

Ethanac and Barnett Warehouse

NOISE AND VIBRATION ANALYSIS CITY OF MENIFEE

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14775-03 Noise Study



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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
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
Hz	Hertz
INCE	Institute of Noise Control Engineering
L _{eq}	Equivalent continuous (average) sound level
L _{max}	Maximum level measured over the time interval
L _{min}	Minimum level measured over the time interval
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Ethanac and Barnett Warehouse
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 potential noise impacts and the necessary noise mitigation measures, if any, for the proposed Ethanac and Barnett Warehouse development ("Project"). The Project is proposed to consist of two industrial buildings totaling 251,912-square-feet (sf). This analysis assumes up to 25,191-sf manufacturing use (10% of the total industrial building sf) and 226,721-sf of warehouse use (90% of industrial building). This study has been prepared to satisfy applicable City of Menifee standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines (1).

The results of this Ethanac and Barnett Warehouse Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

Analusia	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	-		

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

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1 INTRODUCTION

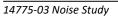
This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Ethanac and Barnett Warehouse ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, 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 Ethanac and Barnett Warehouse site is located at the southwest corner of Barnett Road and Ethanac Road in the City of Menifee, as shown on Exhibit 1-A. The Project site is currently vacant. Existing land uses near the site consist mostly of vacant land to the west, east of the Project site with some nearby residential homes located southwest and southeast of the Project site.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of two industrial buildings totaling 251,912-square-feet (sf). This analysis assumes up to 25,191-sf manufacturing use (10% of the total industrial building sf) and 226,721-sf of warehouse use (90% of industrial building). A preliminary site plan for the proposed Project is shown on Exhibit 1-B. It is anticipated that the Project would be developed in a single phase with an anticipated Opening Year of 2024. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown. The on-site Project-related noise sources are expected to include: loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hours daily for seven days per week.





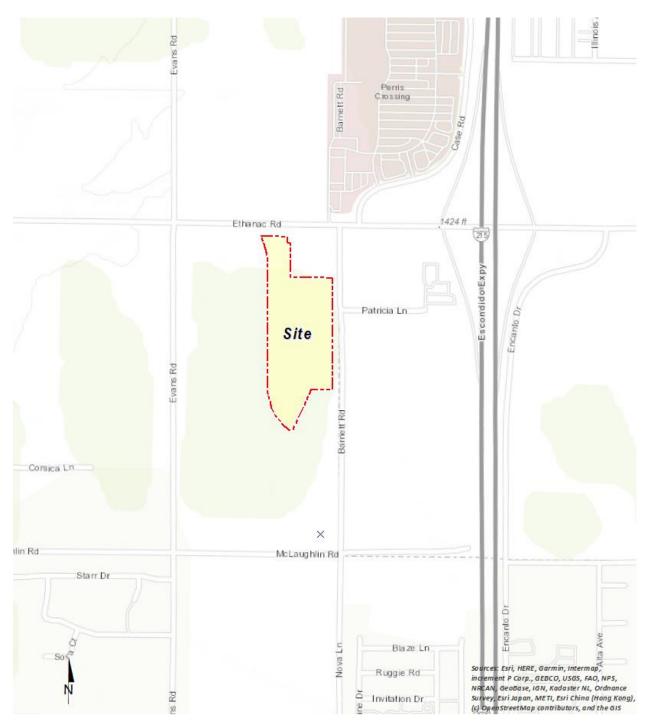
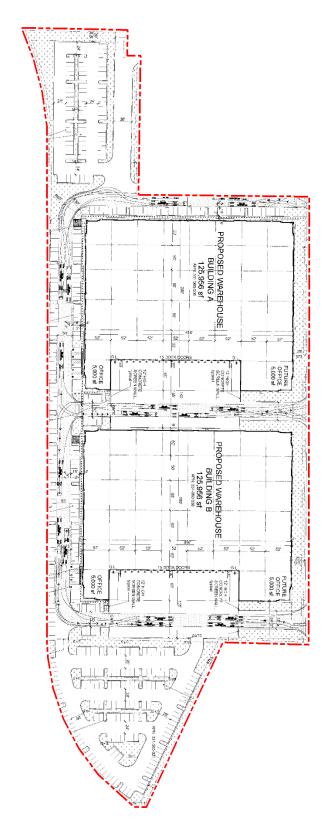


EXHIBIT 1-A: LOCATION MAP



EXHIBIT 1-B: 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). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

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

EXHIBIT 2-A: TYPICAL NOISE LEVELS

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

2.1 RANGE OF NOISE

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



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

2.2 NOISE DESCRIPTORS

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

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

2.3 SOUND PROPAGATION

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

2.3.1 GEOMETRIC SPREADING

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

2.3.2 GROUND ABSORPTION

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



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

2.3.3 ATMOSPHERIC EFFECTS

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

2.3.4 SHIELDING

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

2.4 NOISE CONTROL

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

2.5 Noise Barrier Attenuation

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



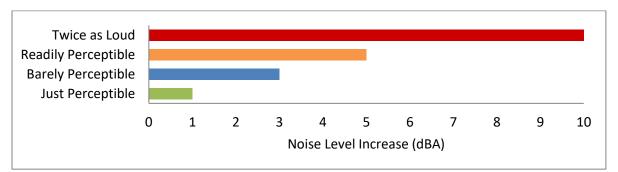
2.6 LAND USE COMPATIBILITY WITH NOISE

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

2.7 COMMUNITY RESPONSE TO NOISE

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

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







2.8 VIBRATION

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

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

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



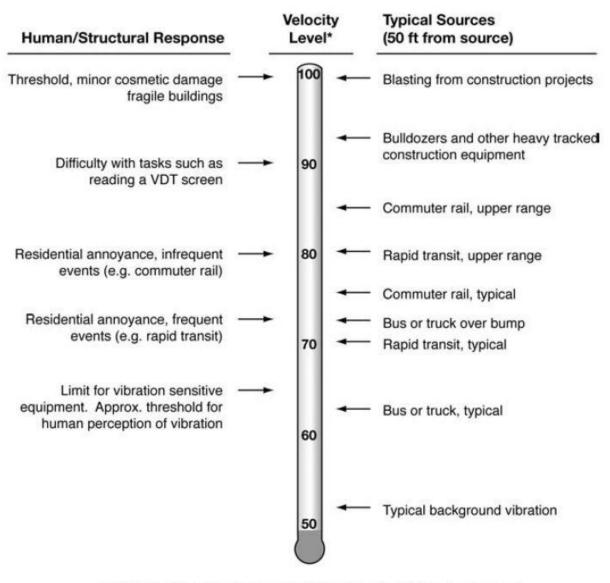


EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION

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

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



3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

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

3.2 CITY OF MENIFEE GENERAL PLAN NOISE ELEMENT

The City of Menifee has adopted a Noise Element of the General Plan to control and abate environmental noise, and to protect the citizens of City of Menifee from excessive exposure to noise (10). The Noise Element specifies the maximum allowable unmitigated exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports and railroads. In addition, the Noise Element identifies several polices to minimize the impacts of excessive noise levels throughout the community and establishes noise level requirements for all land uses. To protect City of Menifee residents from excessive noise, the Noise Element contains the following goal related to the Project:

N-1 Noise-sensitive land uses are protected from excessive noise and vibration exposure.

The noise policies specified in the City of Menifee Noise Element provide the guidelines necessary to satisfy this goal. Policy N-1.2 states that new developments are required to *comply with the noise standards of local, regional, and state building code regulations, including but not limited to the city's Municipal Code, Title 24 of the California Code of Regulations, the California Green Building Code, and subdivision and development codes.* In addition, the Noise Element provides Policy N-1.11 to *discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation* (10).



3.2.1 LAND USE COMPATIBILITY

The noise criteria identified in the City of Menifee Noise Element are guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the city with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels. Per the City's *Noise Element Background Document and Definitions, Land Use Compatibility for Community Noise Environments* (Table N-b3), non-noise sensitive land use is considered *normally acceptable* with noise levels up to 70 dBA CNEL. (10)

Land Uses		CNEL (dBA)					
		5 60	65	70	75	80	
Residential-Low Density Single Family, Duplex, Mobile Homes							
Residential- Multiple Family							
Transient Lodging, Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Businesses, Commercial and Professional							
Industrial, Manufacturing, Utilities, Agricultural							
Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features included in the design. Conventional	New of disco analys made design Clear New of	uraged. If sis of the and need n. I y Unacc	ion or de f new col noise re ded noise eptable: ion or de	evelopmen nstruction duction r e insulatio	nt should n does pro equiremen on feature nt general	oceed, a c nts must l s included	letailed be d in the

EXHIBIT 3-A: LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Source: California Office of Noise Control. Guidelines for the Preparation and Content of Noise Elements of the General Plan. February 1976. Adapted from the US EPA Office of Noise Abatement Control, Washington D.C. Community Noise. Prepared by Wyle Laboratories. December 1971.

Source: City of Menifee General Plan, Noise Background Document and Definitions, Table N-b3.

supply systems or air conditioning will normally

suffice

3.3 OPERATIONAL NOISE STANDARDS

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

The City of Menifee Development Code, Chapter 9.215 Noise Control Regulations, Section 9.215.060 Table 9.215.060-1 establishes the permissible noise level that may intrude into a neighbor's property. The Development Code establishes the exterior noise level criteria for noise-sensitive residential properties affected by stationary noise sources. For residential properties, the exterior noise level shall not exceed 65 dBA L_{eq} during daytime hours (7:00 a.m. to 10:00 p.m.) and shall not exceed 45 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). (11) Since existing uses in the Project study area include non-residential, medical/hospital, and school uses, and the City of Menifee does not identify exterior noise level standards specific to these uses, the residential exterior noise level limits are applied to all noise-sensitive receiver locations in the Project study area. The City of Menifee Development Code noise regulations are included in Appendix 3.1.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

Landling	Exterior Noise Level Standards (dBA Leq) ³			
Land Use	Daytime	Nighttime		
Residential	65	45		
	Land Use Residential	Land Use Daytime		

¹ City of Menifee Development Code, Section 9.215.060 (Appendix 3.1).

² L_{eq} represents a steady state sound level containing the same total energy as a time varying signal over a given period.

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

3.4 CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the City of Menifee has established limits to the hours of operation. Section 9.215.060(C) of the City's Development Code indicates that private construction projects, located within one-quarter of a mile from an occupied residence, are considered exempt from the Development Code noise standards if they occur within the permitted hours of 6:30 a.m. and 7:00 p.m., with no activity allowed on Sundays and nationally recognized holidays (11). However, neither the City of Menifee General Plan Noise Element 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 permanent increase in ambient noise levels*. 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 VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration (8). To analyze vibration impacts originating from the operation and construction of the Ethanac and Barnett Warehouse, vibration-generating activities are appropriately evaluated against standards established under a City's Municipal Code, if such standards exist. However, the City of Menifee does not identify specific vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (12 p. 38) Table 19, vibration damage are used in this noise study to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

3.6 PERRIS VALLEY AIRPORT (PV)

The Perris Valley Airport (PV) is located approximately 1.6 miles southeast of the Project Site. This places the Project site outside the Perris Valley Airport Influence Area and is not subject to the *Riverside County Airport Land Use Compatibility Plan Policy Document* (RC ALUCP). The RC ALUCP outlines policies for determining the land use compatibility planning in the vicinity of airports throughout Riverside County. (13)

The noise contour boundaries used to determine the potential aircraft-related noise impacts at the Project site are found on Map PV-3 of the RC ALUCP. As shown on Exhibit 3-B, the Project site is located outside the 55 dBA CNEL noise level contour boundaries and is considered *clearly acceptable*. Therefore, based on the (RC ALUCP) compatibility criteria, *the activities associated with the specified land use can be carried out with essentially no interference from the noise exposure*.



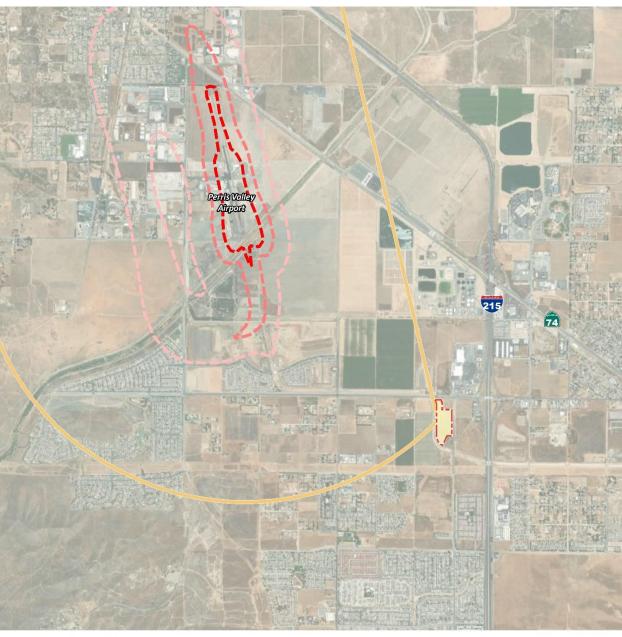


EXHIBIT 3-B: PERRIS VALLEY AIRPORT (PV) NOISE CONTOURS



Project Site Boundary
Airport Influence Area

60 dBA CNEL Noise Contour 60 dBA CNEL Noise Contour 65 dBA CNEL Noise Contour Source: Riverside County Airport Land Use Compatibility Plan Policy Document (July 2010)

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4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the Guidelines for Implementation 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 the 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 exceeds the previously existing ambient noise level, the less acceptable the new noise 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 are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L_{eq}).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders the 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 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 City of Menifee General Plan Noise Element, Table N-b3, *Land Use Compatibility for Community Noise Environments* was used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise level for non-noise-sensitive land uses is 70 dBA CNEL. (17) 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 City of Menifee General Plan Noise Element, Table N-b3, *Land Use Compatibility for Community Noise Environments normally acceptable* 70 dBA CNEL exterior noise level criteria.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.4, the vibration impacts originating from the construction of Ethanac and Barnett Warehouse, vibration-generating activities are appropriately evaluated using the Caltrans vibration damage thresholds to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).





4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

The closest airport which would require additional noise analysis under CEQA Appendix G Guideline C is the Perris Valley Airport located approximately 1.6 miles southeast of the Project site. As previously described in Section 3.6, the Project site is located outside the PV Airport Influence Area and the 55 dBA CNEL noise level contours. Therefore, the potential impacts under CEQA Appendix G Guideline C, are *less than significant* and are not further analyzed in this noise study.

4.4 SIGNIFICANCE CRITERIA SUMMARY

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

Analusia	Receiving	(condition(c)	Significan	ce Criteria	
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		If ambient is < 60 dBA Leq ¹	≥ 5 dBA L _{eq} Pr	oject increase	
	Noise- Sensitive ¹	If ambient is 60 - 65 dBA Leq ¹	≥ 3 dBA L _{eq} Project increase		
Off-Site	Sensitive	If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA L _{eq} Project increase		
	Non- Noise-Sensitive ²	if ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase		
	Noise- Sensitive ¹	Exterior Noise Level Limit ³	65 dBA L _{eq}	45 dBA L _{eq}	
Operational		If ambient is < 60 dBA Leq ¹	\geq 5 dBA L _{eq} Project increase		
Operational		If ambient is 60 - 65 dBA Leq ¹	≥ 3 dBA L _{eq} Pr	oject increase	
		If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA L _{eq} P	roject increase	
			f 6:30 a.m. and 7:00 p	0.m. ⁴	
Construction	Noise- Sensitive ¹	Noise Level Threshold ⁵	80 dBA L _{eq}	n/a	
	Schättive	Vibration Level Threshold ⁶	0.3 PPV	(in/sec)	

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

¹ FICON, 1992.

² City of Menifee General Plan Noise Element, Table N-b3.

 $^{\rm 3}$ City of Menifee Development Code, Section 9.215.060 (Appendix 3.1).

 4 Section 9.215.060(C) of the City of Menifee Municipal Code (Appendix 3.1).

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

⁶ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19.

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



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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at five locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, March 23th, 2022. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (18)

5.2 NOISE MEASUREMENT LOCATIONS

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

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (8) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels



and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

5.3 NOISE MEASUREMENT RESULTS

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

Location ¹	Description	Energy Noise (dBA	Level
		Daytime	Nighttime
L1	Located west of the Project site near single-family residence at 26038 Hull Street.	48.1	49.8
L2	Located southeast of the Project site near single-family residence at 26515 Alta Avenue.	61.7	59.9
L3	Located southeast of the Project site near single-family residence at 26635 Summer Sunshine Drive.	47.8	47.2
L4	Located southwest of the Project site near single-family residence at 26350 Starr Drive.	53.6	54.2
L5	Located west of the Project site near single-family residence at 26340 Corsica Lane.	51.6	53.8

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

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

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

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

Table 5-1 provides the equivalent noise levels used to describe the daytime, evening, 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 of the daytime and nighttime hours.





EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

LEGEND: N 🛆 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 traffic noise environment. Consistent with the City of Menifee *Land Use Compatibility for Community Noise Environments* (see Exhibit 3-A), all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (19) 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. (20) 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. (21)

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 seven off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Menifee General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on *Ethanac and Barnett Warehouse Traffic Analysis*, prepared by EPD Solutions, Inc. (22)

- Existing Conditions
- Existing Conditions plus Project
- Opening Year Cumulative Without Project (2024) Conditions
- Opening Year Cumulative With Project (2024) Conditions

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



ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Murrieta Rd.	n/o Ethanac Rd.	Secondary Arterial	Sensitive	50'	45
2	Murrieta Rd.	s/o Ethanac Rd.	Secondary Arterial	Sensitive	50'	45
3	Barnett Rd.	s/o Ethanac Rd.	Secondary Arterial	Non-Sensitive	50'	45
4	Ethanac Rd.	w/o Murrieta Rd.	Expressway	Sensitive	53'	55
5	Ethanac Rd.	e/o Murrieta Rd.	Expressway	Sensitive	53'	55
6	Ethanac Rd.	e/o Barnett Rd.	Expressway	Non-Sensitive	53'	55
7	Ethanac Rd.	e/o I-215 NB Ramps	Expressway	Non-Sensitive	53'	55

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

¹ City of Menifee General Plan Circulation Element.

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

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

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix.

Table 6-3 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 *Ethanac and Barnett Warehouse 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 6-6 show the vehicle mixes used for the with Project traffic scenarios.

			Average Daily Traffic Volumes ¹				
ID	Roadway	Segment	Existing Opening Yea		Opening Year Cu	Cumulative (2024)	
	nouunuy	<u>-</u>	Without Project	With Project	Without Project	With Project	
1	Murrieta Rd.	n/o Ethanac Rd.	3,350	3,368	3,540	3,558	
2	Murrieta Rd.	s/o Ethanac Rd.	7,650	7,705	13,450	13,505	
3	Barnett Rd.	s/o Ethanac Rd.	2,120	2,517	2,210	2,607	
4	Ethanac Rd.	w/o Murrieta Rd.	13,040	13,047	26,040	26,047	
5	Ethanac Rd.	e/o Murrieta Rd.	14,860	14,941	32,870	32,951	
6	Ethanac Rd.	e/o Barnett Rd.	14,490	14,905	34,020	34,435	

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

¹ Barnett & Ethanac Warehouse Traffic Analysis, EPD Solutions, Inc.



		Time of Day Splits ¹	Total of Time of	
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	75.55%	13.96%	10.49%	100.00%
Medium Trucks	48.92%	2.17%	48.91%	100.00%
Heavy Trucks	47.30%	5.40%	47.30%	100.00%

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

¹ County of Riverside Office of Industrial Hygiene. Values rounded to the nearest one-hundredth. Vehicle mix percentage values rounded to the nearest one-hundredth. "Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-4: WITHOUT PROJECT VEHICLE MIX

Classification		Total		
Classification	Autos	Medium Trucks	Heavy Trucks	TOLAI
All Segments	97.42%	1.84%	0.74%	100.00%

County of Riverside Office of Industrial Hygiene. Values rounded to the nearest one-hundredth. Vehicle mix percentage values rounded to the nearest one-hundredth.

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

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

				With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²	
1	Murrieta Rd.	n/o Ethanac Rd.	97.43%	1.83%	0.74%	100.00%	
2	Murrieta Rd.	s/o Ethanac Rd.	97.44%	1.83%	0.73%	100.00%	
3	Barnett Rd.	s/o Ethanac Rd.	92.30%	2.49%	5.21%	100.00%	
4	Ethanac Rd.	w/o Murrieta Rd.	97.42%	1.84%	0.74%	100.00%	
5	Ethanac Rd.	e/o Murrieta Rd.	97.43%	1.83%	0.74%	100.00%	
6	Ethanac Rd.	e/o Barnett Rd.	96.56%	1.95%	1.49%	100.00%	
7	Ethanac Rd.	e/o I-215 NB Ramps	97.42%	1.84%	0.74%	100.00%	

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



		Segment	With Project ¹				
ID	Roadway		Autos	Medium Trucks	Heavy Trucks	Total ²	
1	Murrieta Rd.	n/o Ethanac Rd.	97.43%	1.83%	0.74%	100.00%	
2	Murrieta Rd.	s/o Ethanac Rd.	97.43%	1.83%	0.74%	100.00%	
3	Barnett Rd.	s/o Ethanac Rd.	92.48%	2.47%	5.05%	100.00%	
4	Ethanac Rd.	w/o Murrieta Rd.	97.42%	1.84%	0.74%	100.00%	
5	Ethanac Rd.	e/o Murrieta Rd.	97.43%	1.84%	0.74%	100.00%	
6	Ethanac Rd.	e/o Barnett Rd.	97.05%	1.89%	1.07%	100.00%	
7	Ethanac Rd.	e/o I-215 NB Ramps	97.42%	1.84%	0.74%	100.00%	

TABLE 6-6: OPENING YEAR CUMULATIVE (2024) WITH PROJECT VEHICLE MIX

 $^{1}\,\mbox{Total}$ 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 *Ethanac and Barnett Warehouse Traffic Analysis* prepared by EPD Solutions, Inc. (22) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 to 7-5 present a summary of the exterior traffic noise levels for each traffic condition.

	Deed	Company	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	Road	Road Segment Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL		
1	Murrieta Rd.	n/o Ethanac Rd.	Sensitive	64.4	RW	RW	99	
2	Murrieta Rd.	s/o Ethanac Rd.	Sensitive	68.0	RW	79	171	
3	Barnett Rd.	s/o Ethanac Rd.	Non-Sensitive	62.4	RW	RW	73	
4	Ethanac Rd.	w/o Murrieta Rd.	Sensitive	73.8	94	204	439	
5	Ethanac Rd.	e/o Murrieta Rd.	Sensitive	74.3	103	222	479	
6	Ethanac Rd.	e/o Barnett Rd.	Non-Sensitive	74.2	101	218	471	
7	Ethanac Rd.	e/o I-215 NB Ramps	Non-Sensitive	73.7	93	201	433	

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

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 the receiving adjacent land use.

 $"\mathsf{RW}"$ = Location of the respective noise contour falls within the right-of-way of the road.



10	D Road	Comment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Murrieta Rd.	n/o Ethanac Rd.	Sensitive	64.4	RW	RW	99	
2	Murrieta Rd.	s/o Ethanac Rd.	Sensitive	68.0	RW	80	172	
3	Barnett Rd.	s/o Ethanac Rd.	Non-Sensitive	67.8	RW	77	166	
4	Ethanac Rd.	w/o Murrieta Rd.	Sensitive	73.8	95	204	439	
5	Ethanac Rd.	e/o Murrieta Rd.	Sensitive	74.3	103	223	479	
6	Ethanac Rd.	e/o Barnett Rd.	Non-Sensitive	75.4	121	261	563	
7	Ethanac Rd.	e/o I-215 NB Ramps	Non-Sensitive	73.7	93 201		433	

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

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 the receiving adjacent land use.

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

TABLE 7-3: OPENING YEAR CUMULATIVE (2024) WITHOUT PROJECT CONTOURS

ID	Road	Comment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
		Segment	Land Use ¹	Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Murrieta Rd.	n/o Ethanac Rd.	Sensitive	64.7	RW	RW	102	
2	Murrieta Rd.	s/o Ethanac Rd.	Sensitive	70.5	54	116	249	
3	Barnett Rd.	s/o Ethanac Rd.	Non-Sensitive	62.6	RW	RW	75	
4	Ethanac Rd.	w/o Murrieta Rd.	Sensitive	76.8	150	323	696	
5	Ethanac Rd.	e/o Murrieta Rd.	Sensitive	77.8	175	377	812	
6	Ethanac Rd.	e/o Barnett Rd.	Non-Sensitive	77.9	179	386	831	
7	Ethanac Rd.	e/o I-215 NB Ramps	Non-Sensitive	75.0	114	246	531	

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 the receiving adjacent land use.

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



ID	Road	Comment	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
	коад	Segment		Land Use (dBA) ²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Murrieta Rd.	n/o Ethanac Rd.	Sensitive	64.7	RW	RW	103	
2	Murrieta Rd.	s/o Ethanac Rd.	Sensitive	70.5	54	116	250	
3	Barnett Rd.	s/o Ethanac Rd.	Non-Sensitive	67.9	RW	78	168	
4	Ethanac Rd.	w/o Murrieta Rd.	Sensitive	76.8	150	323	696	
5	Ethanac Rd.	e/o Murrieta Rd.	Sensitive	77.8	175	377	813	
6	Ethanac Rd.	e/o Barnett Rd.	Non-Sensitive	78.5	194	419	903	
7	Ethanac Rd.	e/o I-215 NB Ramps	Non-Sensitive	75.0	114 246		531	

TABLE 7-4: OPENING YEAR CUMULATIVE (2024) WITH PROJECT CONTOURS

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 the receiving adjacent land use.

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

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report 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 2024 conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 62.4 to 74.3 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 64.4 to 75.4 dBA CNEL. Table 7-5 shows that the Project off-site traffic noise level increases range from 0.0 to 5.4 dBA CNEL on the study area roadway segments. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Project-related traffic.

7.3 OPENING YEAR CUMULATIVE (2024) TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year Cumulative (2024) without Project conditions CNEL noise levels. The Opening Year Cumulative (2024) without Project exterior noise levels range from 62.6 to 77.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the Opening Year Cumulative (2024) with Project conditions will range from 64.7 to 78.5 dBA CNEL. Table 7-6 shows that the Project off-site traffic noise level increases range from 0.0 to 5.3 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 increases on receiving land uses due to the Project-related traffic.



ID	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Murrieta Rd.	n/o Ethanac Rd.	Sensitive	64.4	64.4	0.0	3.0	No
2	Murrieta Rd.	s/o Ethanac Rd.	Sensitive	68.0	68.0	0.0	1.5	No
3	Barnett Rd.	s/o Ethanac Rd.	Non-Sensitive	62.4	67.8	5.4	n/a	No
4	Ethanac Rd.	w/o Murrieta Rd.	Sensitive	73.8	73.8	0.0	1.5	No
5	Ethanac Rd.	e/o Murrieta Rd.	Sensitive	74.3	74.3	0.0	1.5	No
6	Ethanac Rd.	e/o Barnett Rd.	Non-Sensitive	74.2 75.4		1.2	3.0	No
7	Ethanac Rd.	e/o I-215 NB Ramps	Non-Sensitive	73.7	73.7	0.0	3.0	No

 TABLE 7-5:
 EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

¹Based 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)?



