874.60	0.00	1313.91
6226591.39 2358875.06 0.00 1314.0					6226593.37	2358874.75	0.00	1313.96
					6226592.38	2358874.90	0.00	1314.00
6226590.40 2358875.21 0.00 1314.0					6226591.39	2358875.06	0.00	1314.00
					6226590.40	2358875.21	0.00	1314.00

Name	ID	Не	eight		Coordinat	es	
		Begin	End	х	у	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6226589.41	2358875.36	0.00	1314.00
				6226588.42	2358875.52	0.00	1314.00
				6226587.44	2358875.67	0.00	1314.05
				6226586.45	2358875.83	0.00	1314.10
				6226585.46	2358875.98	0.00	1314.16
				6226584.47	2358876.14	0.00	1314.21
				6226583.48	2358876.29	0.00	1314.27
				6226582.50	2358876.45	0.00	1314.31
				6226581.51		0.00	1314.33
			+ +	6226580.52	2358876.76	0.00	1314.35
				6226579.53		0.00	1314.36
				6226578.55	2358877.08	0.00	1314.38
				6226577.56		0.00	1314.38
				1	2358877.40		
			+ +	6226576.57		0.00	1314.41
				6226575.58		0.00	1314.43
		\vdash	+	6226574.60	2358877.72	0.00	1314.45
		\vdash	+ +	6226573.61	2358877.88	0.00	1314.46
		 	+ +	6226572.62	2358878.04	0.00	1314.48
		\vdash	+	6226571.63	2358878.20	0.00	1314.50
			-	6226570.65	2358878.36	0.00	1314.51
		-	+	6226569.66	2358878.52	0.00	1314.53
				6226568.67	2358878.68	0.00	1314.55
				6226567.69	2358878.84	0.00	1314.57
				6226566.70	2358879.01	0.00	1314.58
				6226565.71	2358879.17	0.00	1314.60
				6226564.73	2358879.33	0.00	1314.62
				6226563.74	2358879.50	0.00	1314.63
				6226562.75	2358879.66	0.00	1314.65
				6226561.77	2358879.83	0.00	1314.67
				6226560.78	2358879.99	0.00	1314.68
				6226559.80	2358880.16	0.00	1314.70
				6226558.81	2358880.33	0.00	1314.71
				6226557.82	2358880.49	0.00	1314.72
				6226556.84	2358880.66	0.00	1314.74
				6226555.85	2358880.83	0.00	1314.75
				6226554.87	2358880.99	0.00	1314.77
				6226553.88	2358881.16	0.00	1314.78
				6226552.89	2358881.33	0.00	1314.80
				6226551.91	2358881.50	0.00	1314.81
				6226550.92	2358881.67	0.00	1314.82
				6226549.94		0.00	1314.84
				6226548.95	2358882.01	0.00	1314.85
			1 1	6226547.97	2358882.18	0.00	1314.87
			1	6226546.98	2358882.35	0.00	1314.88
				6226546.00	2358882.52	0.00	1314.90
			1 1	6226544.48	2358882.79	0.00	1314.92
			+ +	6226486.90		0.00	
			+ +		2358948.69		1316.91
		 	+ +		2358959.62		1317.00
		 	+ +	6225445.23		0.00	
		+	+ +	6225067.09		0.00	
		+ +	+	6224693.92		0.00	
		 	+ +	-			
		\vdash	+	6224636.99		0.00	1338.37
		+	+ +	6224571.38		0.00	
		\vdash	+	6224571.64	2359435.03	0.00	1341.33
		\vdash	-	6224213.41		0.00	1399.07
		\vdash	\perp	6224191.52	2359522.81	0.00	1398.78
			1	6224105.49		0.00	1402.10
				6223914.10	2360189.45	0.00	1385.53
				6223915.89	2360347.69	0.00	1375.31



APPENDIX 10.2:

NIGHTTIME CONCRETE POUR NOISE CALCULATIONS





14324 - Pepper 210

CadnaA Noise Prediction Model: 14324-02_Pour.cna

Date: 25.01.24 Analyst: B. Lawson

Calculation Configuration

Configurat	tion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	3048.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	365.76
Model of Terrain	Triangulation
Reflection	-
max. Order of Reflection	1
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrie
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	М.	ID		Level Lr		Lir	nit. Val	ue		Lanc	l Use	Height		Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Υ	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)	
RECEIVERS		R1	41.1	-65.7	38.1	57.8	52.7	0.0				5.00	r	6223818.04	2360027.16	1411.49	
RECEIVERS		R2	37.9	-68.8	34.9	58.4	51.9	0.0				5.00	r	6223612.13	2360666.53	1384.68	
RECEIVERS		R3	25.9	-77.6	22.9	59.9	59.3	0.0				5.00	r	6230332.33	2359504.19	1299.25	
RECEIVERS		R4	38.2	-68.5	35.2	69.6	66.9	0.0				5.00	r	6225001.22	2358523.59	1370.59	
RECEIVERS		R5	34.7	-71.6	31.7	58.6	54.7	0.0				5.00	r	6224083.55	2358688.48	1398.20	
RECEIVERS		R6	37.2	-69.5	34.1	58.9	53.4	0.0				5.00	r	6223867.90	2359521.90	1410.82	

Area Source(s)

Name	М.	ID	R	esult. PW	'L	Re	esult. PW	L"		Lw / Li		Op	erating Ti	me	Height	П
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	Night	(ft)	П
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		П
SITEBOUNDARY		CONSTRUCTION	107.3	0.3	0.3	51.1	-55.9	-55.9	PWL-Pt	100.3					8	r

Name	ID	ŀ	lei	ght		Coordinat	es	
		Begin		End	х	У	Z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	r		6224365.16	2361291.42	1367.19	1359.19
					6224507.50	2361222.64	1363.00	1355.00
					6224508.35	2361222.11	1363.00	1355.00
					6224509.20	2361221.58	1363.00	1355.00
					6224510.04	2361221.04	1363.00	1355.00
					6224510.89	2361220.51	1363.00	1355.00
					6224511.73	2361219.98	1363.00	1355.00
					6224512.58	2361219.44	1363.00	1355.00
					6224513.42	2361218.90	1363.00	1355.00