ID	D Road Segment	Segment	Receiving		EL at Recei nd Use (dB	•	Incremental Noise Level Increase Threshold ²	
			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Murrieta Rd.	n/o Ethanac Rd.	Sensitive	64.7	64.7	0.0	3.0	No
2	Murrieta Rd.	s/o Ethanac Rd.	Sensitive	70.5	70.5	0.0	1.5	No
3	Barnett Rd.	s/o Ethanac Rd.	Non-Sensitive	62.6	67.9	5.3	n/a	No
4	Ethanac Rd.	w/o Murrieta Rd.	Sensitive	76.8	76.8	0.0	1.5	No
5	Ethanac Rd.	e/o Murrieta Rd.	Sensitive	77.8	77.8	0.0	1.5	No
6	Ethanac Rd.	e/o Barnett Rd.	Non-Sensitive	77.9 78.5 0		0.6	3.0	No
7	Ethanac Rd.	e/o I-215 NB Ramps	Non-Sensitive	75.0	75.0	0.0	3.0	No

TABLE 7-6: OPENING YEAR CUMULATIVE (2024) WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

¹Based 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)?



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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, outpatient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, 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. 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 26038 Hull Street, approximately 1,816 feet west of the Project site. Receiver R1 is placed in the private outdoor living areas (backyards) 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 26515 Alta Avenue, approximately 2,435 feet southeast of the Project site. Receiver R2 is placed in the private outdoor living areas (backyards) 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 26635 Summer Sunshine Drive, approximately 1,710 feet southeast of the Project site. Receiver R3 is placed in the private outdoor living areas (backyards) 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 nearest noise sensitive receiver location within the planned DR Horton residential project located approximately 1,092 feet south of the Project site. Receiver R4 is placed in the private outdoor living areas (backyards) facing the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R5: Location R5 represents the existing noise sensitive residence at 26458 Starr Drive, approximately 1,535 feet southwest of the Project site. Receiver R6 is placed in the private outdoor living areas (backyards) facing the Project site. A 24-hour noise



measurement was taken near this location, L4, to describe the existing ambient noise environment.

R6: Location R6 represents the existing noise sensitive residence at 26340 Corsica Lane, approximately 1,445 feet west of the Project site. Receiver R6 is placed in the private outdoor living areas (backyards) facing the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.



EXHIBIT 8-A: RECEIVER LOCATIONS

Site Boundary

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

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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 Ethanac and Barnett Warehouse Project. Exhibit 9-A identifies the noise source locations used to assess the operational noise levels.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. 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, trash enclosure activity, parking lot vehicle movements, 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 worst-case noise environment with the loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements all operating at the same time. These sources of noise activity will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precision sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (18)



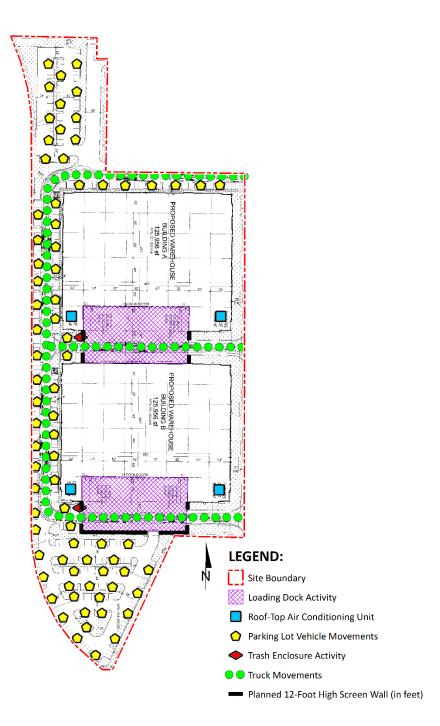


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS



Noise Source ¹	Noise Source	Min./ Hour ²		Reference Noise Level	Sound Power
Noise Source-	Height (Feet)	Day	Night	(dBA L _{eq}) @ 50 Feet	Level (dBA) ³
Loading Dock Activity	8'	60	60	65.7	111.5
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	60	60	57.3	89.0
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1
Truck Movements	8'	60	60	59.8	93.2

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

¹ As measured by Urban Crossroads. Inc.

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

³ Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical outdoor operational noise activities associated with the Project. This includes truck idling, deliveries, backup alarms, trailer docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background operation activities. The reference noise level measurement was taken in the center of the loading dock activity area and represents multiple concurrent noise sources resulting in a combined noise level of 65.7 dBA L_{ea} at a uniform distance of 50 feet. Specifically, the reference noise level measurement represents one truck located approximately 30 feet from the noise level meter with another truck passing by to park roughly 20 feet away, both with their engines idling. Throughout the reference noise level measurement, a separate docked and running reefer truck was located approximately 50 feet east of the measurement location. Additional background noise sources included truck pass-by noise, truck drivers talking to each other next to docked trucks, and air brake release noise when trucks parked.

9.2.3 ROOF-TOP AIR CONDITIONING UNITS

The noise level measurements describe a single mechanical roof-top air conditioning unit. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. At the uniform reference distance of 50 feet, the reference noise levels are 57.2 dBA Lea. 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 building.



9.2.4 TRASH ENCLOSURE ACTIVITY

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

9.2.5 PARKING LOT VEHICLE MOVEMENTS

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

9.2.6 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represents multiple heavy trucks entering and exiting the outdoor loading dock area producing a reference noise level of 59.8 dBA L_{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 (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and

other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the CadnaA noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

9.4 **PROJECT OPERATIONAL NOISE LEVELS**

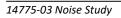
Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, and truck movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. 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 38.4 to 44.7 dBA L_{eq} .

Noise Source ¹	Operati	Operational Noise Levels by Receiver Location (dBA Leq)							
Noise Source-	R1	R2	R3	R4	R5	R6			
Loading Dock Activity	37.9	38.1	39.3	42.3	40.6	44.3			
Roof-Top Air Conditioning Units	23.2	21.8	23.3	25.6	24.5	25.2			
Trash Enclosure Activity	19.6	0.3	14.6	21.9	20.6	23.9			
Parking Lot Vehicle Movements	29.7	23.2	27.0	31.3	30.1	31.4			
Truck Movements	25.8	18.3	20.2	24.6	24.0	26.6			
Total (All Noise Sources)	38.9	38.4	39.7	42.8	41.2	44.7			

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

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

Tables 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 38.3 to 44.7 dBA L_{eq} . The minor 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.





Noise Source ¹	Operational Noise Levels by Receiver Location (dBA Leq)							
Noise Source-	R1	R2	R3	R4	R5	R6		
Loading Dock Activity	37.9	38.1	39.3	42.3	40.6	44.3		
Roof-Top Air Conditioning Units	20.8	19.4	20.9	23.2	22.1	22.8		
Trash Enclosure Activity	19.6	0.3	14.6	21.9	20.6	23.9		
Parking Lot Vehicle Movements	29.7	23.2	27.0	31.3	30.1	31.4		
Truck Movements	25.8	18.3	20.2	24.6	24.0	26.6		
Total (All Noise Sources)	38.9	38.3	39.7	42.8	41.2	44.7		

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

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 City of Menifee exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with Ethanac and Barnett Warehouse Project will satisfy the City of Menifee daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

Receiver Location ¹		perational s (dBA Leq) ²	Noise Leve (dBA	l Standards Leq) ³	Noise Level Standards Exceeded? ⁴		
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	
R1	38.9	38.9	65.0	45.0	No	No	
R2	38.4	38.3	65.0	45.0	No	No	
R3	39.7	39.7	65.0	45.0	No	No	
R4	42.8	42.8	65.0	45.0	No	No	
R5	R5 41.2 41.2		65.0	45.0	No	No	
R6	44.7	44.7	65.0	45.0	No	No	

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

 $^{\rm 1}$ See Exhibit 8-A for the receiver locations.

² Proposed Project operational noise level calculations are included in Appendix 9-1.

³ City of Menifee Development Code, Chapter 9.215 Noise Control Regulations, Table 9.215.060-1 (Appendix 3-1).

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

"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 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 potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels



cannot be combined using standard arithmetic equations. (2) Instead, they must be logarithmically added using the following base equation:

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. 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 Tables 9-5, the Project will generate a daytime operational noise level increases ranging from 0.0 to 1.2 dBA L_{eq} at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increases ranging from 0.0 to 1.3 dBA L_{eq} at the nearest receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented in Table 4-1, and, therefore, the increases at the sensitive receiver locations will be *less than significant*.

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	38.9	L1	48.1	48.6	0.5	5.0	No
R2	38.4	L2	61.7	61.7	0.0	5.0	No
R3	39.7	L3	47.8	48.4	0.6	5.0	No
R4	42.8	L3	47.8	49.0	1.2	5.0	No
R5	41.2	L4	53.6	53.8	0.2	5.0	No
R6	44.7	L5	51.6	52.4	0.8	5.0	No

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

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.



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	38.9	L1	49.8	50.1	0.3	5.0	No
R2	38.3	L2	59.9	59.9	0.0	5.0	No
R3	39.7	L3	47.2	47.9	0.7	5.0	No
R4	42.8	L3	47.2	48.5	1.3	5.0	No
R5	41.2	L4	54.2	54.4	0.2	5.0	No
R6	44.7	L5	53.8	54.3	0.5	5.0	No

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

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.

 $^{\rm 4}$ Observed night time ambient noise levels as shown on Table 5-1.

 $^{\rm 5}$ 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 ANALYSIS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction activity boundaries in relation to the nearest sensitive receiver locations previously described in Section 6. Section 9.215.060(C) of the City's Development Code indicates that private construction projects, located within one-quarter of a mile from an occupied residence, are considered exempt from the Development Code noise standards if they occur within the permitted hours of 6:30 a.m. and 7:00 p.m., with no activity allowed on Sundays and nationally recognized holidays (11). In addition, since neither the City of Menifee General Plan or Development Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes. 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. 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).

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. (23) 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

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10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming they operate at the same time. As shown on Table 10-2, the construction noise levels are expected to range from 42.0 to 52.9 dBA L_{eq} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

Construction Stage	Reference Construction Activity	Reference Noise Level @ 50 Feet (dBA L _{eq}) ¹	Combined Noise Level (dBA L _{eq}) ²	Combined Sound Power Level (PWL) ³		
C 11	Crawler Tractors	78				
Site Preparation	Hauling Trucks	72	80	112		
reputation	Rubber Tired Dozers	75				
	Graders	81				
Grading	Excavators	77	83	115		
	Compactors	76				
	Cranes	73		113		
Building Construction	Tractors	80	81			
construction	Welders	70				
	Pavers	74				
Paving	Paving Equipment	82	83	115		
	Rollers	73				
	Cranes	73				
Architectural Coating	Air Compressors	74	77	109		
Coating	Generator Sets	70				

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

¹ FHWA Roadway Construction Noise Model (RCNM).

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

³ Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calibrated using the CadnaA noise model at the reference distance to the noise source.



Receiver Location ¹	Construction Noise Levels (dBA L _{eq})												
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²							
R1	48.1	51.1	49.1	51.1	45.1	51.1							
R2	45.0	48.0	46.0	48.0	42.0	48.0							
R3	47.0	50.0	48.0	50.0	44.0	50.0							
R4	49.9	52.9	50.9	52.9	46.9	52.9							
R5	48.2	51.2	49.2	51.2	45.2	51.2							
R6	49.7	52.7	50.7	52.7	46.7	52.7							

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

¹Noise receiver locations are shown on Exhibit 10-A.

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

10.4 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 not exceed the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 8-3. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

Receiver Location ¹	Construction Noise Levels (dBA L _{eq})											
	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴									
R1	51.1	80	No									
R2	48.0	80	No									
R3	50.0	80	No									
R4	52.9	80	No									
R5	51.2	80	No									
R6	52.7	80	No									

¹Noise receiver locations are shown on Exhibit 10-A.

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?



10.5 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities may occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support 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 as shown on Exhibit 10-B. Since the nighttime concrete pours will take place outside the permitted City of Menifee Development Code, Section 9.215.060(C) of the City of Menifee Development Code indicates that construction activity is restricted to the hours within 6:30 a.m. and 7:00 p.m. with no activity allowed on Sundays and nationally recognized holidays. The Project Applicant will be required to obtain authorization for nighttime work from the City of Menifee. Any nighttime construction noise activities shall satisfy the noise limits outlined in Table 4-1.

10.5.1 NIGHTTIME CONCRETE POUR REFERENCE NOISE LEVEL MEASUREMENTS

To estimate the noise levels due to nighttime concrete pour activities, sample reference noise level measurements were taken during a nighttime concrete pour 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 Ethanac and Barnett Warehouse, this analysis relies on reference sound pressure level of 67.7 dBA L_{eq} at 50 feet representing a sound power level of 100.3 dBA L_w . While the Project noise levels will depend on the actual duration of activities and specific equipment fleet in use at the time of construction, the reference sound power level of 100.3 dBA L_w is used to describe the expected Project nighttime concrete pour noise activities.

14775-03 Noise Study





EXHIBIT 10-B: NIGHTTIME CONCRETE POUR NOISE SOURCE AND RECEIVER LOCATIONS



10.5.2 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 34.8 to 39.5 dBA L_{eq} and will satisfy the City of Menifee stationarysource nighttime 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.

Desertions	Construction Noise Levels (dBA L _{eq})										
Receiver Location ¹	Paving Construction ²	Nighttime Threshold ³	Threshold Exceeded? ⁴								
R1	37.4	45	No								
R2	34.8	45	No								
R3	36.7	45	No								
R4	39.5	45	No								
R5	37.8	45	No								
R6	39.2	45	No								

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

¹Noise receiver locations are shown on Exhibit 10-B.

² Paving construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations.

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

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

10.6 CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. 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 for human response (annoyance) and building damage using the following vibration assessment methods defined by the FTA. To describe the vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$



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

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 1,092 to 2,435 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.001 PPV in/sec. Based on maximum acceptable continuous vibration threshold of 0.3 PPV in/se), 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.

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

Location ¹	Distance to		Typical C	Thresholds	Thresholds				
	Const. Activity (Feet) ²	Small bulldozer	Jack- hammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level	PPV (in/sec)⁴	Exceeded? ⁵
R1	1,816'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R2	2,435'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R3	1,710'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R4	1,092'	0.000	0.000	0.000	0.000	0.001	0.001	0.3	No
R5	1,535'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R6	1,445'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No

 TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

¹Receiver locations are shown on Exhibit 10-A.

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

³ Based on the Vibration Source Levels of Construction Equipment (Table 10-5).

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

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

"PPV" = Peak Particle Velocity



11 REFERENCES

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- 2. California Department of Transportation Environmental Program. *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
- 3. Environmental Protection Agency Office of Noise Abatement and Control. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974. EPA/ONAC 550/9/74-004.
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- 21. California Department of Transportation. *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report*. June 1995. FHWA/CA/TL-95/23.
- 22. EPD Soluitons, Inc. Barnett and Ethanac Traffic Analysis.
- 23. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning. *FHWA Roadway Construction Noise Model*. January, 2006.



12 CERTIFICATIONS

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

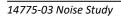
PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009
AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012
PTP – Professional Transportation Planner • May, 2007 – May, 2013
INCE – Institute of Noise Control Engineering • March, 2004

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:

CITY OF MENIFEE DEVELOPMENT CODE



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Title 9: Planning and Zoning > Article 4: Site Development Regulations and Performance Standards > Chapter 9.215 Performance Standards > 9.215.060 Noise Control Regulations

TITLE 9: PLANNING AND ZONING

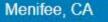
ARTICLE 4: SITE DEVELOPMENT REGULATIONS AND PERFORMANCE STANDARDS

Chapter 9.215 Performance Standards

9.215.060 Noise Control Regulations

- A. Intent. At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of city residents and degrade their quality of life. Pursuant to its police power, the City Council hereby declares that noise shall be regulated in the manner described herein. This chapter is intended to establish citywide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act (CEQA), and no such thresholds are hereby established.
- B. General Exemptions. Sound emanating from the following sources are exempt from the provisions of this chapter:
 - 1. Facilities owned or operated by or for a governmental agency.
 - 2. Capital improvement projects of a governmental agency.
 - 3. The maintenance or repair of public properties.
 - 4. Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile.
 - 5. Public and private schools and school-sponsored activities.
 - 6. Agricultural operations on land designated Agriculture in the City's General Plan, or land zoned AG (Agriculture), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile.
 - 7. Wind energy conversion systems (WECS), provided such systems comply with the noise provisions of the Menifee Municipal Code.
 - 8. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 7:00 a.m. and 8:00 p.m.
 - Motor vehicles (factory equipped), other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems.
- 10. Heating and air conditioning equipment in proper repair.
- 11. Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety and welfare.
- 12. The discharge of firearms consistent with all state laws.
- 13. Bars, nightclubs, cocktail lounges, cabarets, billiards/pool halls, restaurants, drive-ins and eating establishments that have a Conditional Use Permit for on-site alcohol sales and live entertainment (interior noise). Outdoor patios and similar areas shall be subject to the requirements of this chapter, unless conditioned otherwise under Conditional Use Permit review.
- C. Construction-Related Exemptions. Exceptions may be requested from the standards set forth in Section 9.215.060 of this chapter and may be characterized as construction-related, single event or continuous events exceptions.
 - Private construction projects, with or without a Building Permit, located one-quarter of a mile or more from an inhabited dwelling.
 - 2. Private construction projects, with or without a building permit, located within one-quarter of a mile from an inhabited dwelling, shall be permitted Monday through Saturday, except nationally recognized holidays, 6:30 a.m. to 7:00 p.m., or specified in Section 8.01.010. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the City Building Official or City Engineer.
 - 3. Construction-related exceptions. If construction occurs during off hours or exceeds noise thresholds, an application for a construction-related exception shall be made using the temporary use application provided by the Community Development Director in Chapter 9.110 of this Title. For construction activities on Sunday or nationally recognized holidays, Section 8.01.010 of this Code shall prevail.
- D. General Sound Level Standards. No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior and interior sound level on any other occupied property to exceed the sound level standards set forth in Table 9.215.060-1, Stationary Source Noise Standards.

Table 9.215.060-1 Stationary Source Noise Standards										
Land Use	Interior Standards	Exterior Standards								
10:00 p.m. to 7:00 a.m.	40 L _{eq} (10-minute)	45 L _{eq} (10-minute)								
7:00 a.m. to 10:00 p.m.	55 L _{eq} (10-minute)	65 L _{eg} (10-minute)								



Comprehensive Development Code

Title 9: Planning and Zoning > Article 4: Site Development Regulations and Performance Standards > Chapter 9.215 Performance Standards > 9.215.060 Noise Control Regulations Development Director in Chapter 5:110 or this intel. For construction activities on Sunday or nationally recognized

holidays, Section 8.01.010 of this Code shall prevail.

D. General Sound Level Standards. No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior and interior sound level on any other occupied property to exceed the sound level standards set forth in Table 9.215.060-1, Stationary Source Noise Standards.

Table 9.215.060-1 Stationary Source Noise Standards										
Land Use	Interior Standards	Exterior Standards								
10:00 p.m. to 7:00 a.m.	40 L _{eq} (10-minute)	45 L _{eq} (10-minute)								
7:00 a.m. to 10:00 p.m.	55 L _{eg} (10-minute)	65 L _{eq} (10-minute)								

- E. Sound Level Measurement Methodology. Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the enforcement officials identified in Section 9.215.060.G. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be reverified. Sound level meters and calibration equipment shall be certified annually.
- F. Special Sound Level Measurement Methodology. The general sound level standards set forth in Section 9.215.060.E apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards; failure to comply with these standards constitutes separate violations of this chapter.
 - 1. Motor vehicles.
 - a. Off-highway vehicles.
 - i. No person shall operate an off-highway vehicle unless it is equipped with a USDA-qualified spark arrester and a constantly operating and properly maintained muffler. A muffler is not considered constantly operating and properly maintained if it is equipped with a cutout, bypass or similar device.
 - ii. No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than 96 dBA if the vehicle was manufactured on or after January 1, 1986, or is not more than 101 dBA if the vehicle was manufactured before January 1, 1986. For purposes of this division, emitted noise shall be measured a distance of 20 inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.
 - b. Sound systems. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of 10:00 p.m. and 8:00 a.m. the following morning, such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than 100 feet from the vehicle.
 - 2. Power tools and equipment. No person shall operate any power tools or equipment as specified in Section 8.01.010, such that the power tools or equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools or equipment are audible to the human ear at a distance greater than 100 feet from the power tools or equipment.
 - 3. Audio equipment. No person shall operate any audio equipment, whether portable or not, between the hours of 10:00 p.m. and 8:00 a.m. the following morning such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than 100 feet from the equipment.
 - 4. 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 unless such activities comply with the following requirements. To the extent that these requirements conflict with any conditions of approval attached to an underlying land use permit, these requirements shall control.
 - a. Sound-amplifying equipment or live music is prohibited between the hours of 10:00 p.m. and 8:00 a.m. the following morning on Sunday through Thursday and between the hours of 11:00 p.m. and 8:00 a.m. the following morning on Friday and Saturday.
 - b. Sound emanating from sound-amplifying equipment or live music at any other time shall not be audible to the human ear at a distance greater than 200 feet from the equipment or music.
- G. Duty to Cooperate. No person shall refuse to cooperate with, or obstruct, any peace officer or code enforcement officer when he or she is engaged in the process of enforcing the provisions of this chapter. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this chapter.

.

APPENDIX 5.1:

STUDY AREA PHOTOS



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						24-Ho	ur Noise Le	evel Meas	urement S	ummary						
Date:	Wednesday	, March 23,	2022			: L1 - Located		,	ear single-fa	mily	Meter	: Piccolo II			JN:	14775
Project:	Ethanac an	d Barnett Wa	arehouse		Source	residence at	26038 Hull S	treet.							Analyst:	A. Khan
							Hourly L _{eq} (dBA Readings	(unadjusted)							
05.0	•															
85.0	a															
(80.0 (80) 75.0 70.0																
65 .0																
60.0 ٽــ 255.0 <u>ح</u>																
^ 55.0 1 50.0 0 45.0 40.0		က်ထဲ			54.2	.e 2:5	C	<mark>ν υ</mark>	<u>ה</u> ו		0	o m	<u>m</u> <u>w</u>		<u>N N</u>	<u> </u>
40.0	7 4 1	47.3	49.2	51.8	2	55. 47.6	46.1	49. 48.	- <mark>4</mark> - (44	40.	41.0	45. 49.	- 4	44	46.7
35.0	0 ++	1 2	2	4 5		7 8		0 11	12 1	2 14	1 [1	C 17	10 10	20	1 22	
	0	1 2	3	4 5	6	7 8	9 1	l0 11 Hour Be	12 1 eginning	3 14	15 1	16 17	18 19	20 2	21 22	23
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	46.1	52.0	41.8	51.8	51.5	50.2	49.6	46.5	44.7	42.6	42.3	41.9	46.1	10.0	56.1
	1	47.3	53.3	43.4	53.0	52.6	51.7	50.8	47.8	46.1	44.2	43.9	43.6	47.3	10.0	57.3
Night	2	45.8 49.2	49.7 53.0	43.3 46.7	49.5 52.7	49.2 52.3	48.5 51.7	48.0 51.2	46.3 49.7	45.3 48.6	43.9 47.3	43.6 47.0	43.4 46.8	45.8 49.2	10.0 10.0	55.8 59.2
Night	4	51.8	57.7	40.7	57.3	56.5	55.3	54.5	52.2	50.8	47.3	47.0	40.8	51.8	10.0	61.8
	5	51.7	54.0	49.9	53.9	53.7	53.3	53.1	52.2	51.5	50.4	50.2	50.0	51.7	10.0	61.7
	6	54.2	57.0	52.3	56.8	56.5	55.9	55.5	54.7	54.0	52.8	52.6	52.4	54.2	10.0	64.2
	7	55.2	58.9	52.9	58.6	58.2	57.5	57.1	55.7	54.8	53.5	53.3	53.0	55.2	0.0	55.2
	8	47.6 46.1	51.5 52.5	45.1 39.1	51.1 52.1	50.7 51.9	50.0 50.9	49.6 50.0	48.3 47.3	47.1 44.3	45.7 40.5	45.5 39.9	45.2 39.3	47.6 46.1	0.0 0.0	47.6 46.1
	10	40.1	60.0	39.5	59.5	59.2	57.2	55.0	47.3	44.5	40.3	40.5	39.5	40.1	0.0	40.1
	11	48.5	56.7	39.1	56.1	55.2	53.7	52.9	50.1	45.7	40.8	40.3	39.4	48.5	0.0	48.5
	12	44.9	52.0	38.4	51.4	50.7	49.3	48.7	46.4	42.7	39.5	39.1	38.6	44.9	0.0	44.9
	13	47.7	59.9	37.7	58.9	58.0	55.0	53.6	44.0	41.2	38.7	38.3	37.9	47.7	0.0	47.7
Day	14	44.4	52.3	37.2	51.8	51.3	50.2	49.6	44.1	41.3	38.4	37.9	37.4	44.4	0.0	44.4
	15 16	40.0 41.0	45.3 46.6	35.5 35.6	44.9 46.2	44.7 45.9	44.0 44.7	43.4 44.1	41.1 42.0	38.6 40.0	36.3 36.7	36.0 36.2	35.6 35.7	40.0 41.0	0.0 0.0	40.0 41.0
	10	43.3	48.1	38.7	47.8	47.4	46.7	46.2	44.2	42.6	40.0	39.3	38.8	43.3	0.0	43.3
	18	45.3	50.6	41.3	50.2	49.8	48.8	48.3	46.0	44.5	42.3	41.9	41.5	45.3	0.0	45.3
	19	49.8	55.5	44.8	55.1	54.7	53.8	53.2	50.6	48.6	46.0	45.5	45.0	49.8	5.0	54.8
	20	47.6	53.4	42.7	52.9	52.5	51.5	50.9	48.7	46.3	43.7	43.2	42.8	47.6	5.0	52.6
	21 22	45.2 44.2	50.6 48.5	41.1	50.2 48.2	49.9 47.9	48.9 47.2	48.4	46.0	44.0 43.5	41.9	41.6	41.2	45.2 44.2	5.0 10.0	50.2 54.2
Night	22	44.2	48.5 53.4	41.0	48.2 53.0	52.6	47.2 51.8	40.7 51.1	45.0	43.5	41.8	41.4	41.1 41.3	44.2	10.0	56.7
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	40.0	45.3	35.5	44.9	44.7	44.0	43.4	41.1	38.6	36.3	36.0	35.6	24-Hour	Daytime	Nighttime
	Max	55.2	60.0	52.9	59.5	59.2	57.5	57.1	55.7	54.8	53.5	53.3	53.0		(7am-10pm)	(10pm-7am)
Energy	Average Min	48.1 44.2	48.5	erage: 41.0	52.5 48.2	52.0 47.9	50.8 47.2	50.1 46.7	46.9	44.4 43.5	41.7 41.8	41.2	40.7	48.8	48.1	49.8
Night	Max	54.2	48.5 57.7	52.3	48.2 57.3	56.5	55.9	40.7 55.5	43.0 54.7	43.5 54.0	52.8	41.4 52.6	52.4	40.0	40.1	43.0
Energy	Average	49.8	-	erage:	52.9	52.5	51.7	51.2	49.1	47.7	46.0	45.8	45.5			



						24-Ho	ur Noise Le	evel Meas	urement S	ummary						
		y, March 23, I				L2 - Located		-	site near sing	le-family	Meter:	Piccolo II				14775
Project:	Ethanac an	d Barnett Wa	arehouse		Source:	residence at	26515 Alta Av	venue.							Analyst:	A. Khan
							Hourly L _{eq} d	BA Readings	(unadjusted)							
85.0	י י															
00.0	o ∔															
8 70.0	n ++							_								
65.0 - 60.0			_		- 6 -			•					0 - 0			
- <u>></u> 55.0) - 4 -	5.7	56.9	60.6 62.8	63.9	63.1 63.1	59.4	29.9	<u>.</u> .		<mark>59.7</mark>		63.0 62.2	20.8	59.1 59.1	58.1
A 55.0 5 0.0 9 45.0 40.0	ž – <u>s</u> –	55.7	26				- <u>10</u>		<mark>- 51</mark>	- <mark>58</mark>	- <u>n</u> -,	, <mark>8</mark> ––			<u></u>	2
35.0																
	0	1 2	3	4 5	6	7 8	9 1		12 1	3 14	15 16	5 17	18 19	20	21 22	23
									eginning							
Timeframe	Hour	L _{eq}	L max	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0 1	55.4 55.7	61.9 63.7	50.6 50.4	61.6 63.3	61.0 62.6	59.5 60.5	58.4 59.0	56.0 56.1	54.2 54.1	51.7 51.4	51.2 51.0	50.7 50.5	55.4 55.7	10.0 10.0	65.4 65.7
	2	55.7	70.8	50.4	70.0	68.5	64.7	62.2	55.6	54.1	51.4	51.0	50.5	55.7	10.0	68.3
Night	3	56.9	62.9	53.2	62.5	62.0	60.4	59.5	57.5	56.1	54.1	53.7	53.3	56.9	10.0	66.9
	4	60.6	66.6	57.2	66.2	65.9	64.5	63.3	60.9	59.6	58.0	57.7	57.4	60.6	10.0	70.6
	5	62.8	69.7	59.8	69.2	68.4	66.4	65.0	63.0	61.9	60.4	60.2	59.9	62.8	10.0	72.8
	6	63.9 63.1	73.9 70.1	59.2 60.1	73.4	72.9 69.0	69.4 66.9	67.0	62.5 63.1	61.4	59.9 60.7	59.7 60.4	59.3 60.2	63.9 63.1	10.0 0.0	73.9 63.1
	8	63.1	70.1	56.7	74.5	73.3	69.6	65.4 66.3	60.5	62.0 59.0	57.4	57.1	56.8	63.1	0.0	63.1
	9	59.4	72.1	50.3	71.0	69.5	65.3	62.7	57.9	54.9	51.7	51.0	50.4	59.4	0.0	59.4
	10	67.9	82.6	50.2	81.8	80.4	75.3	70.6	59.3	55.6	51.8	51.2	50.4	67.9	0.0	67.9
	11	59.9	72.4	49.8	72.0	70.9	66.6	63.1	57.4	54.8	51.1	50.5	50.0	59.9	0.0	59.9
	12 13	57.5 57.7	68.2 69.0	49.5 49.8	67.6 68.3	66.6 67.1	63.3 64.2	61.0 61.7	56.8 56.5	54.3 54.0	51.1 51.1	50.3 50.6	49.7 50.0	57.5 57.7	0.0 0.0	57.5 57.7
Day	15	57.7	66.9	49.8 52.2	66.4	65.5	63.4	62.1	58.6	56.5	53.5	52.9	52.3	57.7	0.0	57.7
-,	15	59.7	70.5	51.9	69.9	68.8	65.8	64.0	58.8	55.8	53.0	52.5	52.0	59.7	0.0	59.7
	16	61.2	74.2	50.5	73.5	72.2	68.2	65.5	57.7	54.6	51.6	51.1	50.6	61.2	0.0	61.2
	17	58.1	68.0	51.5	67.4	66.5	63.9	62.2	57.7	55.1	52.5	52.1	51.6	58.1	0.0	58.1
	18 19	63.0 62.2	74.7 71.9	56.5 56.6	73.6 71.6	72.3 70.9	68.9 68.3	66.7 66.4	61.7 61.3	59.5 59.3	57.3 57.4	57.0 57.1	56.6 56.8	63.0 62.2	0.0 5.0	63.0 67.2
	20	59.8	68.2	55.5	67.6	66.7	64.3	62.7	59.8	58.2	56.3	56.0	55.6	59.8	5.0	64.8
	21	59.1	67.9	54.3	67.3	66.3	63.6	62.0	59.2	57.3	55.2	54.8	54.4	59.1	5.0	64.1
Night	22	59.1	67.2	53.5	66.9	66.4	65.0	63.9	58.6	56.5	54.5	54.1	53.6	59.1	10.0	69.1
Ū	23	58.1	65.9	53.6	65.4	64.6 L2%	62.5 L5%	60.9	58.4 L25%	56.6 L50%	54.5	54.1 L95%	53.7	58.1	10.0 L _{eg} (dBA)	68.1
Timeframe	Hour Min	L _{eq} 57.5	L _{max} 66.9	L _{min} 49.5	L1% 66.4	65.5	63.3	<i>L8%</i> 61.0	56.5	54.0	<i>L90%</i> 51.1	50.3	L99% 49.7		L _{eq} (UBA) Daytime	Nighttime
Day	Max	67.9	82.6	60.1	81.8	80.4	75.3	70.6	63.1	62.0	60.7	60.4	60.2	24-Hour	(7am-10pm)	(10pm-7am)
Energy /	-	61.7		rage:	70.8	69.7	66.5	64.2	59.1	56.7	54.1	53.6	53.2			
Night	Min	55.4	61.9	50.4	61.6	61.0	59.5	58.4	55.6	53.7	51.4	51.0	50.5	61.1	61.7	59.9
Energy /	Max Average	63.9 59.9	73.9 Ave	59.8 rage:	73.4 66.5	72.9 65.8	69.4 63.6	67.0 62.1	63.0 58.7	61.9 57.1	60.4 55.1	60.2 54.7	59.9 54.4			
Lileigy /	Average	59.9	Ave	age.	00.5	ŏ.č0	03.0	02.1	58.7	57.1	55.1	54.7	54.4			



						24-H	our Noise L	evel Meas	urement S	ummary						
		y, March 23,					l southeast of		-	gle-family	Meter	: Piccolo II				14775
Project:	Ethanac an	d Barnett Wa	arehouse		Source	: residence a	t 26635 Sumn	ner Sunshine	Drive.						Analyst:	A. Khan
							Hourly L _{eq}	dBA Readings	s (unadjusted)							
85.0	n															
(80.0 75.0 70.0	5															
65.0 پ 60.0 پ																
<u>−</u> 55.0																
A 55.0 A 55.0 P 45.0 40.0) <u>.</u>	2.6		47.0	51.8	S. 7			47.0	4 <mark>6</mark> .3	6.0	45.6 43.6	44.7 47.7	<u></u>	45.7 45.7	45.8
40.0 35.0	- 4	42		4 4	- 2 -	52. 48.	47	49. 47.	- 4 - 4	40. 46.		45. 43.	44 [.]		4 4	- 4 -
	0	1 2	3	4 5	6	7 8	9 1	LO 11	12 1	3 14	15 1	6 17	18 19	20	21 22	23
									eginning							
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	43.5	48.2	39.1	48.0	47.8	47.2	46.4	44.3	42.6	40.2	39.7	39.2	43.5	10.0	53.5
	1 2	42.6 44.2	48.4	38.5	48.1	47.8	46.8 48.4	45.8	43.3 44.2	41.5	39.3 40.6	39.0 40.3	38.6 39.9	42.6	10.0	52.6
Night	2	44.2	52.5 49.2	39.8 42.4	51.8 49.0	50.6 48.7	48.4	47.6 47.8	44.2	42.7 44.9	40.6	40.3	42.5	44.2 45.5	10.0 10.0	54.2 55.5
	4	47.0	51.5	44.3	51.1	50.7	49.9	49.2	47.6	46.4	45.0	44.7	44.4	47.0	10.0	57.0
	5	49.8	53.7	47.5	53.4	53.2	52.3	51.7	50.3	49.4	48.1	47.8	47.6	49.8	10.0	59.8
	6	51.8	57.4	48.7	56.9	56.6	55.3	54.6	52.1	50.8	49.4	49.1	48.8	51.8	10.0	61.8
	7 8	52.8 48.7	57.9 55.1	49.5 45.0	57.6 54.7	57.2 54.2	56.5 52.9	56.0 51.6	53.4 49.1	51.6 47.6	50.2 45.8	49.9 45.5	49.7 45.1	52.8 48.7	0.0 0.0	52.8 48.7
	9	47.9	57.9	40.5	57.3	56.1	53.6	52.2	47.7	47.0	41.8	41.4	40.7	47.9	0.0	47.9
	10	49.3	58.0	40.5	57.3	56.5	54.6	53.6	49.8	46.7	42.1	41.4	40.7	49.3	0.0	49.3
	11	47.8	56.5	39.8	55.9	55.1	53.0	51.8	48.4	45.3	41.3	40.7	39.9	47.8	0.0	47.8
	12	47.0	56.6	38.9	56.1	55.4	53.4	51.9	46.4	43.7	40.1	39.7	39.2	47.0	0.0	47.0
Day	13 14	46.2 46.3	54.1 55.3	40.0 39.6	53.7 54.8	53.2 54.4	51.8 52.6	50.2 50.8	46.4 46.1	44.1 43.6	41.2 40.8	40.7 40.5	40.2 39.8	46.2 46.3	0.0 0.0	46.2 46.3
Duy	15	48.9	62.1	36.8	61.4	60.4	56.4	53.2	43.6	40.4	37.7	37.3	36.9	48.9	0.0	48.9
	16	45.6	57.4	37.4	56.4	54.9	51.8	49.6	44.7	41.9	38.2	37.9	37.6	45.6	0.0	45.6
	17	43.6	53.5	38.1	52.8	51.8	49.1	46.6	43.5	41.1	38.9	38.5	38.2	43.6	0.0	43.6
	18 19	44.7 47.7	51.8 53.4	41.2 43.9	51.2 53.0	50.5 52.4	48.8 51.3	47.6 50.3	44.8 48.3	43.5 46.9	41.9 44.9	41.6 44.5	41.4 44.1	44.7 47.7	0.0 5.0	44.7 52.7
	20	47.7	53.4 50.4	43.9	53.0 50.1	52.4 49.8	48.9	48.4	48.3 47.1	46.9 46.1	44.9	44.5 44.0	44.1	47.7	5.0	52.7
	21	45.0	52.5	40.4	51.6	50.6	49.1	48.1	45.5	43.5	41.4	41.0	40.6	45.0	5.0	50.0
Night	22	45.7	49.8	42.0	49.5	49.2	48.5	48.1	46.7	45.2	43.1	42.6	42.2	45.7	10.0	55.7
, , , , , , , , , , , , , , , , , , ,	23	45.8	51.8	41.1	51.4	51.0	49.7	48.8	46.7	44.7	42.0	41.6	41.2	45.8	10.0	55.8
Timeframe	Hour Min	L _{eq} 43.6	L _{max} 50.4	L _{min} 36.8	L1% 50.1	L2% 49.8	L5% 48.8	<i>L8%</i> 46.6	L25% 43.5	40.4	<i>L90%</i> 37.7	<i>L95%</i> 37.3	L99% 36.9		L _{eq} (dBA) Daytime	Nighttime
Day	Max	43.0 52.8	62.1	49.5	61.4	60.4	56.5	56.0	43.3 53.4	40.4 51.6	50.2	49.9	49.7	24-Hour	(7am-10pm)	(10pm-7am)
Energy	Average	47.8		erage:	54.9	54.2	52.3	50.8	47.0	44.7	42.0	41.6	41.2			
Night	Min	42.6	48.2	38.5	48.0	47.8	46.8	45.8	43.3	41.5	39.3	39.0	38.6	47.6	47.8	47.2
	Max	51.8	57.4	48.7	56.9	56.6	55.3	54.6	52.1 46.8	50.8	49.4	49.1 43.1	48.8			
Energy	Average	47.2	Ave	erage:	51.0	50.6	49.6	48.9	46.8	45.4	43.4	43.1	42.7			



						24-Ho	ur Noise Le	evel Meas	urement S	ummary						
		/, March 23,				L4 - Located		-	site near sing	gle-family	Meter:	Piccolo II				14775
Project:	Ethanac and	d Barnett Wa	arehouse		Source:	residence at	26350 Starr [Drive.							Analyst:	A. Khan
							Hourly L _{eq} a	IBA Readings	(unadjusted)							
85.0	n															
000	ō															
Y A B B C C C C C C C C C C																
5 ,000 و 65.00 - 100 و 65.00 - 100																
					4	<u>o</u>					<u>ں</u>					
A 55.0 A 55.0 A 50.0 A 45.0 40.0	47.0	49.7	51.7	55.3	59.4	3.2 58.		<mark> </mark>		<mark> </mark>	<mark>57.5</mark> 55.2	54.0	0. 		3.7	50.9
40.0 35.0	7 4 1	- 4 - 0	- ت ا			23	20 <mark>.50</mark>	÷		20. 20.			51. 51.	47	232	<u>N</u>
55.0	0	1 2	3	4 5	6	7 8	9 1	0 11	12 1	3 14	15 16	17	18 19	20 2	21 22	23
	Ū		J J		Ũ		5 1		eginning		10 10	_,	10 10			20
Timeframe	Hour	L _{eq}	L max	L min	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	47.0	52.7	43.7	52.3	51.8	51.0	50.1	47.5	45.9	44.3	44.1	43.8	47.0	10.0	57.0
	1 2	49.7 50.1	56.2 58.5	45.2 45.3	55.9 58.1	55.4 57.5	53.9 55.2	52.9 53.7	50.4 49.5	48.3 48.1	46.1 46.2	45.7 45.8	45.3 45.5	49.7 50.1	10.0 10.0	59.7 60.1
Night	2	51.7	57.2	43.3	56.9	56.5	55.1	54.0	52.2	50.9	40.2	49.1	43.3	51.7	10.0	61.7
0	4	55.3	62.3	52.0	61.9	61.3	59.1	58.0	55.4	54.2	52.6	52.4	52.1	55.3	10.0	65.3
	5	56.0	59.6	54.1	59.3	59.0	58.0	57.5	56.3	55.6	54.6	54.4	54.2	56.0	10.0	66.0
	6	59.4	69.5	54.8	69.1	68.1	65.2	63.5	58.1	56.6	55.4	55.1	54.9	59.4	10.0	69.4
	7 8	58.6 53.2	64.5 58.3	55.9 50.6	64.1 57.8	63.5 57.3	61.9 56.2	61.0 55.4	58.8 53.7	57.8 52.6	56.5 51.1	56.3 50.9	56.0 50.7	58.6 53.2	0.0 0.0	58.6 53.2
	9	50.7	60.1	43.3	59.6	58.8	56.7	55.3	50.6	47.2	44.7	44.3	43.6	50.7	0.0	50.7
	10	48.1	88.8	67.5	88.3	87.7	86.0	85.1	82.5	78.7	72.2	71.0	68.3	48.1	0.0	48.1
	11	53.5	77.7	64.1	77.5	77.1	76.4	76.0	73.3	69.2	66.3	65.7	64.4	53.5	0.0	53.5
	12	54.3	62.2	43.8	61.4	60.6	58.9	58.0	55.1	52.8	47.7	45.9	44.2	54.3	0.0	54.3
Day	13 14	46.6 50.8	57.4 61.5	39.6 40.6	56.9 61.2	56.2 60.8	53.1 58.7	50.4 56.3	45.1 48.5	42.8 43.6	40.6	40.2 41.1	39.7 40.7	46.6 50.8	0.0 0.0	46.6 50.8
Day	14 15	50.8	68.5	40.6 37.6	61.2	68.1	58.7 66.8	65.2	48.5 52.4	43.6	41.5 38.6	41.1 38.2	40.7	50.8	0.0	50.8
	16	55.2	67.5	39.5	66.8	66.1	63.6	60.8	49.5	43.0	40.4	40.0	39.6	55.2	0.0	55.2
	17	54.0	67.8	43.1	67.2	66.2	61.2	57.1	47.7	45.5	43.8	43.5	43.2	54.0	0.0	54.0
	18	50.0	61.0	43.8	60.4	59.4	56.9	53.4	48.3	46.7	44.8	44.5	44.0	50.0	0.0	50.0
	19	51.5	62.9	45.9	62.5	61.3	58.3	54.5	49.0	47.9	46.5	46.3	46.0	51.5	5.0	56.5
	20 21	47.5 52.8	53.3 63.0	44.6 48.1	52.7 62.3	52.0 61.5	50.8 59.4	50.1 57.0	48.0 51.2	46.6 49.6	45.2 48.5	45.0 48.3	44.7 48.1	47.5 52.8	5.0 5.0	52.5 57.8
	22	53.7	55.4	52.6	55.2	55.0	54.6	54.4	53.9	53.6	52.9	52.8	52.7	53.7	10.0	63.7
Night	23	50.9	58.1	46.4	57.8	57.2	55.8	54.7	51.0	48.8	47.1	46.8	46.5	50.9	10.0	60.9
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	46.6	53.3	37.6	52.7	52.0	50.8	50.1	45.1	42.7	38.6	38.2	37.8	24-Hour	Daytime	Nighttime
Energy	Max Average	58.6 53.6	88.8 Ave	67.5 erage:	88.3 64.5	87.7 63.8	86.0 61.7	85.1 59.7	82.5 54.2	78.7 51.1	72.2 48.6	71.0 48.1	68.3 47.4		(7am-10pm)	(10pm-7am)
	Min	47.0	52.7	43.7	52.3	51.8	51.0	50.1	47.5	45.9	44.3	44.1	43.8	53.8	53.6	54.2
Night	Max	59.4	69.5	54.8	69.1	68.1	65.2	63.5	58.1	56.6	55.4	55.1	54.9			
Energy /	Average	54.2	Ave	erage:	58.5	58.0	56.4	55.4	52.7	51.3	49.8	49.6	49.3			



						24-Ho	ur Noise Le	evel Meas	urement S	ummary						
		, March 23,				L5 - Located			ear single-fai	mily	Meter:	Piccolo II				14775
Project:	Ethanac and	d Barnett Wa	arehouse		Source:	residence at	26340 Corsic	a Lane.							Analyst:	A. Khan
							Hourly L _{eq} d	dBA Readings	(unadjusted)							
0.5 (0															
85.0	ō															
Y ap 75.0 Y ap 70.0																
65.0 65.0 	ğ — —															
> 55.0	0 ++					<u>ں</u>										
A 55.0 a 50.0 b 45.0 40.0		4 0		55.8	58.7	59.5		4. <u>o</u>	<u>,</u> ,		• •	<u>t</u>	n n	<u>.</u>	v v	4
40.0	7 4 1	51.4 49.9	23	O			2 <mark>4</mark>	<mark>51.6</mark>	47.	<mark>46. – 1</mark>	- <mark>4</mark> 6	<mark>8 - 4</mark> -	46. 49.	48.0	47.7	51 .
35.0	0 ++	1 2	3	4 5	6	7 8	9 1	.0 11	12 1	2 14	15 1	c 17	10 10	20 2	21 22	23
	0	1 2	3	4 5	б	7 8	9 1		12 1. eginning	3 14	15 1	6 17	18 19	20 2	21 22	23
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L _{eq}	Adj.	Adj. L _{eq}
	0	48.8	53.6	45.2	53.3	53.0	52.3	51.8	49.5	47.7	45.9	45.6	45.3	48.8	10.0	58.8
	1	51.4	58.2	47.1	57.8	57.0	55.9	55.1	51.6	50.1	48.0	47.6	47.2	51.4	10.0	61.4
Night	2	49.9 53.3	55.0 56.4	46.5 50.6	54.8 56.2	54.2 56.1	53.4 55.5	52.9 55.1	50.2 54.0	49.0 53.0	47.3 51.3	47.0 51.0	46.6 50.7	49.9 53.3	10.0 10.0	59.9 63.3
	4	55.8	59.8	53.2	59.5	59.3	58.6	58.0	56.4	55.3	53.8	53.5	53.3	55.8	10.0	65.8
	5	55.5	58.0	53.8	57.7	57.5	56.9	56.6	55.9	55.3	54.3	54.1	53.9	55.5	10.0	65.5
	6	58.7	61.4	56.8	61.2	61.0	60.4	60.0	59.2	58.5	57.3	57.1	56.9	58.7	10.0	68.7
	7	59.5	63.2	57.3	63.0	62.7	62.0	61.4	60.0	59.1	57.8	57.6	57.4	59.5	0.0	59.5
	8 9	53.1 54.0	65.9 67.2	48.5 43.1	65.0 66.2	62.7 64.6	56.9 62.2	53.7 59.0	51.4 49.5	50.3 47.2	49.0 44.3	48.8 43.7	48.6 43.3	53.1 54.0	0.0 0.0	53.1 54.0
	10	52.4	61.8	43.0	60.8	59.7	58.0	57.0	53.2	49.3	44.3	43.8	43.3	52.4	0.0	52.4
	11	51.6	59.5	42.1	59.0	58.5	57.1	56.2	52.2	48.9	43.8	43.1	42.3	51.6	0.0	51.6
	12	47.7	54.6	41.2	53.9	53.2	51.9	51.2	48.8	46.5	42.4	42.0	41.4	47.7	0.0	47.7
	13	44.7	50.5	40.6	49.8	49.1	48.1	47.6	45.5	43.7	41.4	41.1	40.7	44.7	0.0	44.7
Day	14 15	46.6 41.0	53.7 46.2	39.9 37.3	53.3 45.8	52.7 45.4	52.1 44.4	51.5 43.9	47.2 41.9	43.6 40.2	41.1 38.0	40.6 37.7	40.1 37.4	46.6 41.0	0.0 0.0	46.6 41.0
	15	41.0	40.2 64.0	37.5	45.8 61.9	45.4 59.4	44.4 53.7	43.9	41.9	40.2	39.6	39.1	37.4	41.0	0.0	41.0
	17	44.4	48.7	41.3	48.3	47.9	47.0	46.5	45.1	44.0	42.1	41.8	41.4	44.4	0.0	44.4
	18	46.5	51.3	43.3	50.7	50.2	49.5	48.9	47.2	45.8	44.1	43.8	43.4	46.5	0.0	46.5
	19	49.5	55.7	46.3	55.1	54.4	52.7	52.0	49.9	48.7	47.0	46.7	46.4	49.5	5.0	54.5
	20	48.0	53.2	44.7	52.8	52.3	51.2	50.7	48.8	47.1	45.4	45.1	44.8	48.0 47.7	5.0	53.0
	21 22	47.7	53.4 51.3	43.8 44.6	52.9 51.0	52.4 50.8	51.2 50.2	50.6 49.7	48.6	46.5 46.6	44.6 45.3	44.1	43.9 44.7	47.7	5.0 10.0	52.7 57.2
Night	22	51.4	58.2	45.7	57.7	57.4	56.7	55.8	52.2	48.7	46.4	46.1	45.8	51.4	10.0	61.4
Timeframe	Hour	L _{eq}	L _{max}	L _{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L _{eq} (dBA)	
Day	Min	41.0	46.2	37.3	45.8	45.4	44.4	43.9	41.9	40.2	38.0	37.7	37.4	24-Hour	Daytime	Nighttime
,	Max Average	59.5 51.6	67.2	57.3 rage:	66.2	64.6	62.2 53.2	61.4 51.9	60.0 49.0	59.1	57.8 44.3	57.6	57.4		(7am-10pm)	(10pm-7am)
	Min	47.2	51.3	44.6	55.9 51.0	55.0 50.8	53.2	49.7	49.0	46.9 46.6	44.3	43.9 45.0	43.5 44.7	52.6	51.6	53.8
Night	Max	58.7	61.4	56.8	61.2	61.0	60.4	60.0	59.2	58.5	57.3	57.1	56.9	52.0	31.0	55.0
Energy	Average	53.8	Ave	rage:	56.6	56.3	55.5	55.0	53.0	51.6	49.9	49.7	49.4			





APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS







L1_N 33, 44' 28.060000"117, 12' 4.000000"



L1_S 33, 44' 28.220000"117, 12' 4.050000"



L1_W 33, 44' 28.430000"117, 12' 4.080000"



L2_E 33, 44' 8.320000"117, 11' 12.890000"



L2_N 33, 44' 8.390000"117, 11' 12.940000"



L2_W 33, 44' 8.300000"117, 11' 12.890000"



33, 44' 8.36000"117, 11' 12.890000"

L2_S

L3_E 33, 44' 2.870000"117, 11' 34.670000"



L3_N 33, 44' 2.860000"117, 11' 34.720000"



L3_S 33, 44' 2.840000"117, 11' 34.670000"



L3_W 33, 44' 2.880000"117, 11' 34.670000"



L4_E 33, 44' 8.460000"117, 12' 0.400000"



L4_N 33, 44' 8.410000"117, 12' 0.210000"



L4_S 33, 44' 8.470000"117, 12' 0.400000"



L4_W 33, 44' 8.500000"117, 12' 0.460000"



L5_E 33, 44' 20.050000"117, 12' 0.950000"



L5_N 33, 44' 20.060000"117, 12' 0.950000"





L5_W 33, 44' 20.050000"117, 12' 0.980000"



APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS





FHWA-RD-77	-108 HIGHWAY	' NOISE	PREDIC	TION MO	DEL (9/	12/2021)						
Scenario: E Road Name: Murrieta Rd. Road Segment: n/o Ethanac Ro	1.			Project N Job Nur		arnett and Ethar 1775	nac					
SITE SPECIFIC INPU	T DATA					ODEL INPUT	S					
Highway Data		5	Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic (Adt): 3,	350 vehicles				A	utos: 15						
Peak Hour Percentage: 10.	.00%			dium Truc		,						
Peak Hour Volume: 3	35 vehicles		Hea	avy Truck	s (3+ Ax	(les): 15						
Vehicle Speed:	45 mph	1	Vehicle N	Aix								
Near/Far Lane Distance:	45 feet	F		cleType	D	ay Evening	Night Daily					
Site Data						5.6% 14.0%	10.5% 97.42%					
Barrier Height:	0.0 feet		Me	edium Tru	cks: 4	8.9% 2.2%	48.9% 1.84%					
Barrier Type (0-Wall, 1-Berm):	0.0		H	leavy Tru	cks: 4	7.3% 5.4%	47.3% 0.74%					
	50.0 feet	L.	Naina Ca	urce Elev	ationa	(in fact)						
Centerline Dist. to Observer: 5	50.0 feet	ť	voise 30	Autos:	0.00	, ,						
Barrier Distance to Observer:	0.0 feet		Madium	n Trucks:	2.29							
Observer Height (Above Pad):	5.0 feet			y Trucks:	8.00		iustment: 0.0					
Pad Elevation:	0.0 feet		Tieav	y muchs.	0.00	94 Olade Auj	asanche. 0.0					
Road Elevation:	0.0 feet	L	Lane Equ	ivalent D	istance	e (in feet)						
	.0%			Autos:	44.93							
	0.0 degrees			n Trucks:	44.73							
Right View: 9	0.0 degrees		Heav	y Trucks:	44.75	52						
FHWA Noise Model Calculations												
VehicleType REMEL Tra	affic Flow Di	stance	Finite	Road	Fresne	I Barrier Att	en Berm Atten					
Autos: 68.46	-6.70	0.59	-	-1.20			0.00					
Medium Trucks: 79.45	-23.94	0.62	-	-1.20			0.00					
Heavy Trucks: 84.25	-27.89	0.62	2	-1.20	-{	5.43 0.0	0.00					
Unmitigated Noise Levels (without			(T					
VehicleType Leq Peak Hour	Leq Day	Leg Ev		Leq Ni	•	Ldn	CNEL					
Autos: 61.2	59.1		57.8		51.8	60.2						
Medium Trucks: 54.9	51.0		43.5		52.3	58.5						
Heavy Trucks: 55.8	51.7		48.3		53.0	59.2						
Vehicle Noise: 63.0	60.4		58.4		57.2	64.1	1 64.4					
Centerline Distance to Noise Conto	our (in feet)											
	[70 c		65 dE		60 dBA	55 dBA					
	Ldn:		20		44	94						
	CNEL:		21		46	99	213					

	FHWA-RD	-77-108 HIGH\	NAY NO	DISE P	REDICTION	ODEL	(9/12/2)	021)					
Scenari Road Nam	o: E+P e: Murrieta Rd			Project Name: Barnett and Ethanac Job Number: 14775									
	nt: n/o Ethanac				5001	vumber.	14775						
	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS									
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	3,368 vehicle	s				Autos:	15					
Peak Hour	Percentage:	10.00%			Medium T	rucks (2	Axles):	15					
Peak H	our Volume:	337 vehicles			Heavy Tru	icks (3+	Axles):	15					
Ve	hicle Speed:	45 mph		Ve	hicle Mix								
Near/Far La	ne Distance:	45 feet		-	VehicleTyp	e	Dav	Evening	Night	Daily			
Site Data						Autos:	75.6%	•	10.5%				
	rier Height:	0.0 feet			Medium 1		48.9%		48.9%	1.839			
Barrier Type (0-W		0.0			Heavy 1	rucks:			47.3%	0.749			
Centerline Dis	. ,	50.0 feet											
Centerline Dist.		50.0 feet		No	oise Source E			eet)					
Barrier Distance		0.0 feet			Auto		.000						
Observer Height (5.0 feet			Medium Truck		.297						
	ad Elevation:	0.0 feet			Heavy Truck	(s: 8	.004	Grade Adj	iustment.	0.0			
	d Elevation:	0.0 feet		La	ne Equivalen	t Distan	ce (in i	feet)					
	Road Grade:	0.0%			Auto		.931						
	Left View:	-90.0 degree	9		Medium Truck		.733						
	Right View:	90.0 degree			Heavy Truck	(s: 44	.752						
FHWA Noise Mode	el Calculations												
VehicleType	REMEL	Traffic Flow	Distar		Finite Road	Fres		Barrier Atte		m Atten			
Autos:	68.46	-6.68		0.59	-1.20		-4.65		000	0.00			
Medium Trucks:	79.45	-23.94		0.62	-1.20		-4.87		000	0.00			
Heavy Trucks:	84.25	-27.89		0.62	-1.20		-5.43	0.0	000	0.00			
Unmitigated Noise					,								
	Leq Peak Hou			eq Eve		Night	_	Ldn		VEL			
Autos:	61.		9.2		57.9	51.	-	60.3		60.			
Medium Trucks:	54.		51.0		43.5	52.	-	58.5		58			
Heavy Trucks:	55.		51.7		48.3	53.		59.2	-	59. 64			
Vehicle Noise:	63.		60.4		58.5	57.	2	64.1		64.			
Centerline Distanc	e to Noise Co	ntour (in feet)	-	70 dE	A 65	dBA	6	0 dBA	55	dBA			
		,	.dn:	70 UE	20	UDA 44	-	94 94		203 203			
			EL:		20	4		94		20.			
		Ch			21	40	,	99		21.			