Regin	Name	ID	H	eia	ght		Coordinat	es	
(n) (n) (n) (n) (n) (n) (n) (n) (n) (n)	1101110			Ï		х			Ground
				1					(ft)
				1					1355.00
						6224515.10	2361217.82	1363.00	1355.00
6228144.02 2358874.50 1304.95 122 622768.83 2358877.02 1300.00 131 622768.83 235887.02 1300.00 131 622762.62 2358904.21 1310.63 131 63 6227762.62 2358904.21 1310.63 131 63 6227762.95 2358864.95 1311.64 131 622778.95 2358864.95 1311.65 131 622762.05 2358864.95 1313.86 131 6226651.79 2358866.95 1312.00 131 6226651.79 2358866.95 1312.00 131 6226651.79 2358866.95 1321.00 131 6226651.79 2358866.01 1321.00 131 622664.88 2358867.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358868.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00 1321.00 131 622663.99 2358869.00						6224515.94	2361217.28	1363.00	1355.00
6272786.8 2358877.0 309.00 13						6224516.78	2361216.74	1363.00	1355.00
6272764.26 2358903.66 390.24 318 6227762.26 2358904.21 311.66 318 6227762.26 2358904.21 311.66 318 6227728.95 2358884.73 3311.61 318 3				\perp		6228144.03	2358874.50	1304.95	1296.95
6227762.19 2358804.21 310.03 31 6227762.19 2558845.2 311.06 13 6227728.79 2558859.33 311.15 13 622703.79 2558859.33 311.56 13 622703.79 2558864.59 318.38 13 6226652.70 2558866.36 1321.00 13 6226652.79 2558866.36 1321.00 13 6226650.79 2558866.36 1321.00 13 6226650.79 2558866.36 1321.00 13 6226650.79 2558866.37 1321.00 13 6226645.80 2558866.37 1321.00 13 6226645.80 2558866.37 1321.00 13 6226645.80 2558866.74 1321.00 13 6226645.80 2558866.74 1321.00 13 6226645.80 2558867.20 1321.00 13 6226645.80 2558867.20 1321.00 13 6226645.80 2558867.20 1321.00 13 6226645.80 2558867.20 1321.00 13 6226645.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 6226648.80 2558867.20 1321.00 13 622663.90 2558868.90 2321.00 13 622663.90 2558868.80 1321.00 13 622663.90 2558868.80 1321.00 13 622663.90 2558868.80 1321.00 13 622663.90 2558868.80 1321.00 13 622663.90 2558868.80 1321.00 13 622663.90 2558869.80 1321.00 13 622663.90 2558869.80 1321.00 13 622663.90 2558869.80 1321.00 13 622663.90 2558869.80 1321.00 13 622663.90 2558869.80 1321.00 13 622663.90 2558869.80 1321.00 13 622663.90 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80 1321.00 13 622663.00 2558869.80				4				1309.00	1301.00
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6227728.79 2258865.37 1317.86 131 6227603.79 2258865.37 1317.86 131.				4					1302.60
				4					1303.14
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6226639.89 2358868.05 321.00 13:				1				1321.00	1313.00
6226638.90 2358868.19 1321.00 133 6226637.91 2358868.32 3121.00 133 6226635.92 2358868.55 3121.00 133 6226635.92 2358868.59 3121.00 133 6226634.93 2358868.65 3121.00 133 6226634.93 2358868.66 3121.00 133 6226631.96 2358868.99 3121.00 133 6226631.96 2358869.13 3121.00 133 6226631.96 2358869.13 3121.00 133 6226630.97 2358869.40 3121.00 133 6226628.99 2358869.40 3121.00 133 6226628.90 2358869.61 3121.00 133 6226628.00 2358869.61 3121.00 133 6226628.00 2358869.61 3121.00 133 6226620.00 2358869.61 3121.00 133 6226620.00 2358869.61 3121.00 133 6226620.00 2358869.61 3121.00 133 6226620.00 2358869.61 3121.00 133 6226620.00 2358870.93 3121.00 133 6226620.00 2358870.93 3121.00 133 6226620.00 2358870.93 3121.00 133 6226620.00 2358870.93 3121.00 133 6226610.00 2358870.93 3121.00 133 6226610.00 2358870.93 3121.00 133 6226611.00 2358871.03 3121.00 133 6226611.01 2358871.03 3121.00 133 6226611.11 2358871.05 3121.00 133 6226611.17 2358871.25 3121.00 133 6226611.17 2358871.25 3121.00 133 6226611.17 2358871.25 3121.00 133 6226611.17 2358871.28 3121.00 133 6226611.17 2358871.28 3121.00 133 6226611.17 2358871.28 3121.00 133 6226611.17 2358871.28 3121.00 133 6226611.17 2358871.28 3121.00 133 6226601.27 2358872.61 3121.33 6226602.20 2358873.40 3121.25 6226602.21 2358873.45 3121.10 313 6226602.22 2358873.45 3121.10 313 6226602.22 2358873.45 3121.10 313 6226602.23 2358873.45 3121.85 313 6226603.25 2358873.45 3121.85 313 6226600.26 2358873.45 3121.87 313 6226600.27 2358873.45 3121.87 313 6226600.29 2358873.40 3121.55 313 6226600.29 2358873.40 3121.55 313 6226600.29 2358873.40 3121.5						6226640.88	2358867.92	1321.00	1313.00
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6226635.91 2358868.45 1321.00 13:						6226638.90	2358868.19	1321.00	1313.00
622663.91				_		6226637.91	2358868.32	1321.00	1313.00
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6226590.40 2358875.21 1322.00 133						6226590.40	2358875.21	1322.00	1314.00