Thursday, October 6, 2022

	FHWA-RI	D-77-108 HIGH	WAY NO			10DEL (9/1:	2/2021)					
Road Nan	io: OYC ne: Murrieta Ro nt: n/o Ethana					Name: Bar lumber: 147	nett and Ethan 75	ac				
	SPECIFIC IN	IPUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Conditions (Hard = 10, Soft = 15)								
Average Daily	Traffic (Adt):	3,540 vehicle	s			Aut	os: 15					
Peak Hour	Percentage:	10.00%			Medium Tr	ucks (2 Axle	es): 15					
Peak H	lour Volume:	354 vehicles			Heavy Tru	cks (3+ Axle	es): 15					
Ve	hicle Speed:	45 mph		Vehi	cle Mix							
Near/Far La	ne Distance:	45 feet			VehicleType	e Da	y Evening	Night Daily				
Site Data							6% 14.0%	10.5% 97.42%				
Ba	rrier Heiaht:	0.0 feet			Medium T	rucks: 48.	9% 2.2%	48.9% 1.84%				
Barrier Type (0-W		0.0			Heavy T	rucks: 47.	3% 5.4%	47.3% 0.74%				
Centerline Di	. ,	50.0 feet		Main	. 0	levations (i						
Centerline Dist.	to Observer:	50.0 feet		NOIS	e Source El Auto		,					
Barrier Distance	to Observer:	0.0 feet				0.000						
Observer Height	(Above Pad):	5.0 feet			edium Truck			istment: 0.0				
P	ad Elevation:	0.0 feet		,	leavy Truck	s: 8.004	Grade Aujt	isunenii. 0.0				
Ro	ad Elevation:	0.0 feet		Lane	Equivalen	t Distance (in feet)					
	Road Grade:	0.0%			Auto	s: 44.931						
	Left View:	-90.0 degree	s	M	edium Truck	s: 44.733	3					
	Right View:	90.0 degree	s	ŀ	leavy Truck	s: 44.752	2					
FHWA Noise Mod	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Distar	ice F	nite Road	Fresnel	Barrier Atte	n Berm Atten				
Autos:	68.46	-6.46		0.59	-1.20	-4.	65 0.00	0.00				
Medium Trucks:	79.45	-23.70		0.62	-1.20	-4.	87 0.00	0.00				
Heavy Trucks:	84.25	-27.66		0.62	-1.20	-5	43 0.00	0.00				
Unmitigated Nois				ttenuati								
VehicleType	Leq Peak Hou			eq Evenir		Night	Ldn	CNEL				
Autos:			59.4		58.1	52.1	60.5	61.				
Medium Trucks:			51.3		3.8	52.5	58.7	58.				
Heavy Trucks:			52.0		8.6	53.2	59.4	59.				
Vehicle Noise:			60.6		58.7	57.4	64.4	64.				
Centerline Distan	ce to Noise Co	ontour (in feet)										
				70 dBA	65	dBA	60 dBA	55 dBA				
			Ldn: IEL:		21 22	45 48	98 102	211 221				

	E PREDICTION MODEL (9/12/2021)								
Scenario: OYCP Road Name: Murrieta Rd. Road Segment: n/o Ethanac Rd.	Project Name: Barnett and Ethanac Job Number: 14775								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 3,558 vehicles	Autos: 15								
Peak Hour Percentage: 10.00%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 356 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 45 mph	Vehicle Mix								
Near/Far Lane Distance: 45 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 75.6% 14.0% 10.5% 97.43%								
Barrier Height: 0.0 feet	Medium Trucks: 48.9% 2.2% 48.9% 1.83%								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 47.3% 5.4% 47.3% 0.74%								
Centerline Dist. to Barrier: 50.0 feet	Noise Source Elevations (in feet)								
Centerline Dist. to Observer: 50.0 feet	Autos: 0.000								
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297								
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Pad Elevation: 0.0 feet	,								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 44.931								
Left View: -90.0 degrees	Medium Trucks: 44.733								
Right View: 90.0 degrees	Heavy Trucks: 44.752								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Distance	Finite Road Fresnel Barrier Atten Berm Atten								
Autos: 68.46 -6.44 0.	.59 -1.20 -4.65 0.000 0.000								
Medium Trucks: 79.45 -23.70 0.	.62 -1.20 -4.87 0.000 0.000								
Heavy Trucks: 84.25 -27.66 0	.62 -1.20 -5.43 0.000 0.000								
Unmitigated Noise Levels (without Topo and barrier atte									
	Evening Leq Night Ldn CNEL								
Autos: 61.4 59.4	58.1 52.1 60.5 61.1								
Medium Trucks: 55.2 51.3	43.8 52.5 58.7 58.7								
Heavy Trucks: 56.0 52.0	48.6 53.2 59.4 59.5								
Vehicle Noise: 63.3 60.7	58.7 57.4 64.4 64.7								
Centerline Distance to Noise Contour (in feet)									
	0 dBA 65 dBA 60 dBA 55 dBA								
Ldn:	21 45 98 211								
CNEL:	22 48 103 221								

FHWA-RD-77-108 HIGHWAY N	DISE PREDICTION MODEL (9/12/2021)								
Scenario: E Road Name: Murrieta Rd. Road Segment: s/o Ethanac Rd.	Project Name: Barnett and Ethanac Job Number: 14775								
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS								
Highway Data	Site Conditions (Hard = 10, Soft = 15)								
Average Daily Traffic (Adt): 7,650 vehicles	Autos: 15								
Peak Hour Percentage: 10.00%	Medium Trucks (2 Axles): 15								
Peak Hour Volume: 765 vehicles	Heavy Trucks (3+ Axles): 15								
Vehicle Speed: 45 mph	Vehicle Mix								
Near/Far Lane Distance: 45 feet	VehicleType Day Evening Night Daily								
Site Data	Autos: 75.6% 14.0% 10.5% 97.42								
Barrier Height: 0.0 feet	Medium Trucks: 48.9% 2.2% 48.9% 1.84								
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 47.3% 5.4% 47.3% 0.74								
Centerline Dist. to Barrier: 50.0 feet									
Centerline Dist. to Observer: 50.0 feet	Noise Source Elevations (in feet)								
Barrier Distance to Observer: 0.0 feet	Autos: 0.000								
Observer Height (Above Pad): 5.0 feet	Medium Trucks: 2.297								
Pad Elevation: 0.0 feet	Heavy Trucks: 8.004 Grade Adjustment: 0.0								
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)								
Road Grade: 0.0%	Autos: 44.931								
Left View: -90.0 degrees	Medium Trucks: 44.733								
Right View: 90.0 degrees	Heavy Trucks: 44.752								
FHWA Noise Model Calculations									
VehicleType REMEL Traffic Flow Dist	nce Finite Road Fresnel Barrier Atten Berm Atten								
Autos: 68.46 -3.11	0.59 -1.20 -4.65 0.000 0.00								
Medium Trucks: 79.45 -20.35	0.62 -1.20 -4.87 0.000 0.00								
Heavy Trucks: 84.25 -24.31	0.62 -1.20 -5.43 0.000 0.00								
Unmitigated Noise Levels (without Topo and barrier	ttenuation)								
	eq Evening Leq Night Ldn CNEL								
Autos: 64.7 62.7	61.4 55.4 63.8 64								
Medium Trucks: 58.5 54.6	47.1 55.9 62.0 62								
Heavy Trucks: 59.4 55.3	51.9 56.6 62.8 62								
Vehicle Noise: 66.6 64.0	62.0 60.7 67.7 68								
Centerline Distance to Noise Contour (in feet)									
	70 dBA 65 dBA 60 dBA 55 dBA								
Ldn:	35 76 163 35								
CNEL:	37 79 171 36								

	FHWA-RD	-77-108 HIGH	WAY	NOISE P	REDICTION	NODEL	(9/12/2	021)						
Scenario	p: E+P				Project Name: Barnett and Ethanac									
Road Name	e: Murrieta Rd				Job I	lumber:	14775							
Road Segmen	t: s/o Ethanac	Rd.												
	SPECIFIC IN	PUT DATA			NOISE MODEL INPUTS									
Highway Data				Si	Site Conditions (Hard = 10, Soft = 15)									
Average Daily	Traffic (Adt):	7,705 vehicle	s				Autos:	15						
Peak Hour	Percentage:	10.00%			Medium T	rucks (2	Axles):	15						
Peak He	our Volume:	771 vehicles			Heavy Tru	icks (3+	Axles):	15						
Vel	nicle Speed:	45 mph		Ve	ehicle Mix									
Near/Far Lar	ne Distance:	45 feet		-	VehicleTyp	e	Dav	Evening	Night	Dailv				
Site Data						Autos:	75.6%		10.5%	97.449				
Bar	rier Height:	0.0 feet			Medium 1	rucks:	48.9%	2.2%	48.9%	1.839				
Barrier Type (0-Wa		0.0			Heavy 1	rucks:	47.3%	5.4%	47.3%	0.739				
Centerline Dis	. ,	50.0 feet		-										
Centerline Dist. 1		50.0 feet		N	oise Source E			eet)						
Barrier Distance t	o Observer:	0.0 feet			Auto		.000							
Observer Height ()		5.0 feet			Medium Truck		.297							
	d Elevation:	0.0 feet			Heavy Truck	(S.' 8	.004	Grade Ad	ustment	0.0				
Roa	d Elevation:	0.0 feet		La	ne Equivalen	t Distar	nce (in i	feet)						
F	Road Grade:	0.0%			Auto	os: 44	.931							
	Left View:	-90.0 degree	s		Medium Truck	(s: 44	.733							
	Right View:	90.0 degree	s		Heavy Truck	(s: 44	.752							
FHWA Noise Mode	I Calculations													
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite Road	Fres		Barrier Att	en Ber	m Atten				
Autos:	68.46	-3.08		0.59	-1.20		-4.65		000	0.00				
Medium Trucks:	79.45	-20.35		0.62	-1.20		-4.87		000	0.00				
Heavy Trucks:	84.25	-24.31		0.62	-1.20		-5.43	0.0	000	0.00				
Unmitigated Noise			barrie	r attenu	ation)									
	Leq Peak Hou			Leq Eve		Night		Ldn		VEL				
Autos:	64.	-	52.8		61.4	55		63.9	-	64.				
Medium Trucks:	58.		54.6		47.1	55		62.0		62				
Heavy Trucks:	59.		55.3		51.9	56		62.8		62.				
Vehicle Noise:	66.	.6	54.0		62.0	60	.8	67.3	7	68.				
Centerline Distanc	e to Noise Co	ntour (in feet)												
			. L	70 dE		dBA		60 dBA		dBA				
			Ldn:		35	7		164		35				
		~	IEL		37	8	0	172		370				

Thursday, October 6, 2022

FHWA	A-RD-	77-108 HIGH	WAY	NOISE	E PREDIC		IODEL (9	/12/20	021)		
Scenario: OYC Road Name: Murriet Road Segment: s/o Eth		Rd.					Name: B lumber: 1		t and Ethan	lac	
SITE SPECIFIC	C INF	PUT DATA							L INPUTS	3	
Highway Data					Site Con	ditions	(Hard = 1	10, Sc	oft = 15)		
Average Daily Traffic (Ad	t): 1	13,450 vehicle	s				A	utos:	15		
Peak Hour Percentag	e: 1	10.00%			Me	dium Tr	ucks (2 A	xles):	15		
Peak Hour Volum	e: 1	1,345 vehicles			He	avy Tru	cks (3+ A	xles):	15		
Vehicle Spee	d:	45 mph		ł	Vehicle I	<i>lix</i>					
Near/Far Lane Distanc	e:	45 feet		ŀ		cleType	. 1	Day	Evening	Night	Daily
Site Data								75.6%	•	10.5%	
Barrier Heigh	nt.	0.0 feet			Me	edium T	rucks: 4	18.9%	2.2%	48.9%	1.84%
Barrier Type (0-Wall, 1-Bern		0.0			ŀ	leavy T	rucks: 4	17.3%	5.4%	47.3%	0.74%
Centerline Dist. to Barrie	·	50.0 feet		-	Noine On			(i	41		
Centerline Dist. to Observe	er:	50.0 feet		-	Noise So				eet)		
Barrier Distance to Observe	er:	0.0 feet				Auto					
Observer Height (Above Pag	d):	5.0 feet				n Truck			Grade Adji	untern o nt	0.0
Pad Elevatio	n:	0.0 feet			Heav	y Truck	s: 8.0	04	Grade Aujt	usuneni.	0.0
Road Elevatio	n:	0.0 feet			Lane Equ	iivalent	Distanc	e (in i	feet)		
Road Grad	e:	0.0%				Auto	s: 44.9	31			
Left Vie	W:	-90.0 degree	s		Mediur	n Truck	s: 44.7	33			
Right Vie	W:	90.0 degree	s		Heav	y Truck	s: 44.7	52			
FHWA Noise Model Calculat	tions			I							
VehicleType REMEL		Traffic Flow	Dis	stance	Finite		Fresne		Barrier Atte		m Atten
	3.46	-0.66		0.5		-1.20		4.65	0.0		0.00
	.45	-17.90		0.6		-1.20		4.87	0.0		0.00
	.25	-21.86		0.6		-1.20	-	5.43	0.0	00	0.00
Unmitigated Noise Levels (v					,		A.C. 1.1				
VehicleType Leq Peak Autos:	Hour 67.2		35.2	Leq E	vening 63.9	Leq	Night 57.9		Ldn 66.3		VEL 66.
Autos: Medium Trucks:	61.0		57.1		63.9 49.6		57.9		64.5		64.
Heavy Trucks:	61.8		57.8		49.0 54.4		59.0		65.2		65.
Vehicle Noise:	69.0		57.0 56.4		64.5		63.2		70.2		70.
			50.4		04.5		00.2		10.2		70.
Centerline Distance to Noise	e Cor	tour (in feet)	Т	70	dBA	65	dBA	F	60 dBA	55	dBA
			dn:	.0	51		110		238		513
			IEL:		54		116		249		537
		Ch	· L				110		245		001

	FHWA-RD	0-77-108 HIGHW	AY NOIS	E PREDIC		DEL (9/12/:	2021)					
Road Nam	o: OYCP e: Murrieta Ro nt: s/o Ethanad					ame: Barne nber: 1477	ett and Ethar 5	nac				
SITE	SPECIFIC IN	PUT DATA		NOISE MODEL INPUTS								
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)		-			
Average Daily	Traffic (Adt):	13,505 vehicles				Autos	: 15					
• •	Percentage:	10.00%		Me	dium Truck	ks (2 Axles)): 15					
	our Volume:	1,351 vehicles		He	avy Trucks	(3+ Axles)	: 15					
	hicle Speed:	45 mph				, ,						
Near/Far La		45 feet		Vehicle I			-					
				Veni	cleType	Day	Evening	•	Daily			
Site Data				<i>.</i>	Aut				7.43%			
	rier Height:	0.0 feet			edium Truc				1.83%			
Barrier Type (0-W	all, 1-Berm):	0.0		ŀ	leavy Truc	ks: 47.3°	% 5.4%	47.3% 0	0.74%			
Centerline Dis	st. to Barrier:	50.0 feet		Noise So	urce Elev	ations (in	feet)					
Centerline Dist.	to Observer:	50.0 feet			Autos:	0.000						
Barrier Distance	to Observer:	0.0 feet		Mediu	n Trucks:	2.297						
Observer Height (Above Pad):	5.0 feet			y Trucks:	8.004	Grade Adi	ustment: 0.	0			
Pa	ad Elevation:	0.0 feet			·				-			
Roa	ad Elevation:	0.0 feet		Lane Equ	ıivalent D	istance (in	feet)					
ŀ	Road Grade:	0.0%			Autos:	44.931						
	Left View:	-90.0 degrees		Mediur	n Trucks:	44.733						
	Right View:	90.0 degrees		Heav	y Trucks:	44.752						
FHWA Noise Mode	el Calculation:	S		1								
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Berm A	Atten			
Autos:	68.46	-0.65	0	.59	-1.20	-4.65	6 0.0	00	0.000			
Medium Trucks:	79.45	-17.90	0	.62	-1.20	-4.87	0.0	00	0.000			
Heavy Trucks:	84.25	-21.86		.62	-1.20	-5.43	8 0.0	00	0.000			
Unmitigated Noise	Levels (with		arrier atte	enuation)								
	Leq Peak Hou			Evening	Leq Nig		Ldn	CNEL				
Autos:	67		5.2	63.9		57.9	66.3		66.9			
Medium Trucks:	61		7.1	49.6		58.3	64.5		64.5			
Heavy Trucks:	61		7.8	54.4		59.0	65.2		65.3			
Vehicle Noise:	69	.0 66	6.5	64.5		63.2	70.2	2	70.5			
Centerline Distance	e to Noise Co	ontour (in feet)			_		_					
			7	0 dBA	65 dB		60 dBA	55 dB.	A			
		Lo	dn:	51		111	238		513			
		CNE	L:	54		116	250		538			

	FHWA-RD	-77-108 HIGHV	AY NOIS	E PREDIO		ODEL (9	/12/20	21)					
Scenario. Road Name. Road Segment.	Barnett Rd.	Rd.				Name: E umber: 1		and Ethar	iac				
SITE S	PECIFIC IN	PUT DATA			N	OISE N	ODEL	INPUTS	6				
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily Ti	raffic (Adt):	2,120 vehicles				A	Autos:	15					
Peak Hour P	ercentage:	10.00%		Me	dium Tru	icks (2 A	xles):	15					
Peak Ho	ur Volume:	212 vehicles		He	avy Truc	:ks (3+ A	xles):	15					
Vehi	icle Speed:	45 mph		Vehicle	Mix								
Near/Far Lane	e Distance:	45 feet			icleType		Dav	Evening	Night	Daily			
Site Data				Ven			75.6%	14.0%	10.5%				
					edium Tr		48.9%	2.2%	48.9%				
	ier Height:	0.0 feet			Heavy Tr		47.3%		47.3%				
Barrier Type (0-Wa	. ,	0.0			loary n	uono.	+1.070	0.470	47.070	0.7470			
Centerline Dist. Centerline Dist. to		50.0 feet 50.0 feet		Noise Se	ource Ele	evations	(in fee	et)					
		0.0 feet			Autos	s: 0.0	00						
Barrier Distance to		5.0 feet		Mediu	m Trucks	5: 2.2	97						
Observer Height (A	bove Pad): Elevation:	0.0 feet		Hea	/y Trucks	s: 8.0	04 (Grade Adj	ustment	: 0.0			
	l Elevation: l Elevation:	0.0 feet		Lane Eq	uivalont	Distanc	o (in fe	of)					
	ad Grade:	0.0%		Lune Ly	Autos								
7.0	Left View:	-90.0 degrees		Mediu	m Trucks								
ŀ	Right View:	90.0 degrees			/y Trucks								
FHWA Noise Model	Calculations	;											
VehicleType	REMEL	Traffic Flow	Distance	e Finite	Road	Fresne	e/ E	Barrier Atte	en Ber	m Atten			
Autos:	68.46	-8.69	0	.59	-1.20		4.65	0.0	00	0.000			
Medium Trucks:	79.45	-25.93	0	.62	-1.20		4.87	0.0	00	0.000			
Heavy Trucks:	84.25	-29.88	0	.62	-1.20		-5.43	0.0	00	0.000			
Unmitigated Noise			1	,									
	eq Peak Hou			Evening	Leq I	•		Ldn		VEL			
Autos:	59.		7.2	55.8		49.8		58.3		58.9			
Medium Trucks:	52.		9.0	41.5		50.3		56.5		56.5			
Heavy Trucks: Vehicle Noise:	53.		9.7 8.4	46.3 56.4		51.0		57.2 62.1		57.3 62.4			
			D.4	56.4		55.2		o2.1		o2.4			
Centerline Distance	to Noise Co	ntour (in feet)	7/	0 dBA	65 0	IRA	6/) dBA	55	dBA			
		1	dn:	15		32	00	69	55	150			
		CN		15		34		73		150			
		014		10		04		75		157			

	FHWA-RD	-77-108 HIGHW	AY NC	ISE PI	REDICT		ODEL (9/12/2	021)		
Scenario Road Name	: E+P : Barnett Rd.						Name: umber:		t and Etha	nac	
Road Segment	s/o Ethanac	Rd.									
SITE S	PECIFIC IN	PUT DATA							L INPUT	s	
Highway Data				Sit	e Condi	itions (Hard =	10, So	oft = 15)		
Average Daily T	raffic (Adt):	2,517 vehicles						Autos:	15		
Peak Hour F	Percentage:	10.00%			Medi	um Tru	icks (2)	Axles):	15		
Peak Ho	ur Volume:	252 vehicles			Heav	y Truc	ks (3+)	Axles):	15		
Veh	icle Speed:	45 mph		Ve	hicle Mi	x					
Near/Far Lan	e Distance:	45 feet				eType		Day	Evening	Night	Daily
Site Data							utos:	75.6%	•	10.5%	
Barr	ier Heiaht:	0.0 feet			Med	lium Tr	ucks:	48.9%	2.2%	48.9%	2.49
Barrier Type (0-Wa		0.0			He	avy Tr	ucks:	47.3%	5.4%	47.3%	5.21
Centerline Dist	. ,	50.0 feet									
Centerline Dist. to		50.0 feet		NO	ise Sou				eet)		
Barrier Distance to	Observer:	0.0 feet				Autos		000			
Observer Height (A	bove Pad):	5.0 feet			Medium			297	Crada Ad	iuotmont	
Pad	d Elevation:	0.0 feet			Heavy	TTUCKS	. 8.	004	Grade Ad	usuneni	0.0
Road	d Elevation:	0.0 feet		La	ne Equi	valent	Distan	ce (in i	feet)		
R	oad Grade:	0.0%				Autos	: 44.	931			
	Left View:	-90.0 degrees		1	Medium	Trucks	: 44.	733			
	Right View:	90.0 degrees			Heavy	Trucks	: 44.	752			
FHWA Noise Model		I									
VehicleType	REMEL	Traffic Flow	Distan		Finite R		Fresr	-	Barrier Att		m Atten
Autos:	68.46	-8.18		0.59		-1.20		-4.65		000	0.00
Medium Trucks:	79.45	-23.87		0.62		-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-20.66		0.62		-1.20		-5.43	0.0	000	0.00
Unmitigated Noise					<u> </u>			1		Т	
	eq Peak Hou			eq Ever		Leq I			Ldn		VEL
Autos:	59.		7.7		56.4		50.3		58.		59
Medium Trucks:	55.		1.1		43.6		52.4		58.	-	58
Heavy Trucks: Vehicle Noise:	63.		9.0		55.6		60.2		66.4		66
	65.		1.8		59.1		61.3	2	67.	(67
Centerline Distance	e to Noise Co	ntour (in feet)		70 dB,	4	65 (IBA		0 dBA	55	dBA
		L	dn:		35		75		162		34
		-	EL:		00		77		166		35

Thursday, October 6, 2022

F	HWA-RD	-77-108 HIGH	WAY NO	DISE	PREDIC	TION M	ODEL (§)/12/2	021)		
Scenario: OY Road Name: Ba Road Segment: s/o	rnett Rd.	Rd.					Name: E umber: 1		tt and Etha	nac	
SITE SPEC	IFIC IN	PUT DATA				N	OISE N	IODE	L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic	: (Adt):	2,210 vehicle	s					Autos	15		
Peak Hour Perce	ntage:	10.00%			Me	dium Tru	icks (2 A	xles).	15		
Peak Hour V	olume:	221 vehicles			He	avy Truc	cks (3+ A	xles).	15		
Vehicle	Speed:	45 mph		V	ehicle I	Mix					
Near/Far Lane Dis	tance:	45 feet		-		icleType		Day	Evening	Night	Daily
Site Data								75.6%	-	10.5	
Barrier H	leiaht [.]	0.0 feet			Me	edium Tr	ucks:	48.9%	6 2.2%	48.99	% 1.84%
Barrier Type (0-Wall, 1-		0.0			F	leavy Tr	ucks:	47.3%	5.4%	47.39	% 0.74%
Centerline Dist. to E	Barrier:	50.0 feet			laisa Sa	urco El	evations	(in f	ootl		
Centerline Dist. to Ob	server:	50.0 feet		74	10136 30	Auto:		000	eel)		-
Barrier Distance to Ob	server:	0.0 feet			Mediur	n Trucks		297			
Observer Height (Above	e Pad):	5.0 feet				y Trucks		04	Grade Ad	liustmei	nt: 0.0
Pad Ele	vation:	0.0 feet								juounoi	1. 0.0
Road Ele	vation:	0.0 feet		L	ane Equ		Distanc		feet)		
	Grade:	0.0%				Autos					
	t View:	-90.0 degree				m Trucks					
Righ	t View:	90.0 degree	s		Heav	y Truck	5. 44.	752			
FHWA Noise Model Cal	culations	;									
	MEL	Traffic Flow	Distar		Finite	Road	Fresn		Barrier Att	en Be	erm Atten
Autos:	68.46	-8.51		0.59		-1.20		-4.65		000	0.000
Medium Trucks:	79.45	-25.75		0.62		-1.20		-4.87		000	0.000
Heavy Trucks:	84.25	-29.70		0.62	2	-1.20		-5.43	0.	000	0.000
Unmitigated Noise Leve			barrier a	ttenu	uation)						
	Peak Hou			eq Ev	ening	Leq	Night		Ldn		CNEL
Autos:	59.	-	57.3		56.0		50.0		58.		59.1
Medium Trucks:	53.	-	19.2		41.7		50.5		56.	-	56.7
Heavy Trucks:	54.	•	19.9		46.5		51.2		57.		57.5
Vehicle Noise:	61.	2	58.6		56.6		55.4		62.	3	62.6
Centerline Distance to I	Voise Co	ntour (in feet)									
			1	70 d	BA	65 (dBA		60 dBA		5 dBA
			Ldn: IEL:		15 16		33 35		71 75		154 161

	FHWA-RL	0-77-108 HIGH	WATN	UISE	PREDIC	TION	ODEL (9	/12/2	021)		
Scenar	io: OYCP					Project	Name: B	arnet	t and Ethar	nac	
Road Nam	ne: Barnett Rd.					Job N	umber: 1	4775			
Road Segme	nt: s/o Ethanad	Rd.									
	SPECIFIC IN	PUT DATA								5	
Highway Data				3	Site Con	ditions	(Hard = 1	10, So	oft = 15)		
Average Daily	Traffic (Adt):	2,607 vehicle	es				A	utos:	15		
Peak Hour	Percentage:	10.00%			Me	dium Tri	ucks (2 A	xles):	15		
Peak H	lour Volume:	261 vehicles	5		He	avy Tru	cks (3+ A	xles):	15		
Ve	hicle Speed:	45 mph			Vehicle I	Aiv					
Near/Far La	ne Distance:	45 feet		-		cleTvpe		Day	Evening	Night	Daily
Site Data					veni			75.6%			92.489
						, dium T		18.9%		48.9%	
	rrier Height:	0.0 feet						18.9% 17.3%		48.9%	
Barrier Type (0-W	. ,	0.0			, r	leavy T	UCKS: 2	17.3%	5.4%	47.3%	5.05%
Centerline Di		50.0 feet		1	Noise So	urce El	evations	(in f	eet)		
Centerline Dist.		50.0 feet				Auto	s: 0.0	00			
Barrier Distance		0.0 feet			Mediur	n Truck	s: 2.2	97			
Observer Height (· ,	5.0 feet			Heav	y Truck	s: 8.0	04	Grade Adj	iustment	0.0
	ad Elevation:	0.0 feet							-		
	ad Elevation:	0.0 feet		1	Lane Equ				feet)		
1	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degree	es			n Truck		33			
	Right View:	90.0 degree	es		Heav	y Truck	s: 44.7	52			
FHWA Noise Mode	el Calculation	s		-							
VehicleType											
venicierype	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	e/	Barrier Atte	en Ber	m Atten
Autos:		Traffic Flow -8.02	Dista	0.59		Road -1.20		el 4.65	Barrier Atte 0.0		
	68.46		Dista		9		-		0.0		0.00
Autos:	68.46 79.45	-8.02	Dista	0.5	9 2	-1.20	-	4.65	0.0	000	0.00
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	68.46 79.45 84.25 e Levels (with	-8.02 -23.76 -20.64 put Topo and	barrier	0.59 0.62 0.62 atten	9 2 2 uation)	-1.20 -1.20 -1.20	-	4.65 4.87	0.0 0.0 0.0	000	0.00 0.00 0.00
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType	68.46 79.45 84.25 e Levels (with Leg Peak Hou	-8.02 -23.76 -20.64 put Topo and r Leq Day	barrier	0.59 0.62 0.62 atten	9 2 2 uation) vening	-1.20 -1.20 -1.20	Night	4.65 4.87	0.0 0.0 0.0	000 000 000 Ci	0.00 0.00 0.00 VEL
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	68.46 79.45 84.25 e Levels (with Leg Peak Hou 59	-8.02 -23.76 -20.64 out Topo and r Leq Day .8	barrier / L 57.8	0.59 0.62 0.62 atten	9 2 2 <i>uation)</i> <i>vening</i> 56.5	-1.20 -1.20 -1.20	- - Night 50.5	4.65 4.87	0.0 0.0 0.0 0.0 58.9	000 000 000 C/	0.00 0.00 0.00 NEL 59.3
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 59 55	-8.02 -23.76 -20.64 Dut Topo and r Leq Day .8 .1	<i>barrier</i> / L 57.8 51.2	0.59 0.62 0.62 atten	9 2 2 <i>vening</i> 56.5 43.7	-1.20 -1.20 -1.20	- Night 50.5 52.5	4.65 4.87	0.0 0.0 0.0 <i>Ldn</i> 58.9 58.9	000 000 000 C/	0.00 0.00 0.00 NEL 59.3
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 59 55	-8.02 -23.76 -20.64 Dut Topo and r Leq Day .8 .1	barrier / L 57.8	0.59 0.62 0.62 atten	9 2 2 <i>uation)</i> <i>vening</i> 56.5	-1.20 -1.20 -1.20	- - Night 50.5	4.65 4.87	0.0 0.0 0.0 0.0 58.9	000 000 000 C/	0.00 0.00 0.00 VEL 59.1 58. 66.1
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 59 55 63	-8.02 -23.76 -20.64 Dut Topo and r Leq Day .8 .1 .0	<i>barrier</i> / L 57.8 51.2	0.59 0.62 0.62 atten	9 2 2 <i>vening</i> 56.5 43.7	-1.20 -1.20 -1.20	- Night 50.5 52.5	4.65 4.87	0.0 0.0 0.0 <i>Ldn</i> 58.9 58.9	000 000 000 C/ 000	0.00 0.00 0.00 VEL 59. 58. 66.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 59 55 63 65	-8.02 -23.76 -20.64 but Topo and r Leq Day .8 .1 .0 .2	barrier 57.8 51.2 59.0 61.8	0.59 0.62 0.62 atten	9 2 2 <i>vening</i> 56.5 43.7 55.6 59.2	-1.20 -1.20 -1.20 <i>Leq</i>	Night 50.5 52.5 60.2 61.3	4.65 4.87 5.43	0.0 0.0 0.0 58.9 58.6 66.4 67.7	000 000 000 000 000 000 000	0.00 0.00 0.00 VEL 59. 58. 66. 67.
Autos: Medium Trucks: Heavy Trucks: VenicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 59 55 63 65	-8.02 -23.76 -20.64 but Topo and r Leq Day .8 .1 .0 .2 intour (in feet)	barrier 57.8 51.2 59.0 61.8	0.59 0.62 0.62 atten	9 2 2 <i>wation)</i> <i>vening</i> 56.5 43.7 55.6 59.2	-1.20 -1.20 -1.20 <i>Leq</i>	Night 50.5 52.5 60.2 61.3	4.65 4.87 5.43	0.0 0.0 0.0 58.9 58.6 66.4 67.7 60 dBA	000 000 000 000 000 CI 00 55 55	0.000 0.000 0.000 VEL 59.3 58. 66.3 67.3 67.3
Autos: Medium Trucks: Heavy Trucks: VenicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	68.46 79.45 84.25 e Levels (with Leq Peak Hou 59 55 63 65	-8.02 -23.76 -20.64 <i>r</i> Leq Day .8 .1 .0 .2 .2 <i>mtour (in feet</i> ,	barrier 57.8 51.2 59.0 61.8	0.59 0.62 0.62 atten	9 2 2 <i>vening</i> 56.5 43.7 55.6 59.2	-1.20 -1.20 -1.20 <i>Leq</i>	Night 50.5 52.5 60.2 61.3	4.65 4.87 5.43	0.0 0.0 0.0 58.9 58.6 66.4 67.7	000 000 000 000 000 7 7 7 7 7	0.000 0.000 0.000 VEL 59.3 58.1 66.3 67.5

FHWA-RD-77-108 HIGHWA	Y NOISE	PREDIC	TION M	ODEL (9	/12/20	021)		
Scenario: E Road Name: Ethanac Rd. Road Segment: w/o Murrieta Rd.				Name: E umber: 1		and Ethar	nac	
SITE SPECIFIC INPUT DATA						L INPUTS	5	
Highway Data	5	Site Cond	ditions (Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 13,040 vehicles				A	Autos:	15		
Peak Hour Percentage: 10.00%		Mec	dium Tru	icks (2 A	xles):	15		
Peak Hour Volume: 1,304 vehicles		Hea	avy Truc	ks (3+ A	xles):	15		
Vehicle Speed: 55 mph	1	/ehicle M	lix					
Near/Far Lane Distance: 78 feet	F		cleType		Dav	Evenina	Niaht	Daily
Site Data					75.6%	14.0%	10.5%	
Barrier Height: 0.0 feet		Me	dium Tr	ucks:	48.9%	2.2%	48.9%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0		н	leavy Tr	ucks:	47.3%	5.4%	47.3%	0.74%
Centerline Dist. to Barrier: 53.0 feet	-					0		
Centerline Dist. to Observer: 53.0 feet	4	Voise So				et)		
Barrier Distance to Observer: 0.0 feet			Autos n Trucks					
Observer Height (Above Pad): 5.0 feet						Grade Adj	untmont	
Pad Elevation: 0.0 feet		neav	y Trucks	. 0.0	104	Grade Auj	usunen	. 0.0
Road Elevation: 0.0 feet	L	ane Equ	ivalent	Distanc	e (in f	eet)		
Road Grade: 0.0%			Autos	: 36.2	35			
Left View: -90.0 degrees		Mediun	n Trucks	: 35.9	90			
Right View: 90.0 degrees		Heavy	y Trucks	36.0)14			
FHWA Noise Model Calculations	l							
	istance	Finite I		Fresne		Barrier Atte	en Bei	rm Atten
Autos: 71.78 -1.67	1.99	-	-1.20		4.66	0.0		0.000
Medium Trucks: 82.40 -18.91	2.04		-1.20		4.87	0.0		0.000
Heavy Trucks: 86.40 -22.86	2.03	3	-1.20		-5.40	0.0	000	0.000
Unmitigated Noise Levels (without Topo and barr	rier atten	uation)						
VehicleType Leq Peak Hour Leq Day	Leg Ev		Leq I			Ldn		NEL
Autos: 70.9 68.9		67.6		61.6		70.0		70.6
Medium Trucks: 64.3 60.4		52.9		61.7		67.9		67.9
Heavy Trucks: 64.4 60.3		56.9		61.6		67.8		67.9
Vehicle Noise: 72.5 70.0		68.1		66.4		73.4	ł	73.8
Centerline Distance to Noise Contour (in feet)								
	70 c		65 c		6	0 dBA		dBA
Ldn		90		194		417		898
CNEL		94		204		439		945

	FHWA-RD	-77-108 HIGH	WAY	NOISE P	REDICTION	MODEL	. (9/12/2	021)		
Scenari Road Nam	o: E+P e: Ethanac Rd						: Barnel : 14775	tt and Etha	nac	
	nt: w/o Murrieta				000	i van bei	. 14775			
	SPECIFIC IN	PUT DATA						LINPUT	S	
Highway Data				Si	te Condition	s (Hard	= 10, Se	oft = 15)		
Average Daily	Traffic (Adt):	13,047 vehicle	s				Autos:	15		
Peak Hour	Percentage:	10.00%			Medium 1	rucks (2	2 Axles):	15		
Peak H	our Volume:	1,305 vehicles	5		Heavy Tr	ucks (3-	+ Axles):	15		
Ve	hicle Speed:	55 mph		Ve	hicle Mix					
Near/Far La	ne Distance:	78 feet		-	Vehicle Typ	e	Dav	Evening	Night	Daily
Site Data						Autos:	75.6%		10.5%	
Bar	rier Height:	0.0 feet			Medium	Trucks:	48.9%	5 2.2%	48.9%	1.849
Barrier Type (0-W	•	0.0			Heavy	Trucks:	47.3%	5.4%	47.3%	0.749
Centerline Dis		53.0 feet		_						
Centerline Dist.		53.0 feet		N	oise Source I			eet)		
Barrier Distance		0.0 feet			Aut		0.000			
Observer Height (Above Pad):	5.0 feet			Medium Truc		2.297	0		
÷ (d Elevation:	0.0 feet			Heavy Truc	KS:	8.004	Grade Ad	usiment.	0.0
Roa	d Elevation:	0.0 feet		Lá	ne Equivale	nt Dista	nce (in	feet)		
F	Road Grade:	0.0%			Aut	os: 3	6.235			
	Left View:	-90.0 degree	s		Medium Truc	ks: 3	5.990			
	Right View:	90.0 degree	:S		Heavy Truc	ks: 3	6.014			
FHWA Noise Mode						T				
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite Road		snel	Barrier Att		m Atten
Autos:	71.78	-1.67		1.99	-1.20		-4.66		000	0.00
Medium Trucks:	82.40	-18.91		2.04	-1.20 -1.20		-4.87		000	0.00
Heavy Trucks:	86.40	-22.86		2.03)	-5.40	0.0	000	0.00
Unmitigated Noise			-		,					
	Leq Peak Hou			Leq Eve		q Night		Ldn		VEL
Autos:	70.		68.9		67.6	-	1.6	70.0		70.
Medium Trucks:	64.	-	60.4		52.9	-	1.7	67.9		67.
Heavy Trucks: Vehicle Noise:	64. 72		60.3 70.0		56.9 68.1	-	1.6 3.4	67.8		67.
		-			68.1	66	5.4	/3.4	+	73.
Centerline Distanc	e to Noise Co	ntour (in feet)		70 dF	0. 6	5 dBA		50 dBA	55	dBA
			Ldn:	70 UE	90		94	50 UBA 417		UDA 899
			VEL:		90 95		94)4	417		94
		0/			50	21		400		540

Thursday, October 6, 2022

FRWA-F	RD-77-108 HIGHW	VAY NOIS	SE PREDIC	TION M	ODEL (9/1	2/2021)	
Scenario: OYC Road Name: Ethanac F Road Segment: w/o Murrie					Name: Ba umber: 14	rnett and Ethar 775	nac
SITE SPECIFIC I	NPUT DATA					DEL INPUTS	3
Highway Data			Site Con	ditions		, Soft = 15)	
Average Daily Traffic (Adt):	26,040 vehicles					tos: 15	
Peak Hour Percentage:	10.00%				icks (2 Axl	, .	
Peak Hour Volume:	1		He	avy Truc	ks (3+ Axl	es): 15	
Vehicle Speed:	55 mph		Vehicle	Wix			
Near/Far Lane Distance:	78 feet		Veh	icleType	Da	y Evening	Night Daily
Site Data				A	utos: 75	.6% 14.0%	10.5% 97.42
Barrier Height:	0.0 feet		М	edium Tr	ucks: 48	.9% 2.2%	48.9% 1.84
Barrier Type (0-Wall, 1-Berm):			1	Heavy Tr	ucks: 47	.3% 5.4%	47.3% 0.74
Centerline Dist. to Barrier:	53.0 feet		Noine C	uree El	evations (I	in faat)	
Centerline Dist. to Observer:	53.0 feet		Noise 30	Autos			
Barrier Distance to Observer:	0.0 feet		Madiu	m Trucks	. 0.000	-	
Observer Height (Above Pad):	5.0 feet			т Trucks /y Trucks			ustment: 0.0
Pad Elevation:	0.0 feet		Heat	/y TTUCKS	s. 0.004	4 Orade Adj	usinen. 0.0
Road Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in feet)	
Road Grade:	0.0%			Autos	36.23	5	
Left View:	-90.0 degrees		Mediu	m Trucks	35.99	D	
Right View:	90.0 degrees		Heav	/y Trucks	36.01	4	
FHWA Noise Model Calculatio	ns		1				
VehicleType REMEL	Traffic Flow	Distance	e Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Autos: 71.7	8 1.33	1	.99	-1.20	-4	.66 0.0	0.00
Medium Trucks: 82.4	0 -15.90	2	2.04	-1.20	-4	.87 0.0	0.00
Heavy Trucks: 86.4	0 -19.86	2	2.03	-1.20	-5.	.40 0.0	0.00
Unmitigated Noise Levels (with			,				01/5/
VehicleType Leq Peak Ho			Evening		Night	Ldn	CNEL
		1.9	70.6		64.6	73.0	
		3.4	55.9		64.7	70.9	
		3.3 3.0	59.9 71.1		64.6 69.4	70.8	
		3.0	71.1		69.4	76.4	76
Centerline Distance to Noise C	Contour (in feet)	7	0 dBA	65 (1BA	60 dBA	55 dBA
		dn:	142	001	307	661	1,42
	CNI		142		323	696	1,42
	ON		.50		020	550	1,40

Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 86.40 -19.86 2.03 -1.20 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Right Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 73.0 73.0 Heavy Trucks: 67.3 63.3 55.9 64.7 70.8 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9		FHWA-RD)-77-108 HIGH\	VAY NOI	SE PREDIC	TION M	ODEL (9/	12/202	21)		
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 26,05 vehicles Autos: 15 Peak Hour Pecentage: 10,00% Medium Trucks (2 Axles): 15 Peak Hour Volume: 2,605 vehicles Medium Trucks (2 Axles): 15 Vehicle Speed: 55 mph Medium Trucks (2 Axles): 15 Vehicle Speed: 78 feet Vehicle Mix Vehicle Mix Barrier Height: 0.0 feet Medium Trucks: 48.9% 2.2% 48.9% 18.4% Barrier Height: 0.0 feet Medium Trucks: 48.9% 2.2% 48.9% 1.4% Barrier Jost to Barrier: 53.0 feet Moise Source Elevations (in feet) Vehice Mix 0.74% Centerline Dist. to Diserver: 0.0 feet Autos: 7.62% Medium Trucks: 2.297 Observer Height View: -90.0 degrees Road Grade: 0.0% Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Lane Equivalent Distance (in feet) Heavy Trucks: 35.990 Heavy Trucks:	Road Nam	e: Ethanac Rd							and Ethar	nac	
Highway Data Site Conditions (Hard = 10, Soft = 15) Average Daily Traffic (Adt): 26,047 vehicles Autos:: 15 Peak Hour Procentage: 10,00% Medium Trucks (24.84e): 15 Peak Hour Volume: 2,605 vehicles Medium Trucks (24.84e): 15 Vehicle Speed: 55 mph Vehicle Mix Vehicle 7/pe Day Evening Night Daily Site Data	SITE	SPECIFIC IN	PUT DATA			N	OISE M	ODEL	INPUTS	5	
Meak Hour Percentage: 10.00% Medium Trucks (2 Axles): 15 Peak Hour Volume: 2.605 vehicles Heavy Trucks (3 + Axles): 15 Vehicle Speed: 55 mph Vehicle Mix Vehicle Mix Site Data Autos: 75 6% 14.0% 10.5% 97.42% Barrier Height: 0.0 feet Autos: 75 6% 14.0% 10.5% 97.42% Barrier Height: 0.0 feet Medium Trucks: 48.9% 2.2% 48.9% 0.74% Centerline Dist. to Dserver: 53.0 feet Heavy Trucks: 47.3% 0.74% Barrier Distance to Observer: 0.0 feet Autos: 0.00 Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Autos: 0.00 Medium Trucks: 36.235 Road Grade: 0.0% Late Equivalent Distance (In feet) Autos: 36.235 Medium Trucks: 82.40 -15.90 2.04 -120 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.98 2.03 -					Site Con						
Peak Hour Volume: 2.605 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet Vehicle Mix Site Data Autos: 75.6% 14.0% 0.5% 97.42% Barrier Height: 0.0 feet Autos: 75.6% 14.0% 0.5% 97.42% Barrier Height: 0.0 feet Autos: 75.6% 14.0% 0.74% Centerline Dist. to Barrier: 53.0 feet Medium Trucks: 48.9% 2.2% 48.9% 1.84% Pad Elevation: 0.0 feet Medium Trucks: 2.297 Heavy Trucks: 8.7.9% 7.4% Pad Elevation: 0.0 feet Autos: 0.000 Medium Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Left View: 90.0 degrees Medium Trucks: 36.235 Medium Trucks: 8.900 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -120 -4.66 0.000 0.000 Medium Trucks: 86.40 -19.86	Average Daily	Traffic (Adt):	26,047 vehicle	5			Au	utos:	15		
Vehicle Speed: Near/Far Lane Distance: 55 mph 78 feet Vehicle Mix Site Data Autos: 76.6% 14.0% 10.5% 74.2% Barrier Height: 0.0 feet Medium Trucks: 48.9% 1.24% 1.84% Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 53.0 feet Medium Trucks: 47.3% 0.74% Barrier Distance to Observer: 0.0 feet Multics: 0.000 Medium Trucks: 47.3% 0.74% Barrier Distance to Observer: 0.0 feet Multics: 0.000 Medium Trucks: 2.297 Pad Elevation: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 36.014 Iane Equivalent Distance (in feet) Autos: 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -19.86 2.03 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 <td>Peak Hour</td> <td>Percentage:</td> <td>10.00%</td> <td></td> <td>Me</td> <td>dium Tru</td> <td>ıcks (2 Ax</td> <td>les):</td> <td>15</td> <td></td> <td></td>	Peak Hour	Percentage:	10.00%		Me	dium Tru	ıcks (2 Ax	les):	15		
Near/Far Lane Distance: 78 feet Venicle Type Day Evening Night Daily Site Data Autos: 76.6% 14.0% 10.5% 97.42% Barrier Height: 0.0 feet Medium Trucks: 48.9% 2.2% 48.9% 1.8% Barrier Height: 0.0 Feet Medium Trucks: 47.3% 0.74% Centerline Dist. to Darrier: 53.0 feet Noise Source Elevations (in feet) 0.00 1.4% Barrier Distance to Observer: 0.0 feet Autos: 0.00 Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.04 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 36.014 1.04 1.04 1.04 VehicleType REMEL Traffic Flow Distance Finite Road Fresnet Barrier Atten Berm Atten Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90	Peak H	our Volume:	2,605 vehicles		He	avy Truc	:ks (3+ Ax	les):	15		
Near/Far Lane Distance: 78 feet VehicleType Day Evening Night Daly Site Data Autos:: 76.56* 14.0% 10.5% 91.2% 91.2% Barrier Type (0-Wall, 1-Berm): 0.0 feet Medium Trucks: 48.9% 2.2% 48.9% 0.2% 47.9% 0.74% 0.4% 0.74% 0.74% 0.74% 0.74% 0.74% 0.74% 0.74% 0.74% 0.74% 0.74%	Vel	nicle Speed:	55 mph		Vehicle	Mix					
Site Data Autos: 75.6% 14.0% 10.5% 97.42% Barrier Height: 0.0 feet Medium Trucks: 48.9% 2.2% 48.9% 1.84% Barrier Height: 0.0 Centerine Dist. to Barrier: 53.0 feet Noise Source Elevations (in feet) Centerine Dist. to Diserver: 0.0 feet Noise Source Elevations (in feet) Autos: 0.000 Diserver Height (Above Pad): 5.0 feet Noise Source Elevation: 0.0 feet Autos: 36.04 Road Elevation: 0.0 feet Left View: -90.0 degrees Medium Trucks: 2.297 Heavy Trucks: 80.04 Grade Adjustment: 0.0 Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Claculations Vehicle Type Traffic Flow Distance Finite Road Fresnet Barrier Atten Berm Atten Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -120 -5.40 0.0000	Near/Far Lar	ne Distance:	78 feet				D	av F	Venina	Niaht	Daily
Barrier Type (D-Wall, 1-Berm): 0.0 feet Heavy Trucks: 47.3% 5.4% 47.3% 0.74% Centerline Dist. to Diserver: 53.0 feet Noise Source Elevations (in feet) Noise Source Elevations (in feet) Barrier Type (D-Wall, 1-Berri): 0.0 feet Molise Source Elevations (in feet) Noise Source Elevations (in feet) Barrier Type (D-Wall, 1-Berri): 0.0 feet Lane Equivalent Distance (in feet) Noise Source Elevation: Noise Source Elevation: Noise Source Elevation: Noise Source Elevations (in feet) Road Elevation: 0.0 feet Lane Equivalent Distance (in feet) Autos: 83.25 Road Grade: 0.0% Autos: 36.23 Heavy Trucks: 86.04 Heavy Trucks: 80.04 FHWA Noise Model Calculations One degrees Finite Road Frence Barrier Atten Berm Atten Autos: 71.78 1.34 199 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -1.98	Site Data								•		
Barrier Type (0-Wall, 1-Bern): 0.0 Heavy Trucks: 47.3% 5.4% 47.3% 0.74% Centerline Dist. to Desriver: 5.0 feet Noise Source Elevations (in feet) Autos: 0.00 Barrier Distance to Observer: 0.0 feet Molse Source Source Elevations (in feet) Autos: 0.00 Barrier Distance to Observer: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Medium Trucks: 8.004 Grade Adjustment: 0.0 FHWA Noise Model Calculations O.0 feet Medium Trucks: 36.014 Earrier Atten Berm Atten Addition Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.03 -1.20 -4.66 0.000 0.000 Medium Trucks: 86.40 -19.86 2.03 -1.20 -4.66 0.000 0.000	Bar	rier Height:	0.0 feet		М	edium Tr	ucks: 4	8.9%	2.2%	48.9%	1.84%
Centerline Dist. to Barrier: 53.0 feet Noise Source Elevations (in Feet) Centerline Dist. to Observer: 53.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Autos: 0.000 Pad Elevation: 0.0 feet Medium Trucks: 2.297 Pad Elevation: 0.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0% Autos: 36.235 Medium Trucks: 35.990 Heavy Trucks: 36.014 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berrn Atten Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -19.86 2.03 -1.20 -4.66 0.000 0.000 Medium Trucks: 67.3 63.3 59.9 64.6 70.9 70.9 Met						Heavy Tr	ucks: 4	7.3%	5.4%	47.3%	0.74%
Centerline Dist. to Observer: 5.0 feet Autos: 0.000 Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Medium Trucks: 2.297 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Image: Comparison of the comparison of th		. ,	53.0 feet		Noiso S	ourco El	ovations	(in foo	(f)		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297 Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lent View: 8.004 Grade Adjustment: 0.0 Road Grade: 0.0 feet Lent View: 90.0 degrees Lent View: 8.004 Grade Adjustment: 0.0 Heavy Trucks: 8.004 Grade Adjustment: 0.0 Lent View: 90.0 degrees Lent View: 35.990 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: Tr1.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -12.0 -4.67 0.000 0.000 Medium Trucks: 86.40 -19.86 2.03 -12.0 -5.40 0.000 0.000 Immitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Vening Leq Vening Leq Night Ldn<	Centerline Dist.	o Observer:	53.0 feet		10136 30			,	<i>y</i>		
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.004 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: 36.235 Left View: 90.0 degrees Medium Trucks: 36.205 Robitor Trucks: 82.40 -15.90 2.04 Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.67 0.000 0.000 Medium Trucks: 86.40 -19.86 2.03 -1.20 -4.66 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) Vehicle/No Leg Day Leg Reving Leg No Reving 70.9 70.9 <	Barrier Distance t	o Observer:	0.0 feet		Madiu		0.00				
Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Glevation: 0.0 feet Lane Equivalent Distance (in feet) Road Grade: 0.0% Autos: 36.235 Left View: -90.0 degrees Medium Trucks: 36.014 FHWA Noise Model Calculations Vehicle Type REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 86.40 -19.86 2.03 -1.20 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leg Peak Hour Leg Revening Leg Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 70.8 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8	Observer Height (J	Above Pad):	5.0 feet						Grade Adi	ustment [.]	0.0
Road Grade: 0.0% Autos: 36.235 Left View: -90.0 degrees Medium Trucks: 35.990 Heavy Trucks: 36.014 FHWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berm Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -19.86 2.03 -1.20 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leg Peak Hour Leg Day Leg Revening Leg Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 70.8 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 <	Pa	d Elevation:	0.0 feet							uounom.	0.0
Left View: -90.0 degrees Medium Trucks: 35.90 Right View: 90.0 degrees Heavy Trucks: 35.90 FHMA Noise Model Calculations Heavy Trucks: 36.014 VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: T1.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -120 -4.67 0.000 0.000 Imitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 73.0 73.6 Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerlin	Roa	d Elevation:	0.0 feet		Lane Eq	uivalent	Distance	(in fe	et)		
Right View: 90.0 degrees Heavy Trucks: 36.014 FHWA Noise Model Calculations Interface Finite Road Fresnel Barrier Atten Bern Atten VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Bern Atten Medium Trucks: 82.40 -15.90 2.04 -120 -4.66 0.000 0.000 Medium Trucks: 86.40 -19.86 2.03 -120 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Revening Leq Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 73.0 73.6 Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.8 Medium Trucks: 67.5 73.0 71.1 69.4 76.4 76.8 Centerline Dis	F	Road Grade:	0.0%					35			
FWWA Noise Model Calculations Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.66 0.000 0.000 Medium Trucks: 86.40 -19.86 2.03 -12.0 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) Vehicle Type Leg Peak Hour Leg Day Leg Evening Leq Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 70.8 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet)		Left View:	-90.0 degree	5				90			
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.67 0.000 0.000 Heavy Trucks: 86.40 -19.86 2.03 -1.20 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.6 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (In feet) To dBA 65 dBA 60 dBA 55 dBA Ldn: 142 307 661 1.425 55 dBA		Right View:	90.0 degree	5	Hear	/y Trucks	36.01	14			
Autos: 71.78 1.34 1.99 -1.20 -4.66 0.000 0.000 Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.67 0.000 0.000 Heavy Trucks: 86.40 -19.86 2.03 -1.20 -5.40 0.000 0.000 Umitigated Noise Levels (without Topo and barrier attenuation) Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 70.3 70.9 Medium Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet)	FHWA Noise Mode	I Calculations	s		1						
Medium Trucks: 82.40 -15.90 2.04 -1.20 -4.87 0.000 0.000 Heavy Trucks: 86.40 -19.86 2.03 -1.20 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) VehiceType Leg Deak Hour Leg Day Leg Nening Leg Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 73.0 73.6 Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicel Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet) Image: Contour (in feet) <th>VehicleType</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>n Atten</th>	VehicleType										n Atten
Heavy Trucks: 86.40 -19.86 2.03 -1.20 -5.40 0.000 0.000 Unnitigated Noise Levels (without Topo and barrier attenuation) Leq Reak Hour Leq Day Leq Evening Leq Night Ldn CNEL VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet)											
Unmitigated Noise Levels (without Topo and barrier attenuation) VehicleType Leq Peak Hour Leq Day Leq Vehicle Leq Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 73.0 73.6 Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet)											
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL Autos: 73.9 71.9 70.6 64.6 73.0 73.6 Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 142 307 661 1.425	Heavy Trucks:	86.40	-19.86	:	2.03	-1.20	-5	5.40	0.0	00	0.000
Autos: 73.9 71.9 70.6 64.6 73.0 73.6 Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet) Image: Contour (in	Unmitigated Noise	Levels (with	out Topo and b	arrier at	tenuation)						
Medium Trucks: 67.3 63.4 55.9 64.7 70.9 70.9 Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 142 307 661 1.425							•	L			
Heavy Trucks: 67.4 63.3 59.9 64.6 70.8 70.9 Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet) 20 dBA 65 dBA 60 dBA 55 dBA Ldn: 142 307 661 1.425											
Vehicle Noise: 75.5 73.0 71.1 69.4 76.4 76.8 Centerline Distance to Noise Contour (in feet) Image: Conto							• · · · ·				
Centerline Distance to Noise Contour (in feet) 70 dBA 65 dBA 60 dBA 55 dBA Ldn: 142 307 661 1,425	· · · ·										
TO dBA 65 dBA 60 dBA 55 dBA Ldn: 142 307 661 1,425	Vehicle Noise:	75	.5 7	3.0	71.1		69.4		76.4	Ļ	76.8
Ldn: 142 307 661 1,425	Centerline Distanc	e to Noise Co	ontour (in feet)					_			
						65 0		60		55	
CNEL: 150 323 696 1,499											· ·
			CN	EL:	150		323		696		1,499