Name	ID	Height				Coordinates		
		Begin	\perp	End	х	у	Z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
					6226589.41	2358875.36	1322.00	1314.00
					6226588.42	2358875.52	1322.00	1314.00
					6226587.44	2358875.67	1322.05	1314.05
					6226586.45	2358875.83	1322.10	1314.10
					6226585.46	2358875.98	1322.16	1314.16
					6226584.47	2358876.14	1322.21	1314.21
					6226583.48	2358876.29	1322.27	1314.27
					6226582.50	2358876.45	1322.31	1314.31
					6226581.51	2358876.61	1322.33	1314.33
					6226580.52	2358876.76	1322.35	1314.35
					6226579.53	2358876.92	1322.36	1314.36
					6226578.55	2358877.08	1322.38	1314.38
					6226577.56	2358877.24	1322.40	1314.40
					6226576.57	2358877.40	1322.41	1314.41
					6226575.58	2358877.56	1322.43	1314.43
			\vdash		6226574.60	2358877.72	1322.45	1314.45
			H		6226573.61	2358877.88	1322.46	1314.46
			\vdash		6226573.61	2358877.88	1322.48	1314.48
			H		6226571.63	2358878.20	1322.50	1314.50
			+	-+	6226570.65	2358878.36	1322.51	1314.51
			+		6226569.66	2358878.52	1322.53	1314.53
					6226568.67	2358878.68	1322.55	1314.55
					6226567.69	2358878.84	1322.57	1314.57
					6226566.70	2358879.01	1322.58	1314.58
					6226565.70		1322.58	
						2358879.17		1314.60
			\vdash		6226564.73	2358879.33	1322.62	1314.62
			\vdash		6226563.74	2358879.50	1322.63	1314.63
					6226562.75	2358879.66	1322.65	1314.65
			\vdash		6226561.77	2358879.83	1322.67	1314.67
			Н		6226560.78	2358879.99	1322.68	1314.68
					6226559.80	2358880.16	1322.70	1314.70
					6226558.81	2358880.33	1322.71	1314.71
					6226557.82	2358880.49	1322.72	1314.72
					6226556.84	2358880.66	1322.74	1314.74
			Ш		6226555.85	2358880.83	1322.75	1314.75
					6226554.87	2358880.99	1322.77	1314.77
					6226553.88	2358881.16	1322.78	1314.78
					6226552.89	2358881.33	1322.80	1314.80
			Щ.		6226551.91	2358881.50	1322.81	1314.81
			\perp		6226550.92	2358881.67	1322.82	1314.82
			Ш		6226549.94	2358881.84	1322.84	1314.84
			Ш		6226548.95	2358882.01	1322.85	1314.85
			Ш		6226547.97	2358882.18	1322.87	1314.87
			Ш		6226546.98	2358882.35	1322.88	1314.88
			Ш		6226546.00	2358882.52	1322.90	1314.90
			Ш		6226544.48	2358882.79	1322.92	1314.92
			Ш		6226486.90	2358920.36	1324.00	1316.00
					6226363.73	2358948.69	1324.91	1316.91
					6226299.94	2358959.62	1325.00	1317.00
					6225445.23	2359192.55	1335.23	1327.23
					6225067.09	2359382.65	1337.90	1329.90
					6224693.92	2359438.51	1342.96	1334.96
					6224636.99	2359390.64	1346.37	1338.37
					6224571.38	2359400.41	1350.24	1342.24
					6224571.64		1349.33	1341.33
			т		6224213.41	2359437.34		1399.07
			\vdash		6224191.52	2359522.81	1406.78	1398.78
			\vdash		6224105.49		1410.10	1402.10
			\vdash		6223914.10	2360189.45	1393.53	1385.53
			\vdash		6223915.89	2360347.69	1383.31	1375.31
			ш_		3223313.03	_555547.55	1000.01	10,0.01