FHWA-	RD-77-108 HIGH	IWAY N	OISE P	REDIC	TION M	IODEL (9	9/12/20)21)		
Scenario: E Road Name: Ethanac Road Segment: e/o Murri						Name: E lumber: 1		and Ethar	nac	
SITE SPECIFIC	INPUT DATA							L INPUTS	3	
Highway Data			Si	te Con	ditions	(Hard =	10, Sc	ft = 15)		
Average Daily Traffic (Adt):	14,860 vehicl	es					Autos:	15		
Peak Hour Percentage:	10.00%			Me	dium Tri	ucks (2 A	xles):	15		
Peak Hour Volume:	1,486 vehicle	s		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Speed:	55 mph		Ve	hicle l	Mix					
Near/Far Lane Distance:	78 feet				icleType		Dav	Evening	Night	Daily
Site Data				VCII			75.6%		10.5%	
Barrier Height:	0.0 feet			M	edium Ti	rucks:	48.9%	2.2%	48.9%	1.84%
Barrier Type (0-Wall, 1-Berm).				1	Heavy Ti	rucks:	47.3%	5.4%	47.3%	0.74%
Centerline Dist. to Barrier.										
Centerline Dist. to Observer			NC	oise Sc		evations		et)		
Barrier Distance to Observer	0.0 feet				Auto		000			
Observer Height (Above Pad).	5.0 feet				m Truck		297	Our de Adi		
Pad Elevation				Heav	/y Truck	s: 8.0	004	Grade Adj	ustment	0.0
Road Elevation:	0.0 feet		La	ne Eq	uivalent	t Distanc	e (in i	eet)		
Road Grade:	0.0%				Auto	s: 36.2	235			
Left View.	-90.0 degre	es		Mediu	m Truck	s: 35.9	990			
Right View.	90.0 degre	es		Heav	/y Truck	s: 36.0	014			
FHWA Noise Model Calculation	ons									
VehicleType REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos: 71.7	78 -1.10		1.99		-1.20		-4.66	0.0	00	0.000
Medium Trucks: 82.4	-18.34		2.04		-1.20		-4.87	0.0	00	0.000
Heavy Trucks: 86.4	40 -22.30		2.03		-1.20		-5.40	0.0	00	0.000
Unmitigated Noise Levels (with	thout Topo and	barrier	attenua	ation)						
VehicleType Leq Peak H			eq Eve			Night		Ldn		VEL
	71.5	69.5		68.2		62.1		70.6		71.2
	64.9	61.0		53.5		62.3		68.4		68.5
	64.9	60.9		57.5		62.1		68.3		68.4
Vehicle Noise:	73.1	70.5		68.6		66.9		74.0)	74.3
Centerline Distance to Noise	Contour (in feet)							r	
			70 dB		65	dBA	6	0 dBA	55	dBA
	-	Ldn:		98		211		455		980
	С	NEL:		103		222		479		1,031

	FHWA-RD	-77-108 HIGH	WAY N	IOISE P	REDICTION	IODEL	(9/12/2	021)		
	o: E+P e: Ethanac Rd nt: e/o Murrieta					t Name. Number.		t and Ethar	nac	
SITE	SPECIFIC IN	PUT DATA				NOISE	MODE		s	
Highway Data				Si	e Conditions				-	
Average Daily	Traffic (Adt):	14.941 vehicle	s				Autos:	15		
• •	()	10.00%			Medium Ti	rucks (2	Axles):	15		
	•	1,494 vehicles	5		Heavy Tru	icks (3+	Axles):	15		
Ve	hicle Speed:	55 mph		1/0	hicle Mix					
Near/Far La	ne Distance:	78 feet		ve	VehicleType	•	Dav	Evening	Night	Daily
Site Data						Autos:	75.6%		10.5%	
					Medium 1		48.9%		48.9%	1.839
	rier Height:	0.0 feet			Heavy 1				47.3%	0.749
Barrier Type (0-W	. ,	0.0							47.070	0.74
Centerline Dis		53.0 feet		No	ise Source E	levatio	ns (in fe	eet)		
Centerline Dist. Barrier Distance		53.0 feet			Auto	os: C	.000			
		0.0 feet 5.0 feet			Medium Truck	(s: 2	.297			
Observer Height (,				Heavy Truck	(s: 8	.004	Grade Adj	iustment.	0.0
	ad Elevation: ad Elevation:	0.0 feet 0.0 feet		10	ne Equivalen	t Dictor	nco (in	foot)		
	a Elevation: Road Grade:	0.0 Teet		La	Auto		6.235	eeŋ		
r	Left View:	-90.0 degree			Medium Truck		5.990			
	Right View:	90.0 degree			Heavy Truck		5.014			
FHWA Noise Mode	el Calculations	3								
VehicleType	REMEL	Traffic Flow	Dista	ance	Finite Road	Fres	nel	Barrier Atte	en Ber	m Atten
Autos:	71.78	-1.08		1.99	-1.20		-4.66	0.0	000	0.00
Medium Trucks:	82.40	-18.34		2.04	-1.20		-4.87		000	0.00
Heavy Trucks:	86.40	-22.30		2.03	-1.20		-5.40	0.0	000	0.00
Unmitigated Noise					,					
	Leq Peak Hou			Leq Eve		Night		Ldn		VEL
Autos:	71.	-	69.5		68.2	62		70.6	-	71.
Medium Trucks:	64.	-	61.0		53.5	62		68.4		68.
Heavy Trucks:	64.		60.9		57.5	62		68.3		68
Vehicle Noise:	73.		70.6		68.7	67	.0	74.0)	74.
Centerline Distanc	e to Noise Co	ntour (in feet)		70.12	4 05			0 -0 4		10.4
				70 dB		dBA		0 dBA		dBA
			Ldn: VEL:		98	21	-	456		982
		CI	VEL.		103	22	3	479		1,033

Thursday, October 6, 2022

FHWA-F	D-77-108 HIGHWA	Y NOISE	PREDICTIC	N MODEL	9/12/20	021)	_	_
Scenario: OYC Road Name: Ethanac F Road Segment: e/o Murrie				oject Name: lob Number:		t and Ethan	ac	
SITE SPECIFIC I	NPUT DATA					L INPUTS	;	
Highway Data		S	Site Conditi	ions (Hard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt):	32,870 vehicles				Autos:	15		
Peak Hour Percentage:	10.00%		Mediu	m Trucks (2	Axles):	15		
Peak Hour Volume:	3,287 vehicles		Heavy	Trucks (3+	Axles):	15		
Vehicle Speed:	55 mph	L.	/ehicle Mix					
Near/Far Lane Distance:	78 feet	F	Vehicle		Day	Evening	Night	Daily
Site Data				Autos:	75.6%	•	10.5%	
Barrier Height:	0.0 feet		Mediu	ım Trucks:	48.9%	2.2%	48.9%	1.849
Barrier Type (0-Wall, 1-Berm):	0.0		Hea	vy Trucks:	47.3%	5.4%	47.3%	0.749
Centerline Dist. to Barrier:	53.0 feet		laisa Saur	ce Elevation	e (in f.	ootl		
Centerline Dist. to Observer:	53.0 feet	~				el)		
Barrier Distance to Observer:	0.0 feet				.000 .297			
Observer Height (Above Pad):	5.0 feet		Medium T Heavv T		.297	Grade Adju	ictmont.	0.0
Pad Elevation:	0.0 feet		Heavy I	TUCKS: 8	004	Grade Aujo	Journerit.	0.0
Road Elevation:	0.0 feet	L	ane Equiva	alent Distan	ce (in i	feet)		
Road Grade:	0.0%			Autos: 36	.235			
Left View:	-90.0 degrees		Medium T	rucks: 35	.990			
Right View:	90.0 degrees		Heavy T	rucks: 36	.014			
FHWA Noise Model Calculatio	ns			-				
VehicleType REMEL	Traffic Flow D	istance	Finite Ro	ad Fresi	nel	Barrier Atte	n Berr	n Atten
Autos: 71.7	8 2.35	1.99	€ -1	1.20	-4.66	0.0	00	0.00
Medium Trucks: 82.4		2.04		1.20	-4.87	0.0		0.00
Heavy Trucks: 86.4	D -18.85	2.03	3 -1	1.20	-5.40	0.0	00	0.00
Unmitigated Noise Levels (wit		-						
VehicleType Leq Peak Ho		Leq Ev	•	Leq Night		Ldn		IEL
	4.9 72.9		71.6	65.		74.0		74.
	8.3 64.5		56.9	65.		71.9		71.
	8.4 64.3		60.9	65.	-	71.8		71.
	6.5 74.0	1	72.1	70.	4	77.5		77.
Centerline Distance to Noise (Contour (in feet)							
		70 d		65 dBA		60 dBA	55 (dBA
	Ldn:		166 175	359		772 812		1,664
	CNEL:							

		-77-108 HIGH						_			
Scenar	rio: OYCP					Project	Name:	Barnet	t and Ethai	nac	
Road Nan	ne: Ethanac Rd					Job N	umber:	14775			
Road Segme	nt: e/o Murrieta	Rd.									
	SPECIFIC IN	PUT DATA								s	
Highway Data				S	Site Cond	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	32,951 vehicle	es					Autos:	15		
Peak Hour	Percentage:	10.00%			Med	dium Tri	ucks (2	Axles):	15		
Peak F	lour Volume:	3,295 vehicles	5		Hea	avy True	cks (3+	Axles):	15		
Ve	ehicle Speed:	55 mph		v	/ehicle N	lix					
Near/Far La	ane Distance:	78 feet		F	Vehi	cleType		Day	Evening	Night	Daily
Site Data							Autos:	75.6%	14.0%	10.5%	97.43%
Ba	rrier Height:	0.0 feet			Me	dium T	rucks:	48.9%	2.2%	48.9%	1.84%
Barrier Type (0-W		0.0			H	leavy Ti	rucks:	47.3%	5.4%	47.3%	0.74%
	ist. to Barrier:	53.0 feet			loise So	uree El	overtier	a lin fe	ant)		
Centerline Dist.	to Observer:	53.0 feet		N	ioise 30	Auto			el)		
Barrier Distance	to Observer:	0.0 feet						000			
Observer Height	(Above Pad):	5.0 feet				n Truck		297	Grade Ad	iuotmont	0.0
° P	ad Elevation:	0.0 feet			Heav	y Truck	s: 8	004	Grade Au	usuneni	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	ivalent	Distan	ce (in i	feet)		
	Road Grade:	0.0%				Auto	s: 36	.235			
	Left View:	-90.0 degree	es		Mediun	n Truck	s: 35	.990			
	Right View:	90.0 degree	es		Heav	y Truck	s: 36	.014			
FHWA Noise Mod	el Calculations	;									
VehicleType	REMEL	Traffic Flow	Distan				-				
Autos:				ice	Finite	Road	Fres	iei	Barrier Att	en Ber	m Atten
Autos:	71.78	2.36		1.99		Road -1.20	Fres	-4.66		en Ber	
Autos: Medium Trucks:		2.36 -14.89)		Fresi		0.0		0.00
	82.40			1.99) 	-1.20	Fresi	-4.66	0.0 0.0	000	0.00
Medium Trucks: Heavy Trucks:	82.40 86.40	-14.89 -18.85	barrier a	1.99 2.04 2.03) []	-1.20 -1.20	Fresi	-4.66 -4.87	0.0 0.0	000 000 000	0.00 0.00 0.00
Medium Trucks: Heavy Trucks:	82.40 86.40 e Levels (witho Leq Peak Hou	-14.89 -18.85 Dut Topo and r Leq Day	Le	1.99 2.04 2.03	a a auation) rening	-1.20 -1.20 -1.20	Night	-4.66 -4.87 -5.40	0.0 0.0 0.0	000 000 000 <i>CI</i>	0.00 0.00 0.00
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos:	82.40 86.40 e Levels (without Leg Peak Hou 74.	-14.89 -18.85 Dut Topo and r Leq Day 9	72.9	1.99 2.04 2.03	a a auation) rening 71.6	-1.20 -1.20 -1.20	Night 65.	-4.66 -4.87 -5.40 6	0.0 0.0 0.0 <i>Ldn</i> 74.0	000 000 000 <i>CI</i>	0.00 0.00 0.00
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	82.40 86.40 e Levels (witho Leq Peak Hou 74. 68.	-14.89 -18.85 but Topo and r Leq Day 9 3	72.9 64.5	1.99 2.04 2.03	2 4 3 7 7 1.6 5 6.9	-1.20 -1.20 -1.20	Night 65. 65.	-4.66 -4.87 -5.40 6 7	0.0 0.0 0.0 1.0 74.0 71.5	000 000 000 000 <i>CI</i>	0.00 0.00 0.00 <u>VEL</u> 74. 71.
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	82.40 86.40 e Levels (without Leq Peak Hout 74. 68. 68.	-14.89 -18.85 but Topo and r Leq Day 9 3 4	72.9 64.5 64.3	1.99 2.04 2.03	2 4 3 7 7 1.6 5 6.9 6 0.9	-1.20 -1.20 -1.20	Night 65. 65. 65.	-4.66 -4.87 -5.40 6 7 6	0.0 0.0 <i>Ldn</i> 74.0 71.8 71.8	000 000 000 000 <i>CI</i> 0 0 3	0.00 0.00 0.00 NEL 74. 71. 71.
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks:	82.40 86.40 e Levels (without Leq Peak Hout 74. 68. 68.	-14.89 -18.85 but Topo and r Leq Day 9 3 4	72.9 64.5	1.99 2.04 2.03	2 4 3 7 7 1.6 5 6.9	-1.20 -1.20 -1.20	Night 65. 65.	-4.66 -4.87 -5.40 6 7 6	0.0 0.0 0.0 1.0 74.0 71.5	000 000 000 000 <i>CI</i> 0 0 3	0.00 0.00 0.00 NEL 74. 71. 71.
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	82.40 86.40 e Levels (witho Leg Peak Hou 74. 68. 68. 76.	-14.89 -18.85 but Topo and r Leq Day 9 3 4 5	72.9 64.5 64.3 74.0	1.99 2.04 2.03 attenu eq Eve	<i>uation)</i> <i>rening</i> 71.6 56.9 60.9 72.1	-1.20 -1.20 -1.20 <i>Leq</i>	Night 65. 65. 70.	-4.66 -4.87 -5.40 6 6 4	0.0 0.0 0.0 74.0 71.5 71.5 77.5	000 000 000 000 C/ 0 3 3 5	0.000 0.000 0.000 VEL 74.1 71.2 71.2 77.3
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	82.40 86.40 e Levels (witho Leg Peak Hou 74. 68. 68. 76.	-14.89 -18.85 but Topo and r Leq Day 9 3 4 5 ntour (in feet	72.9 64.5 64.3 74.0	1.99 2.04 2.03	ation) rening 71.6 56.9 60.9 72.1 BA	-1.20 -1.20 -1.20 <i>Leq</i>	Night 65. 65. 70. dBA	-4.66 -4.87 -5.40 6 7 6 4	0.0 0.0 0.0 74.0 71.9 71.8 77.9	000 000 000 000 000 000 000 000 000 00	0.000 0.000 NEL 74.6 71.9 77.8 dBA
Medium Trucks: Heavy Trucks: Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	82.40 86.40 e Levels (witho Leg Peak Hou 74. 68. 68. 76.	-14.89 -18.85 but Topo and r Leq Day 9 3 4 5 ntour (in feet	72.9 64.5 64.3 74.0	1.99 2.04 2.03 attenu eq Eve	<i>uation)</i> <i>rening</i> 71.6 56.9 60.9 72.1	-1.20 -1.20 -1.20 <i>Leq</i>	Night 65. 65. 70.	-4.66 -4.87 -5.40 6 7 6 4 4	0.0 0.0 0.0 74.0 71.5 71.5 77.5	000 000 000 000 000 000 000 000 000 00	0.000 0.000 0.000 VEL 74.6 71.9 71.9 77.8

FHW.	A-RD-77-108 HIC	GHWAY	NOISE	PREDIC	TION M	ODEL (9	9/12/20	021)		
Scenario: E Road Name: Ethana Road Segment: e/o Ba						Name: E umber: 1		t and Ethar	iac	
SITE SPECIFI	C INPUT DAT	A						L INPUTS	3	
Highway Data			S	Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Ad	t): 14,490 veh	icles					Autos:	15		
Peak Hour Percentag	e: 10.00%			Me	dium Tri	ucks (2 A	xles):	15		
Peak Hour Volum	e: 1,449 vehic	cles		He	avy Tru	cks (3+ A	xles):	15		
Vehicle Spee	<i>d:</i> 55 mph		L.	/ehicle	Mix					
Near/Far Lane Distant	ce: 78 feet				icleType		Dav	Evening	Night	Daily
Site Data				VCII			75.6%		10.5%	
Barrier Heig	ht: 0.0 feet			М	edium Ti	rucks:	48.9%	2.2%	48.9%	1.84%
Barrier Type (0-Wall, 1-Berr				1	Heavy Ti	rucks:	47.3%	5.4%	47.3%	0.74%
Centerline Dist. to Barri	,		-							
Centerline Dist. to Observ			^	Voise So		evations		et)		
Barrier Distance to Observ	er: 0.0 feet				Auto		000			
Observer Height (Above Pa	d): 5.0 feet				m Truck		297			
Pad Elevatio				Heav	/y Truck	s: 8.0	004	Grade Adj	usiment	0.0
Road Elevation	on: 0.0 feet		L	ane Eq	uivalent	Distanc	e (in f	eet)		
Road Grad	le: 0.0%				Auto	s: 36.2	235			
Left Vie	w: -90.0 deg	rees		Mediu	m Truck	s: 35.9	990			
Right Vie	w: 90.0 deg	rees		Heav	/y Truck	s: 36.0)14			
FHWA Noise Model Calcula	tions		I							
VehicleType REME	Traffic Flov	v Dis	tance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos: 7	1.78 -1.2	21	1.99	Э	-1.20		-4.66	0.0	00	0.000
Medium Trucks: 8	2.40 -18.4	45	2.04	4	-1.20		-4.87	0.0	00	0.000
Heavy Trucks: 8	5.40 -22.4	41	2.03	3	-1.20		-5.40	0.0	00	0.000
Unmitigated Noise Levels (nd barrie								
VehicleType Leq Peak			Leq Ev			Night		Ldn		VEL
Autos:	71.4	69.4		68.0		62.0		70.4		71.1
Medium Trucks:	64.8	60.9		53.4		62.1		68.3		68.4
Heavy Trucks:	64.8	60.8		57.4		62.0		68.2		68.3
Vehicle Noise:	73.0	70.4		68.5		66.8		73.9		74.2
Centerline Distance to Nois	e Contour (in fe	et)	70 -	0.4	05	-10.4		0 -10 4		-10.4
		Latar	70 d		65	dBA	6	0 dBA	55	dBA
		Ldn:		96		208		447		964
		CNEL:		101		218		471		1,014

I	FHWA-RD-77	'-108 HIGHWAY	(NOISE	PREDIC	TION M	ODEL (9/12/20	021)		
Scenario: E	+P				Project	Name: I	Barnet	t and Ethar	nac	
Road Name: Et	hanac Rd.				Job N	umber: '	14775			
Road Segment: e/	o Barnett Rd.									
	CIFIC INPU	T DATA						L INPUT	5	
Highway Data				Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily Traffi	ic (Adt): 14,	905 vehicles				,	Autos:	15		
Peak Hour Perc	entage: 10	.00%		Me	dium Tru	ucks (2 A	xles):	15		
Peak Hour \	/olume: 1,4	91 vehicles		He	avy Truc	cks (3+ A	xles):	15		
Vehicle	Speed:	55 mph	-	Vehicle I	Aiy .					
Near/Far Lane Di	istance:	78 feet	-		cleType		Dav	Evening	Night	Daily
Site Data				VCIII			75.6%		10.5%	
	11-1-1-4	0.0.6		M	, dium Ti		48.9%		48.9%	1.959
Barrier		0.0 feet			leavy Ti		47.3%		47.3%	1.499
Barrier Type (0-Wall, 1	,	0.0		,		aono.	41.070	0.470	47.070	1.45
Centerline Dist. to		53.0 feet		Noise So	urce El	evations	s (in fe	et)		
Centerline Dist. to Ol		53.0 feet			Autos	s: 0.0	000			
Barrier Distance to Ol		0.0 feet		Mediur	n Truck	s: 2.2	297			
Observer Height (Abov	,	5.0 feet		Heav	y Truck:	s: 8.0	004	Grade Adj	iustment:	0.0
Road El	evation:	0.0 feet	-	Lane Equ	ivalont	Dictor	o (in t	(act)		
		0.0 feet .0%	-	Lane Ly	Auto			eeŋ		
		.0% 90.0 degrees		Modiu	n Truck:					
		0.0 degrees			y Truck					
•		50.0 degrees		mour	<i>y</i> ao		5			
FHWA Noise Model Ca				-						
			istance	Finite		Fresn	-	Barrier Atte		m Atten
Autos:	71.78	-1.13	1.9	-	-1.20		-4.66		000	0.00
Medium Trucks:	82.40	-18.08	2.0		-1.20		-4.87		000	0.00
Heavy Trucks:	86.40	-19.23	2.0	13	-1.20		-5.40	0.0	000	0.00
Unmitigated Noise Lev				/ I						
	Peak Hour	Leq Day	Leq E	vening	Leq	Night		Ldn		VEL
Autos:	71.4	69.4		68.1		62.1		70.5		71.
Medium Trucks:	65.2	61.3		53.8		62.5		68.7		68
Heavy Trucks:	68.0	64.0		60.5		65.2		71.4		71.
Vehicle Noise:	73.7	71.0		69.0		68.3	5	75.1		75.
Centerline Distance to	Noise Conto	our (in feet)								
		l	70	dBA	65	dBA	6	i0 dBA		dBA
		Ldn:		116		251		540		1,163
		CNEL:		121		261		563		1.213

Thursday, October 6, 2022

	FHWA-RI	D-77-108 HIGH	NAY NC	ISE I	PREDIC		ODEL (9)	12/20	021)		
Road Nam	io: OYC ie: Ethanac Ro nt: e/o Barnett						Name: B umber: 14		t and Ethana	ac	
SITE	SPECIFIC IN	IPUT DATA							L INPUTS		
Highway Data				S	ite Con	ditions ('Hard = 1	0, Sc	oft = 15)		
Average Daily	Traffic (Adt):	34,020 vehicle	s				Α	utos:	15		
Peak Hour	Percentage:	10.00%			Med	dium Tru	icks (2 A)	des):	15		
Peak H	lour Volume:	3,402 vehicles			Hea	avy Truc	ks (3+ A)	(les):	15		
Ve	hicle Speed:	55 mph		v	ehicle N	lix					
Near/Far La	ne Distance:	78 feet		-		cleType	L)ay	Evening	Night	Daily
Site Data								5.6%		10.5%	
Pa	rrier Height:	0.0 feet			Me	dium Tr	ucks: 4	8.9%	2.2%	48.9%	1.84%
Barrier Type (0-W		0.0			H	leavy Tr	ucks: 4	7.3%	5.4%	47.3%	0.74%
Centerline Di	. ,	53.0 feet		-							
Centerline Dist.		53.0 feet		N	loise So		evations		eet)		
Barrier Distance	to Observer:	0.0 feet				Autos					
Observer Height	Above Pad);	5.0 feet				n Trucks			Our de Adia		
	ad Elevation:	0.0 feet			Heav	y Trucks	: 8.00)4	Grade Adju	stment:	0.0
Ro	ad Elevation:	0.0 feet		L	ane Equ	iivalent	Distance	e (in t	feet)		
	Road Grade:	0.0%				Autos	: 36.2	35			
	Left View:	-90.0 degree	s		Mediur	n Trucks	35.9	90			
	Right View:	90.0 degree	s		Heav	y Trucks	36.0	14			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresne	1	Barrier Atter	n Berr	n Atten
Autos:	71.78	2.49		1.99		-1.20		4.66	0.00	00	0.00
Medium Trucks:	82.40	-14.74		2.04		-1.20		4.87	0.00	00	0.00
Heavy Trucks:	86.40	-18.70		2.03		-1.20	-	5.40	0.00	00	0.00
Unmitigated Nois											
VehicleType	Leq Peak Hou			eq Ev	ening	Leq I	•		Ldn	CN	IEL
Autos:	75		3.1		71.7		65.7		74.2		74.
Medium Trucks:	68		64.6		57.1		65.9		72.0		72.
Heavy Trucks:	68	-	64.5		61.1		65.7		71.9		72.
Vehicle Noise:	76	.7	74.1		72.2		70.5		77.6		77.9
Centerline Distan	ce to Noise Co	ontour (in feet)									
				70 d		65 c		6	60 dBA	55	dBA
			_dn: IEL :		170 179		367 386		790 831		1,703 1,791

	FHWA-RI	D-77-108 HIGH	WAY NO	ISE PRED	ICTION MC	DDEL (9/12	/2021)						
Scenar	rio: OYCP				Project I	Vame: Barr	nett and Ethar	nac					
Road Nan	ne: Ethanac Re	d.			Job Nu	mber: 147	75						
Road Segme	ent: e/o Barnett	Rd.											
	SPECIFIC IN	IPUT DATA					DEL INPUT	S					
Highway Data				Site C	onditions (l	Hard = 10,	Soft = 15)						
Average Daily	Traffic (Adt):	34,435 vehicle	es			Auto	os: 15						
Peak Hour	r Percentage:	10.00%		1	Aedium Tru	cks (2 Axle	s): 15						
Peak H	Hour Volume:	3,444 vehicles	5		Heavy Truck	ks (3+ Axle	s): 15						
Ve	ehicle Speed:	55 mph		Vehic	o Miy								
Near/Far La	ane Distance:	78 feet			ehicleType	Day	Evening	Night	Daily				
Site Data						utos: 75.0	-	10.5%					
Ba	rrier Heiaht:	0.0 feet			Medium Tru	icks: 48.9	9% 2.2%	48.9%	1.89%				
Barrier Type (0-V		0.0			Heavy Tru	icks: 47.3	3% 5.4%	47.3%	1.07%				
Centerline D	ist. to Barrier:	53.0 feet		Noise	Source Ele	vations (in	feet)						
Centerline Dist.	to Observer:	53.0 feet			Autos.								
Barrier Distance	to Observer:	0.0 feet		Mar	Medium Trucks: 2.297								
Observer Height	(Above Pad):	5.0 feet			avy Trucks.		Grade Ad	iustment [.]	0.0				
P	ad Elevation:	0.0 feet		110	avy muchs.	0.004	0/000 //0	dounon.	0.0				
Ro	ad Elevation:	0.0 feet		Lane I	quivalent l	Distance (i	in feet)						
	Road Grade:	0.0%			Autos.	36.235							
	Left View:	-90.0 degree	es	Med	lium Trucks.	35.990							
	Right View:	90.0 degree	es	He	avy Trucks.	36.014							
FHWA Noise Mod	lel Calculation	s											
VehicleType	REMEL	Traffic Flow	Distant	ce Fin	te Road	Fresnel	Barrier Atte	en Berr	n Atten				
Autos:		2.53		1.99	-1.20	-4.6	6 0.0	000	0.000				
Medium Trucks:	82.40	-14.58		2.04	-1.20	-4.8	87 0.0	000	0.00				
Heavy Trucks:								000	0.00				
Heavy Hucks.	86.40	-17.06		2.03	-1.20	-5.4	0 0.0	000					
Unmitigated Nois	e Levels (with	out Topo and	barrier at	tenuation	n)								
Unmitigated Nois VehicleType	e Levels (with Leq Peak Hol	out Topo and ur Leq Day	barrier at	t tenuatio q Evening) Leq N	light	Ldn	CN	IEL				
Unmitigated Nois VehicleType Autos:	e Levels (with Leq Peak Hou 75	out Topo and ur Leq Day	barrier at Le	t tenuation q Evening 71	n) Leq N .8	light 65.8	Ldn 74.2	C/	74.8				
Unmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 75	out Topo and ur Leq Day 5.1 3.7	barrier at Le 73.1 64.8	t tenuation q Evening 71 57) Leq N .8 .3	light 65.8 66.0	Ldn 74.2 72.2	CN 2 2	74.8 72.2				
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leq Peak Hou 75 68 70	out Topo and ur Leq Day 5.1 3.7 0.2	barrier at Le 73.1 64.8 66.1	r tenuation q Evening 71 57 62	1) Leq N .8 .3 .7	65.8 66.0 67.4	Ldn 74.2 72.2 73.6	C/ 2 2 3	74.8 72.2 73.7				
Unmitigated Nois VehicleType Autos: Medium Trucks:	e Levels (with Leq Peak Hou 75 68 70	out Topo and ur Leq Day 5.1 3.7 0.2	barrier at Le 73.1 64.8	r tenuation q Evening 71 57 62) Leq N .8 .3	light 65.8 66.0	Ldn 74.2 72.2	C/ 2 2 3	74.8 72.2 73.7				
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks:	e Levels (with Leg Peak Hou 75 68 70 70	out Topo and <i>Ir</i> Leq Day 5.1 3.7 0.2 7.0	barrier at 73.1 64.8 66.1 74.4	ttenuation q Evening 71 57 62 72) Leq N .8 .3 .7 .4	light 65.8 66.0 67.4 71.2	Ldn 74.2 72.2 73.6 78.2	Ch 2 2 3 2	74.8 72.2 73.7 78.5				
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 75 68 70 70	out Topo and ur Leq Day 5.1 3.7 7.0 Dontour (in feet)	barrier at 2 Le 73.1 64.8 66.1 74.4	ttenuation q Evening 71 57 62 72 72 70 dBA	n) Leq N .8 .3 .7 .4 .4 .65 d	light 65.8 66.0 67.4 71.2 BA	Ldn 74.2 73.6 78.2 60 dBA	Ch 2 2 3 2 2 55	74.8 72.2 73.1 78.5 dBA				
Unmitigated Nois VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	e Levels (with Leg Peak Hou 75 68 70 70	out Topo and Ir Leq Day 5.1 3.7 0.2 7.0 pontour (in feet,	barrier at 73.1 64.8 66.1 74.4	ttenuation q Evening 71 57 62 72	n) Leq N .8 .3 .7 .4 .4 .65 d 6	light 65.8 66.0 67.4 71.2	Ldn 74.2 72.2 73.6 78.2	Ch 2 2 3 2 2 55	74.8 72.2 73.7 78.5				

FHWA-RD-77-108	HIGHWAY NC	ISE PREDICTION MODEL (9/12/2021)	
Scenario: E Road Name: Ethanac Rd.		Project Name: Barnett and Ethanac Job Number: 14775	
Road Segment: e/o I-215 NB Ramps			
SITE SPECIFIC INPUT DA	TA	NOISE MODEL INPUTS	
Highway Data		Site Conditions (Hard = 10, Soft = 15)	
Average Daily Traffic (Adt): 12,790 v	ehicles	Autos: 15	
Peak Hour Percentage: 10.00%		Medium Trucks (2 Axles): 15	
Peak Hour Volume: 1,279 ve	hicles	Heavy Trucks (3+ Axles): 15	
Vehicle Speed: 55 m	ph	Vehicle Mix	
Near/Far Lane Distance: 78 fe	et		aily
Site Data			.42
Barrier Height: 0.0 f	eet	Medium Trucks: 48.9% 2.2% 48.9% 1	.84
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 47.3% 5.4% 47.3% 0	.74
Centerline Dist. to Barrier: 53.0 fe	eet	Noise Source Elevations (in feet)	
Centerline Dist. to Observer: 53.0 fe	eet	Autos: 0.000	
Barrier Distance to Observer: 0.0 fe	eet	Medium Trucks: 2.297	
Observer Height (Above Pad): 5.0 fe	eet	Heavy Trucks: 8.004 Grade Adjustment: 0.0)
Pad Elevation: 0.0 fe	eet		-
Road Elevation: 0.0 fe	eet	Lane Equivalent Distance (in feet)	
Road Grade: 0.0%		Autos: 36.235	
Left View: -90.0 d	egrees	Medium Trucks: 35.990	
Right View: 90.0 d	egrees	Heavy Trucks: 36.014	
FHWA Noise Model Calculations			
VehicleType REMEL Traffic F			_
	-1.75		0.0
	8.99		0.00
Heavy Trucks: 86.40 -2	2.95	2.03 -1.20 -5.40 0.000	0.00
Unmitigated Noise Levels (without Topo		,	
		q Evening Leq Night Ldn CNEL	
Autos: 70.8	68.8	67.5 61.5 69.9	70
Medium Trucks: 64.2	60.4	52.8 61.6 67.8	67
Heavy Trucks: 64.3	60.2	56.8 61.5 67.7	67
Vehicle Noise: 72.4	69.9	68.0 66.3 73.4	73
Centerline Distance to Noise Contour (in	feet)		
	l dei	70 dBA 65 dBA 60 dBA 55 dBA	
	Ldn: CNEL:	89 191 412 93 201 433	88
	GNEL.	93 201 433	93

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	TION M	ODEL	9/12/2	021)		
Scenario:									t and Etha	nac	
Road Name:						Job Ni	imber:	14775			
Road Segment:	e/o I-215 NB	3 Ramps									
	ECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				5	Site Cond	ditions ('Hard =	10, Sc	oft = 15)		
Average Daily Tra	affic (Adt):	12,808 vehicle	es					Autos:	15		
Peak Hour Pe	ercentage:	10.00%			Med	dium Tru	cks (2	Axles):	15		
Peak Hou	r Volume:	1,281 vehicles	5		Hea	avy Truc	ks (3+	Axles):	15		
Vehic	le Speed:	55 mph		1	/ehicle N	lix					
Near/Far Lane	Distance:	78 feet		-		cleType		Day	Evening	Night	Daily
Site Data							utos:	75.6%	•	10.5%	
	er Height:	0.0 feet			Me	dium Tr	ucks:	48.9%	2.2%	48.9%	1.84
Barrier Type (0-Wall		0.0			H	leavy Tr	ucks:	47.3%	5.4%	47.3%	0.74
Centerline Dist.	,	53.0 feet		_							
Centerline Dist. to		53.0 feet		N	loise So				eet)		
Barrier Distance to		0.0 feet				Autos		000			
Observer Height (Ab	ove Pad):	5.0 feet				n Trucks	. –	297		. , ,	
	Elevation:	0.0 feet			Heav	y Trucks	: 8	004	Grade Ad	justment.	0.0
Road	Elevation:	0.0 feet		L	ane Equ	iivalent	Distan	ce (in i	feet)		
Ro	ad Grade:	0.0%				Autos	: 36	.235			
	Left View:	-90.0 degree	es		Mediun	n Trucks	: 35	.990			
R	ight View:	90.0 degree	es		Heav	y Trucks	: 36	.014			
FHWA Noise Model (Calculations	5									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	71.78	-1.75		1.99		-1.20		-4.66		000	0.00
Medium Trucks:	82.40	-18.99		2.04		-1.20		-4.87		000	0.00
Heavy Trucks:	86.40	-22.95		2.03	3	-1.20		-5.40	0.	000	0.00
Unmitigated Noise L	evels (witho	out Topo and	barri	er atteni	uation)						
	eq Peak Hou			Leq Ev		Leq I			Ldn		VEL
Autos:	70.	-	68.8		67.5		61.	-	69.	-	70.
Medium Trucks:	64.		60.4		52.8		61.		67.		67
Heavy Trucks:	64.		60.2		56.8		61.	-	67.		67
Vehicle Noise:	72.	.4	69.9		68.0		66.	3	73.	4	73
Centerline Distance	to Noise Co	ntour (in feet,)								10.4
			L	70 d		65 c		-	60 dBA		dBA
			Ldn: NEL:		89		191		412		88
					93		201		433		93

Thursday, October 6, 2022

F	HWA-RD	-77-108 HIGH	WAY N	DISE	PREDIC	TION M	ODEL (9/	12/20	021)		
Scenario: O				_					t and Ethana	ас	
Road Name: Et		-				Job N	umber: 14	4775			
Road Segment: e/	o I-215 NE	3 Ramps									
	CIFIC IN	PUT DATA							L INPUTS		
Highway Data				5	Site Con	ditions	(Hard = 1	0, So	ft = 15)		
Average Daily Traffi	c (Adt):	17,360 vehicle	s					utos:	15		
Peak Hour Perce	entage:	10.00%					icks (2 A)		15		
Peak Hour V	olume:	1,736 vehicles			Hea	avy Truc	cks (3+ A)	(les):	15		
Vehicle		55 mph		1	Vehicle N	<i>lix</i>					
Near/Far Lane Di	stance:	78 feet		-		cleType	E	ay	Evening	Night	Daily
Site Data							Autos: 7	5.6%	14.0%	10.5%	97.429
Barrier I	Heiaht [.]	0.0 feet			Me	edium Ti	ucks: 4	8.9%	2.2%	48.9%	1.84%
Barrier Type (0-Wall, 1-		0.0			H	leavy Ti	ucks: 4	7.3%	5.4%	47.3%	0.74%
Centerline Dist. to	,	53.0 feet			Noico So	urco El	evations	(in fo	unt)		
Centerline Dist. to Ob	server:	53.0 feet		,	10/36 30	Auto:			eij		
Barrier Distance to Ob	server:	0.0 feet			Madis	n Truck	0.01				
Observer Height (Abov	e Pad):	5.0 feet				y Truck			Grade Adju	stment.	0.0
Pad Ele	evation:	0.0 feet			Ticav	y much	5. 0.00	J4	0/000/10/0	ourrorn.	0.0
Road Ele	evation:	0.0 feet		L	Lane Equ	ivalent	Distance	e (in f	eet)		
Road	Grade:	0.0%				Auto		35			
Lei	ft View:	-90.0 degree	s		Mediur	n Truck	s: 35.9	90			
Righ	nt View:	90.0 degree	s		Heav	y Truck	s: 36.0	14			
FHWA Noise Model Cal	culations	5									
VehicleType RE	EMEL	Traffic Flow	Dista	nce	Finite	Road	Fresne	1	Barrier Atte	n Berr	m Atten
Autos:	71.78	-0.43		1.99	9	-1.20		4.66	0.00	00	0.00
Medium Trucks:	82.40	-17.67		2.04	4	-1.20		4.87	0.00	00	0.00
Heavy Trucks:	86.40	-21.62		2.03	3	-1.20		5.40	0.00	00	0.00
Unmitigated Noise Lev	els (witho	out Topo and I	barrier a	atten	uation)						
	Peak Hou			eq Ev	/ening	Leq	Night		Ldn	CN	IEL
Autos:	72.		70.1		68.8		62.8		71.2		71.
Medium Trucks:	65.		51.7		54.2		62.9		69.1		69.
Heavy Trucks:	65.	-	51.6		58.2		62.8		69.0		69.
Vehicle Noise:	73.	.7	71.2		69.3		67.6		74.7		75.
Centerline Distance to	Noise Co	ntour (in feet)									
				70 a	1BA	65	dBA	6	i0 dBA	55	dBA
		1	.dn:		109		234		505 531		1,087 1,144

FHWA-RD-77-108 H	GHWAY NO			NODEL (9	/12/20	21)		
Scenario: OYCP Road Name: Ethanac Rd. Road Segment: e/o I-215 NB Ramps				t Name: E Number: 1		and Ethar	iac	
SITE SPECIFIC INPUT DAT	A			NOISE N	IODE	L INPUTS	3	
Highway Data		Site	Conditions	(Hard =	10, So	ft = 15)		
Average Daily Traffic (Adt): 17,378 ve	nicles			A	Autos:	15		
Peak Hour Percentage: 10.00%			Medium Tr	rucks (2 A	xles):	15		
Peak Hour Volume: 1,738 veh	icles		Heavy Tru	icks (3+ A	xles):	15		
Vehicle Speed: 55 mpl	ı	Vohi	cle Mix					
Near/Far Lane Distance: 78 feet			VehicleType	•	Dav	Evening	Night	Daily
Site Data					75.6%	14.0%		97.42%
		_	Medium 1		48.9%	2.2%	48.9%	1.84%
Barrier Height: 0.0 fee Barrier Type (0-Wall, 1-Berm): 0.0	At		Heavy 1		47.3%		47.3%	0.74%
				raono.		0.170		0.1170
Centerline Dist. to Barrier: 53.0 fee Centerline Dist. to Observer: 53.0 fee		Nois	e Source E	levations	in fe	et)		
Barrier Distance to Observer: 0.0 fee			Auto					
Observer Height (Above Pad): 5,0 fee		Me	edium Truck	(s: 2.2	97			
Pad Elevation: 0.0 fee		ŀ	leavy Truck	(s: 8.0	04	Grade Adj	ustment:	0.0
Road Elevation: 0.0 fee		Lane	Equivalen	t Distanc	e (in f	eet)		
Road Grade: 0.0%	a.	20/10	Auto					
Left View: -90.0 de	arooc	M	edium Truck					
Right View: 90.0 de	•		leavy Truck					
FHWA Noise Model Calculations								
VehicleType REMEL Traffic Flo	w Distar	nce Fi	nite Road	Fresn	e/ I	Barrier Atte	en Ber	m Atten
Autos: 71.78 -0	.42	1.99	-1.20		-4.66	0.0	00	0.000
Medium Trucks: 82.40 -17	.67	2.04	-1.20		4.87	0.0	00	0.000
	.62	2.03	-1.20		-5.40	0.0	00	0.000
Unmitigated Noise Levels (without Topo a								
VehicleType Leq Peak Hour Leq		eq Evenir	•	Night		Ldn		VEL
Autos: 72.2	70.1		8.8	62.8		71.2		71.9
Medium Trucks: 65.6	61.7		54.2	62.9		69.1		69.1
Heavy Trucks: 65.6	61.6		58.2	62.8		69.0		69.1
Vehicle Noise: 73.7	71.2	(9.3	67.6		74.7		75.0
Centerline Distance to Noise Contour (in a	eet)	70 -0 1		-/0.4	-	0 -10 4		-10.4
		70 dBA		dBA	6	0 dBA	55	dBA
	Ldn:		109	234		505		1,088
	CNEL:		14	246		531		1,144



APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS





14775 - Barnett & Ethanac

CadnaA Noise Prediction Model: 14775-03.cna Date: 21.11.22 Analyst: B. Lawson

Calculation Configuration

ParameterValueGeneral	Configurat	tion
Max. Error (dB)0.00Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00PartitionRaster FactorRaster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Reference Time Penalty (dB)10.00DTM1Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Rcv100.00Max. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Incl. Ground Att. over BarrierDaytimi Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Darrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TNM)Railways (FTA/FRA)Aircraft (???)Incl. Ground Att. over Barrier	Parameter	Value
Max. Search Radius (#(Unit,LEN))2000.01Min. Dist Src to Rcvr0.00Partition	General	
Min. Dist Src to Rcvr0.00Partition0.00Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnReference Time Day (min)960.00Reference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Rcvr100.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral DiffractionLateral Diffraction5ScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TNM)Railways (FTA/FRA)Aircraft (???)	Max. Error (dB)	0.00
Partition0.50Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (#(Unit,LEN))1.01Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTM0.00Standard Height (m)0.00Model of TerrainTriangulationReffection2Search Radius Src100.00Min. Distance Source - Revr100.00Min. Distance Source - Reflector1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral DiffractionLateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)3.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TNM)Railways (FTA/FRA)Aircraft (???)	Max. Search Radius (#(Unit,LEN))	2000.01
Raster Factor0.50Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Reference Time Penalty (dB)10.00DTM5tandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Min. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Lateral DiffractionLateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)3.0 20.0 0.0Renarce Cource (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TNM)Railways (FTA/FRA)Aircraft (??)Aircraft (??)	Min. Dist Src to Rcvr	0.00
Max. Length of Section (#(Unit,LEN))999.99Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Line SourcesOnProj. Area SourcesOnReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Refer. Time Penalty (dB)10.00DTM5tandard Height (m)Other Control0.00Reference Time Penalty (dB)10.00DTMStandard Height (m)O.000.00Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr1000.00 1000.00Min. Distance Source - Revr1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)1.01Lateral Diffractionsome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over Barrier Dz with limit (20/25)Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TNM)Railways (FTA/FRA)Aircraft (??)Interformation	Partition	
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Min. Length of Section (%)0.00Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)10.00S.00Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Reference Time Night (m)Model of TerrainTriangulationReflection2Search Radius Src100.00Max. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Lateral DiffractionLateral DiffractionSome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TNM)Railways (FTA/FRA)Aircraft (??)Aircraft (??)	Max. Length of Section (#(Unit,LEN))	999.99
Proj. Line SourcesOnProj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)Daytime Penalty (dB)5.00Night-time Penalty (dB)10.00DTMStandard Height (m)Standard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Search Radius Rcvr100.00Min. Distance Source - Revr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)Some ObjLateral DiffractionSome ObjObst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDz with limit (20/25)Sarrier Coefficients C1,2,3Barrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Railways (FTA/FRA)Aircraft (??)	Min. Length of Section (#(Unit,LEN))	1.01
Proj. Area SourcesOnRef. TimeReference Time Day (min)960.00Reference Time Night (min)480.00Daytime Penalty (dB)0.00Recr. Time Penalty (dB)5.00Night-time Penalty (dB)10.00DTM0.00Model of TerrainTriangulationReflection2Search Radius Rcvr100.00Min. Distance Source - Rcvr1000.00Min. Distance Source - Reflector1.00Industrial (ISO 9613)1.00Lateral Diffraction5ScreeningIncl. Ground Att. over BarrierDost, within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Roads (TNM)Railways (FTA/FRA)Aircraft (??)Industriat (??)	Min. Length of Section (%)	0.00
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Night-time Penalty (dB)10.00DTMStandard Height (m)0.00Model of TerrainTriangulationReflection2Search Radius Src100.00Search Radius Rcvr100.00Max. Distance Source - Rcvr1000.00 1000.00Min. Distance Source - Reflector1.00 1.00Min. Distance Source - Reflector0.10Industrial (ISO 9613)Lateral DiffractionSorreeningIncl. Ground Att. over BarrierDobst. within Area Src do not shieldOnScreeningIncl. Ground Att. over BarrierDarrier Coefficients C1,2,33.0 20.0 0.0Temperature (#(Unit,TEMP))10rel. Humidity (%)70Ground Absorption G0.50Wind Speed for Dir. (#(Unit,SPEED))3.0Railways (FTA/FRA)Aircraft (???)	Daytime Penalty (dB)	0.00
DTM 0.00 Model of Terrain Triangulation Reflection 2 Search Radius Src 100.00 Max. Order of Reflection 2 Search Radius Rovr 100.00 Max. Distance Source - Rcvr 1000.00 Min. Distance Source - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) 1.01 1.00 Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Darrier Coefficients C1,2,3 Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Railways (FTA/FRA) Aircraft (???)	Recr. Time Penalty (dB)	5.00
Standard Height (m) 0.00 Model of Terrain Triangulation Reflection 2 Search Radius Src 100.00 Search Radius Src 100.00 Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Source - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) Lateral Diffraction Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 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 (???) Intervent for Dir. (#Component for Dir. (#Component for Price	Night-time Penalty (dB)	10.00
Model of Terrain Triangulation Reflection 2 max. Order of Reflection 2 Search Radius Src 100.00 Search Radius Rcvr 1000.00 Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Source - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) 1 Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz 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 (???) 2	DTM	
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max. Order of Reflection 2 Search Radius Src 100.00 Search Radius Rcvr 100.00 Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Rvcr - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) Lateral Diffraction Sorreening Incl. Ground Att. over Barrier Dots. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Darrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Railways (FTA/FRA) Aircraft (???)	Model of Terrain	Triangulation
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Search Radius Rcvr 100.00 Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Source - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) Industrial (ISO 9613) Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Dz Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Railways (FTA/FRA) Aircraft (???)	max. Order of Reflection	2
Max. Distance Source - Rcvr 1000.00 1000.00 Min. Distance Rvcr - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) Industrial (ISO 9613) Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz 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 (???) Intervention of Interventi	Search Radius Src	100.00
Min. Distance Rvcr - Reflector 1.00 1.00 Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) Industrial (ISO 9613) Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier 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 (???) Integration	Search Radius Rcvr	100.00
Min. Distance Source - Reflector 0.10 Industrial (ISO 9613) Industrial (ISO 9613) Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Railways (FTA/FRA) Aircraft (???)	Max. Distance Source - Rcvr	1000.00 1000.00
Industrial (ISO 9613) some Obj Lateral Diffraction some Obj Obst. within Area Src do not shield 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 Railways (FTA/FRA) Aircraft (???)	Min. Distance Rvcr - Reflector	1.00 1.00
Lateral Diffraction some Obj Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Railways (FTA/FRA) Aircraft (???)	Min. Distance Source - Reflector	0.10
Obst. within Area Src do not shield On Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Railways (FTA/FRA) Aircraft (???)	Industrial (ISO 9613)	
Screening Incl. Ground Att. over Barrier Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA)	Lateral Diffraction	some Obj
Dz with limit (20/25) Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???) 10	Obst. within Area Src do not shield	On
Barrier Coefficients C1,2,3 3.0 20.0 0.0 Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???) Image: Comparison of the comparison o	Screening	Incl. Ground Att. over Barrier
Temperature (#(Unit,TEMP)) 10 rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???) Image: Comparison of the second		Dz with limit (20/25)
rel. Humidity (%) 70 Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???)	Barrier Coefficients C1,2,3	3.0 20.0 0.0
Ground Absorption G 0.50 Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???)	Temperature (#(Unit,TEMP))	10
Wind Speed for Dir. (#(Unit,SPEED)) 3.0 Roads (TNM) Railways (FTA/FRA) Aircraft (???) Image: Comparison of the second sec	rel. Humidity (%)	70
Roads (TNM) Railways (FTA/FRA) Aircraft (???)	Ground Absorption G	0.50
Railways (FTA/FRA) Aircraft (???)	Wind Speed for Dir. (#(Unit,SPEED))	3.0
Aircraft (???)	Roads (TNM)	
	Railways (FTA/FRA)	
Strictly acc. to AzB	Aircraft (???)	
	Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID		Level Lr		Lir	ue		Land	Use	Height		Co	oordinates		
			Day	Night	CNEL	Day	Night	CNEL	L Type Auto Noise Type				Х	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	38.9	38.9	45.5	65.0	45.0	0.0				5.00	а	6272495.65	2215025.66	5.00
RECEIVERS		R2	38.4	38.3	45.0	65.0	45.0	0.0				5.00	а	6276823.49	2212557.32	5.00
RECEIVERS		R3	39.7	39.7	46.4	65.0	45.0	0.0				5.00	а	6274958.22	2211990.63	5.00
RECEIVERS		R4	42.8	42.8	49.4	65.0	45.0	0.0				5.00	а	6274472.96	2212550.70	5.00
RECEIVERS		R5	41.2	41.1	47.8	65.0	45.0	0.0				5.00	а	6273364.28	2212597.76	5.00
RECEIVERS		R6	44.6	44.6	51.3	65.0	45.0	0.0				5.00	а	6272901.98	2213645.67	5.00

Point Source(s)

Name	М.	ID	R	esult. PW		Lw/L	i	Ope	erating Ti	ime	Heigh	t	C	oordinates		
			Day	Evening	Night	Туре	Value	norm.	Day	Special	Night			х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6274412.12	2214083.47	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6274775.34	2214081.53	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6274779.22	2214505.77	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6274414.06	2214505.77	50.00
POINTSOURCE		CAR01	81.1	81.1	81.1	Lw	81.1					5.00	а	6274777.20	2214827.11	5.00
POINTSOURCE		CAR02	81.1	81.1	81.1	Lw	81.1					5.00	а	6274730.54	2214826.50	5.00
POINTSOURCE		CAR03	81.1	81.1	81.1	Lw	81.1					5.00	а	6274669.14	2214827.11	5.00
POINTSOURCE		CAR04	81.1	81.1	81.1	Lw	81.1					5.00	а	6274610.81	2214826.50	5.00
POINTSOURCE		CAR05	81.1	81.1	81.1	Lw	81.1					5.00	а	6274545.73	2214826.50	5.00
POINTSOURCE		CAR06	81.1	81.1	81.1	Lw	81.1					5.00	а	6274491.08	2214827.72	5.00
POINTSOURCE		CAR07	81.1	81.1	81.1	Lw	81.1					5.00	а	6274433.37	2214827.72	5.00
POINTSOURCE		CAR08	81.1	81.1	81.1	Lw	81.1					5.00	а	6274375.65	2214782.29	5.00

Day Evening Night Type Value norm. Day Special Night X Y	Name	M.	ID	R	esult. PW	1		Lw/L	i	On	erating Ti	ime	Heigh	t	0	oordinates	
Image Image <th< td=""><td>Hume</td><td></td><td>10</td><td></td><td>-</td><td></td><td>Type</td><td></td><td>1</td><td></td><td></td><td></td><td>ricign</td><td></td><td></td><td></td><td>Z</td></th<>	Hume		10		-		Type		1				ricign				Z
PONTSDURCE CAR09 81.1 81.1 No Store 2/2733.07 2/1755.27 PONTSDURCE CAR10 81.1 81.1 No 81.1 Store 2/2733.07 2/1755.27 PONTSDURCE CAR12 81.1 81.1 No 81.1 Store 2/2733.07 2/1755.27 PONTSDURCE CAR12 81.1 81.1 No 81.1 Store 2/2733.07 2/1755.27 2/1755.27 PONTSDURCE CAR13 81.1 81.1 No 81.1 Store 2/1755.27 2/1755.2					-		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					_	(ft)				(ft)
PONTSOURCE CAR10 81.1 81.1 N N S	POINTSOURCE		CAR09				Lw	81.1		. ,	, ,	. ,		a			5.00
PONTSUBJEC CAR13 81.1 81.1 N N N SC7433.00 224693.26 PONTSUBJEC CAR13 81.1 N														-			5.00
PONTSOURCE CAR12 B11 B11 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>Lw</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>5.00</td></t<>							Lw							-			5.00
PONTSUDUCE CAR13 81.1 81.1 W 81.1 C SOUR 6 274332 2 21464-99 PONTSOURCE CAR13 81.1 81.1 W 81.1 C SOUR 6 274332.06 2214522.57 PONTSOURCE CAR16 81.1 81.1 W 81.1 C SOUR 6 274332.06 2214534.87 ONTSOURCE CAR18 81.1 81.1 W 81.1 C SOUR 6 27433.02 214447.07 ONTSOURCE CAR28 81.1 81.1 W 81.1 C SOUR 6 27433.02 214447.07 ONTSOURCE CAR28 81.1 81.1 W 81.1 C SOUR 6 27433.02 214440.21 ONTSOURCE CAR28 81.1 81.1 W 81.1 S0.1 SOUR 6 27432.02 214430.21 ONTSOURCE CAR28 81.1 81.1 W 81.1 W 81.1 S0.0 6 27432.76 214484.74			-											-			5.00
POINTSOURCE CAR18 81.1 81.1 I 81.1 I <td></td> <td>-</td> <td></td> <td></td> <td>5.00</td>														-			5.00
POINTSOURCE CAR15 81.1 81.1 No. S.00 a C27432.06 21145713 POINTSOURCE CAR17 81.1 81.1 81.1 W 81.1							-							-			5.00
POINTSOURCE CAR15 81.1 B1.1														-			5.00
POINTSOURCE CAR15 81.1														-			5.00
POINTSOURCE CAR19 81.1 B1.1														-			5.00
POINTSOURCE CAR20 81.1 81.1 B1.1														-			5.00
POINTSOURCE CAR20 81.1 81.1 W 81.1 S00 a C274439.30 2214440.42 POINTSOURCE CAR21 81.1 81.1 W 81.1 S00 a 6274330.2 2214410.21 POINTSOURCE CAR22 81.1 81.1 N1 W 81.1 S00 a 6274330.22 2214450.21 POINTSOURCE CAR22 81.1 81.1 81.1 W 81.1 S00 a 6274332.82 2214450.51 POINTSOURCE CAR28 81.1 81.1 W 81.1 W 81.1 S00 a 6274327.35 2214189.41 POINTSOURCE CAR28 81.1 81.1 W 81.1 S00 a 6274327.37 221417.42 221445.31 POINTSOURCE CAR38 81.1 81.1 W 81.1 S00 a 6274327.31 2214416.32 POINTSOURCE CAR38 81.1 81.1 W 81.1 S00														-			5.00
POINTSOURCE CAR22 81.1 81.1 UW 81.1 UW S0.0 a C2740390 22 2214410.21 POINTSOURCE CAR22 81.1 81.1 KU 81.1 S0.0 a C274339.02 2214410.81 POINTSOURCE CAR23 81.1 81.1 KU 81.1 S0.0 a C274372.82 221437.02 POINTSOURCE CAR24 81.1 81.1 R1.1 R1.1 S0.0 a C274372.82 221437.02 POINTSOURCE CAR25 81.1 81.1 R1.1														-			
POINTSOURCE CAR22 81.1 81.1 Luw 81.1 Luw S000 a C27330.22 2214451.23 POINTSOURCE CAR24 81.1 81.1 1 81.1 50.00 a 6274330.22 2214457.25 POINTSOURCE CAR24 81.1 81.1 81.1 1 50.00 a 6274327.82 2214247.85 POINTSOURCE CAR25 81.1 81.1 81.1 81.1 50.00 a 6274327.03 221463.24 POINTSOURCE CAR28 81.1 81.1 81.1 1 50.00 a 627437.17 2214217.42 POINTSOURCE CAR38 81.1 81.1 1 1 50.00 a 627437.17 2214167.24 POINTSOURCE CAR38 81.1 81.1 1 81.1 1 50.00 a 627437.17 2214167.24 POINTSOURCE CAR38 81.1 81.1 1 81.1 81.1 1 50.00 a														-			5.00
POINTSOURCE CAR22 81.1 81.1 UW 81.1 Stol a 274330.22 2214351.27 POINTSOURCE CAR24 81.1 81.1 W 81.1 Stol a 6274330.22 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221427.85 221439.45 221427.85 221439.45 221427.85 221439.44 50.00 a 6274371.97 2214127.35 2214139.44 POINTSOURCE CAR28 81.1 81.1 W 81.1 50.00 a 627437.197 2214127.32 221421.43 4 POINTSOURCE CAR33 81.1 81.1 W 81.1 S0.00 a 627437.23 221421.72 POINTSOURCE CAR33 81.1 81.1 W 81.1 S0.00 a 627432.73 221406.72 POINTSOURCE CAR34 81.1 81.1 W														-			5.00
POINTSOURCE CAR25 81.1 81.1 Luw S1.1 Luw Luw Luw Luw Luw Luw				-										-			5.00
POINTSOURCE CAR25 81.1 81.1 W 81.1 S00 a 500 a 5274328.3 2214245.05 POINTSOURCE CAR27 81.1 81.1 81.1 W 81.1 S00 a 6274320.3 221428.47 POINTSOURCE CAR27 81.1 81.1 W 81.1 S00 a 6274320.3 221428.42 POINTSOURCE CAR32 81.1 81.1 W 81.1 S00 a 6274327.5 221427.42 POINTSOURCE CAR32 81.1 81.1 W 81.1 S00 a 6274327.5 221427.42 224086.02 POINTSOURCE CAR33 81.1 81.1 W 81.1 S0.0 a 627432.31 224086.02 POINTSOURCE CAR33 81.1 81.1 W 81.1 S0.0 a 627432.31 22405.55 POINTSOURCE CAR37 81.1 81.1 W 81.1 S0.0 a 6274				-				-						-			5.00
POINTSOURCE CAR27 81.1 81.1 W 81.1 S00 a 627437.83 221425.63 POINTSOURCE CAR27 81.1 81.1 W 81.1 S00 a 627437.83 221426.347 POINTSOURCE CAR28 81.1 81.1 W 81.1 S00 a 627437.93 221489.18 POINTSOURCE CAR32 81.1 81.1 W 81.1 S00 a 627437.97 2214165.23 POINTSOURCE CAR33 81.1 81.1 W 81.1 S1.1 S00 a 627432.53 221405.23 POINTSOURCE CAR33 81.1 81.1 W 81.1 S1.0 a														-			5.00
POINTSOURCE CAR28 81.1 81.1 W 81.1 S00 a 6274370.13 224263.47 POINTSOURCE CAR28 81.1 81.1 K1														-			5.00
POINTSOURCE CAR29 81.1 81.1 81.1 81.1 81.1 81.1 50.0 a 6274327.76 2214189.18 POINTSOURCE CAR30 81.1 81.1 81.1 81.1 81.1 50.0 a 6274371-97 2214189.44 POINTSOURCE CAR33 81.1 81.1 81.1 81.1 81.1 50.0 a 6274371-97 2214165.23 POINTSOURCE CAR33 81.1 81.1 11.1 11.4 81.1 50.0 a 6274325.31 2214065.29 POINTSOURCE CAR33 81.1 81.1 11.1 11.4 81.1 50.0 a 6274325.31 221405.89 POINTSOURCE CAR33 81.1 81.1 11.4 81.1 11.4 50.0 a 6274325.31 2214025.89 POINTSOURCE CAR38 81.1 81.1 11.4 81.1 11.4 50.0 a 6274426.49 221369.72 POINTSOURCE CAR48 81.1<														а			5.00
POINTSOURCE CAR29 81.1 81.1 W 81.1 S.00 a 6274327.15 2214139.44 POINTSOURCE CAR30 81.1 81.1 81.1 S.00 a 6274371.97 221427.42 POINTSOURCE CAR31 81.1 81.1 W 81.1 S.00 a 627437.97 221402.742 POINTSOURCE CAR33 81.1 81.1 W N1 S.00 a 627437.93 2214005.82 POINTSOURCE CAR34 81.1 81.1 W N1 S.00 a 627437.63 2214025.82 2214025.83 2214025.82 2214025.82 2214025.82 2214025.82 2214025.82 2214025.82 2214025.82 2214025.82 2214025.82 2213922.70 POINTSOURCE CAR38 81.1 81.1 W N1 S.00 a 627431.94 2213932.70 POINTSOURCE CAR49 81.1 N1 W N1 S.00 a 627431.94 221392.72 POINTSOURCE CAR49 <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td></td> <td>5.00</td>		-												-			5.00
POINTSOURCE CAR30 81.1 81.1 W 81.1 S.00 a 6274371.97 2214217.42 POINTSOURCE CAR31 81.1 81.1 LW 81.1 S.00 a 6274325.37 2214056.23 POINTSOURCE CAR32 81.1 81.1 LW 81.1 S.00 a 6274325.31 2214056.23 POINTSOURCE CAR35 81.1 81.1 LW 81.1 S.00 a 6274325.31 2214025.85 POINTSOURCE CAR35 81.1 81.1 LW 81.1 S.00 a 6274325.72 2213932.72 2213932.72 POINTSOURCE CAR38 81.1 81.1 LW 81.1 S.11 S.00 a 627435.64 2213992.70 POINTSOURCE CAR48 81.1 81.1 LW 81.1 S.11 S.00 a 627435.64 2213972.70 POINTSOURCE CAR48 81.1 81.1 LW 81.1 S.11 S.00							Lw							a			5.00
POINTSOURCE CAR31 81.1 81.1 W 81.1 S.00 a 6274371.97 2214165.23 POINTSOURCE CAR32 81.1 81.1 Lw 81.1 S.00 a 6274373.31 2214065.23 POINTSOURCE CAR33 81.1 81.1 Lw 81.1 S.00 a 6274373.32 2214025.85 POINTSOURCE CAR35 81.1 81.1 Lw 81.1 S.00 a 6274375.31 2214037.32 POINTSOURCE CAR36 81.1 81.1 Lw 81.1 S.11 S.00 a 627435.75 2214037.32 2214037.32 221392.77 2214037.32 221392.77 2214037.32 221392.77 2214037.32 221392.77 2214037.32 221392.77 2214037.32 221392.77 2214037.32 221392.77 221393.33 POINTSOURCE CAR40 81.1 81.1 W 81.1 S.00 a 627435.64 221392.77 2213867.27 2213867.32 2213867.32 2213867.32	POINTSOURCE		CAR29	81.1	81.1	81.1	Lw	81.1					5.00	а			5.00
POINTSOURCE CAR32 81.1 81.1 Lw 81.1 S.00 a 6274325.31 221406.92 POINTSOURCE CAR33 81.1 81	POINTSOURCE		CAR30	81.1	81.1	81.1	Lw	81.1					5.00	а	6274371.97	2214217.42	5.00
POINTSOURCE CAR33 81.1 81.1 L 81.1 5.00 a 6274373.20 2214106.29 POINTSOURCE CAR34 81.1 81.1 W 81.1 S.00 a 6274373.20 2214106.29 POINTSOURCE CAR36 81.1 81.1 81.1 W 81.1 S.00 a 6274373.20 221406.52 POINTSOURCE CAR36 81.1 81.1 R1.1 W 81.1 S.00 a 627437.62 221403.52 POINTSOURCE CAR37 81.1 81.1 W 81.1 S.00 a 627435.7 221369.82 POINTSOURCE CAR40 81.1 81.1 W 81.1 S.01 a 627439.07 221379.72 221369.82 POINTSOURCE CAR44 81.1 81.1 W 81.1 S.01 a 627439.07 221379.74 POINTSOURCE CAR44 81.1 81.1 W 81.1 S.00 a 627450.55 <td>POINTSOURCE</td> <td></td> <td>CAR31</td> <td>81.1</td> <td>81.1</td> <td>81.1</td> <td>Lw</td> <td>81.1</td> <td></td> <td></td> <td></td> <td></td> <td>5.00</td> <td>a</td> <td>6274371.97</td> <td>2214165.23</td> <td>5.00</td>	POINTSOURCE		CAR31	81.1	81.1	81.1	Lw	81.1					5.00	a	6274371.97	2214165.23	5.00
POINTSOURCE CAR34 81.1 81.1 Lw 81.1 S.00 a 6274325.31 2214025.85 POINTSOURCE CAR35 81.1 81.1 81.1 W 81.1 S.00 a 6274326.51 2213984.72 POINTSOURCE CAR35 81.1 81.1 81.1 W 81.1 S.00 a 6274397.76 2214025.85 POINTSOURCE CAR38 81.1 81.1 W 81.1 S.00 a 6274345.7 2213993.39 POINTSOURCE CAR40 81.1 81.1 W 81.1 S.00 a 6274364.4 2213912.87 POINTSOURCE CAR44 81.1 81.1 W 81.1 S.00 a 627437.82 221367.72 POINTSOURCE CAR43 81.1 81.1 W 81.1 S.00 a 6274552.42 221379.64 POINTSOURCE CAR44 81.1 81.1 W 81.1 S.00 a 6274552.42 221379	POINTSOURCE		CAR32	81.1	81.1	81.1	Lw	81.1					5.00	а	6274325.31	2214086.02	5.00
POINTSOURCE CAR35 81.1 81.1 Lw 81.1 Lw 81.1 S.OO a 6274326.53 2213984.72 POINTSOURCE CAR36 81.1 81.1 81.1 W 81.1 S.OO a 627437.76 2214037.52 POINTSOURCE CAR39 81.1 81.1 81.1 W 81.1 S.OO a 627435.13 2213922.70 POINTSOURCE CAR39 81.1 81.1 W 81.1 S.OO a 627436.44 221386.92 POINTSOURCE CAR40 81.1 81.1 W 81.1 S.OO a 627436.44 221376.42 POINTSOURCE CAR42 81.1 81.1 W 81.1 S.OO a 627437.62 221377.62 POINTSOURCE CAR44 81.1 81.1 W 81.1 S.OO a 627457.58 221377.62 POINTSOURCE CAR44 81.1 81.1 W 81.1 S.OO a <	POINTSOURCE		CAR33	81.1	81.1	81.1	Lw	81.1					5.00	а	6274373.20	2214106.29	5.00
POINTSOURCE CAR36 81.1 81.1 I.w 81.1 I.w 81.1 S.00 a 6274397.76 2214037.52 POINTSOURCE CAR37 81.1 81.1 81.1 W1.1 S.00 a 6274412.49 2213993.33 POINTSOURCE CAR39 81.1 81.1 81.1 W1.1 S.00 a 627435.13 2213869.29 POINTSOURCE CAR40 81.1 81.1 W1.1 S.00 a 627435.64 2213719.42 POINTSOURCE CAR41 81.1 81.1 W1.1 S.00 a 6274472.84 2213719.47 POINTSOURCE CAR42 81.1 81.1 W1.1 S.00 a 6274472.81 2213719.42 POINTSOURCE CAR44 81.1 81.1 W1.1 S.00 a 627457.51 2213829.38 POINTSOURCE CAR46 81.1 81.1 W1.1 S.00 a 627457.61 221391.32 POINTSOURCE CAR48	POINTSOURCE		CAR34	81.1	81.1	81.1	Lw	81.1					5.00	а	6274325.31	2214025.85	5.00
POINTSOURCE CAR37 81.1 81.1 I.w 81.1	POINTSOURCE		CAR35	81.1	81.1	81.1	Lw	81.1					5.00	а	6274326.53	2213984.72	5.00
POINTSOURCE CAR38 81.1 81.1 W 81.1 W 81.1 Stone a 6274335.13 2213922.70 POINTSOURCE CAR40 81.1 81.1 W 81.1 Stone a 6274345.57 2213869.29 POINTSOURCE CAR41 81.1 81.1 W 81.1 Stone a 6274346.42 221376.82 POINTSOURCE CAR41 81.1 81.1 W 81.1 Stone a 6274324.62 2213719.47 POINTSOURCE CAR42 81.1 81.1 W 81.1 Stone a 6274324.82 2213779.52 2213719.47 POINTSOURCE CAR43 81.1 81.1 W 81.1 W 81.1 Stone a 6274520.55 221378.25 POINTSOURCE CAR44 81.1 81.1 W 81.1 W Stone a 627455.81 221397.93 Stone a 627455.81 221398.36 POINTSOURCE CAR48	POINTSOURCE		CAR36	81.1	81.1	81.1	Lw	81.1					5.00	a	6274397.76	2214037.52	5.00
POINTSOURCE CAR39 81.1 81.1 Lw 81.1 S.00 a 6274345.57 2213869.29 POINTSOURCE CAR40 81.1 81.1 Lw 81.1 5.00 a 6274366.44 221315.87 POINTSOURCE CAR41 81.1 81.1 Lw 81.1 5.00 a 6274324.07 2213769.32 POINTSOURCE CAR43 81.1 81.1 Lw 81.1 5.00 a 627432.84 2213719.47 POINTSOURCE CAR43 81.1 81.1 Lw 81.1 5.00 a 627452.84 2213719.47 POINTSOURCE CAR44 81.1 81.1 Lw 81.1 5.00 a 627452.84 221379.64 POINTSOURCE CAR46 81.1 81.1 W 81.1 5.00 a 627462.04 2213949.32 POINTSOURCE CAR47 81.1 81.1 W 81.1 81.1 S0.0 a 6274432.04 221391.04	POINTSOURCE		CAR37	81.1	81.1	81.1	Lw	81.1					5.00	a	6274412.49	2213993.93	5.00
POINTSOURCE CAR39 81.1 81.1 I.w 81.1 w 81.1 <t< td=""><td>POINTSOURCE</td><td></td><td>CAR38</td><td>81.1</td><td>81.1</td><td>81.1</td><td>Lw</td><td>81.1</td><td></td><td></td><td></td><td></td><td>5.00</td><td>a</td><td>6274335.13</td><td>2213922.70</td><td>5.00</td></t<>	POINTSOURCE		CAR38	81.1	81.1	81.1	Lw	81.1					5.00	a	6274335.13	2213922.70	5.00
POINTSOURCE CAR40 81.1 81.1 Lw 81.1 Lw 81.1 S.00 a 6274366.44 2213769.82 POINTSOURCE CAR42 81.1 81.1 Lw 81.1 S.00 a 6274394.07 2213769.82 POINTSOURCE CAR42 81.1 81.1 Lw 81.1 S.00 a 6274473.28 221377.9.47 POINTSOURCE CAR44 81.1 81.1 Lw 81.1 S.00 a 627452.48 221377.9.54 POINTSOURCE CAR45 81.1 81.1 LW 81.1 S.00 a 627457.81 221389.38 POINTSOURCE CAR46 81.1 81.1 LW 81.1 S.00 a 627450.82 221385.30 221395.33 POINTSOURCE CAR48 81.1 81.1 W 81.1 S.00 a 6274450.8 221385.33 POINTSOURCE CAR48 81.1 81.1 W 81.1 S.00 a 6274452.40 221391.04														-			5.00
POINTSOURCE CAR41 81.1 81.1 L w 81.1 % % % % % % % % % % % % % % % % % % %														-			5.00
POINTSOURCE CAR42 81.1														-			5.00
POINTSOURCE CAR43 81.1 81.1 Lw 81.1 w 81.1 state stat														-			5.00
POINTSOURCE CAR44 81.1 81.1 Lw 81.1 w 81.1 S.00 a 6274520.55 2213718.25 POINTSOURCE CAR46 81.1 81.1 81.1 w 81.1 S.00 a 6274520.45 2213779.64 POINTSOURCE CAR46 81.1 81.1 N1.1 w 81.1 S.00 a 6274520.45 2213829.38 POINTSOURCE CAR46 81.1 81.1 W 81.1 S.00 a 6274602.33 2213886.48 POINTSOURCE CAR48 81.1 81.1 Lw 81.1 S.00 a 6274480.01 2213950.33 POINTSOURCE CAR50 81.1 81.1 Lw 81.1 S.00 a 6274420.47 221391.1.04 POINTSOURCE CAR53 81.1 81.1 Lw 81.1 S.00 a 6274420.47 221391.1.04 POINTSOURCE CAR54 81.1 81.1 B1.1 W 81.1 S.														-			5.00
POINTSOURCE CAR45 81.1 81.1 Lw 81.1 5.00 a 6274552.48 2213779.64 POINTSOURCE CAR46 81.1 81.1 Lw 81.1 5.00 a 6274575.81 2213829.38 POINTSOURCE CAR47 81.3 81.1 Lw 81.1 5.00 a 6274575.81 221386.48 POINTSOURCE CAR48 81.1 81.1 Lw 81.1 5.00 a 6274575.81 2213949.72 POINTSOURCE CAR49 81.1 81.1 W 81.1 5.00 a 6274518.01 2213940.72 POINTSOURCE CAR50 81.1 81.1 W 81.1 5.00 a 627452.40 221391.04 POINTSOURCE CAR51 81.1 81.1 W 81.1 5.00 a 6274518.10 221391.104 POINTSOURCE CAR53 81.1 81.1 W 81.1 S0.00 a 627451.81.0 221391.104														-			5.00
POINTSOURCE CAR46 81.1 81.1 L W 81.1 S.00 a 6274575.81 2213829.38 POINTSOURCE CAR47 81.1 81.1 81.1 W 81.1 S.00 a 6274502.83 2213886.48 POINTSOURCE CAR48 81.1 81.1 Lw 81.1 S.00 a 6274502.83 2213950.33 POINTSOURCE CAR49 81.1 81.1 Lw 81.1 S.00 a 6274482.01 2213950.33 POINTSOURCE CAR50 81.1 81.1 W 81.1 S.00 a 6274492.42 221391.04 POINTSOURCE CAR51 81.1 81.1 W 81.1 S.00 a 627452.40 2213911.04 POINTSOURCE CAR53 81.1 81.1 W 81.1 S.00 a 6274420.47 2213883.41 POINTSOURCE CAR54 81.1 81.1 W 81.1 S.00 a 6274453.81.2 221														-			5.00
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POINTSOURCE CAR49 81.1 81.1 Lw 81.1 Lw 81.1 S.00 a 6274488.01 2213950.33 POINTSOURCE CAR50 81.1 81.1 81.1 Lw 81.1 S.00 a 6274419.86 2213951.56 POINTSOURCE CAR51 81.1 81.1 Lw 81.1 S.00 a 627442.42 2213911.04 POINTSOURCE CAR52 81.1 81.1 81.1 Lw 81.1 S.00 a 627452.40 2213911.04 POINTSOURCE CAR54 81.1 81.1 Lw 81.1 S.00 a 627452.40 221381.04 POINTSOURCE CAR55 81.1 81.1 Lw 81.1 S.00 a 6274420.47 2213883.41 POINTSOURCE CAR56 81.1 81.1 Lw 81.1 S.00 a 6274420.47 2213883.41 POINTSOURCE CAR57 81.1 81.1 Lw 81.1 S.00 a </td <td></td> <td>-</td> <td></td> <td></td> <td>5.00</td>														-			5.00
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POINTSOURCE CAR51 81.1 81.1 W 81.1 5.00 a 6274392.84 2213911.04 POINTSOURCE CAR52 81.1 81.1 LW 81.1 5.00 a 627432.40 2213911.04 POINTSOURCE CAR53 81.1 81.1 LW 81.1 5.00 a 627452.40 2213911.04 POINTSOURCE CAR54 81.1 81.1 LW 81.1 5.00 a 627452.40 2213911.04 POINTSOURCE CAR54 81.1 81.1 W 81.1 5.00 a 627452.40 221383.41 POINTSOURCE CAR57 81.1 81.1 W 81.1 5.00 a 6274492.31 2213884.73 POINTSOURCE CAR57 81.1 81.1 W 81.1 5.00 a 627443.81 2213844.73 POINTSOURCE CAR58 81.1 81.1 W 81.1 5.00 a 6274488.10 213884.67 POI														-			5.00
POINTSOURCE CAR52 81.1 81.1 W 81.1 5.00 a 6274452.40 2213911.04 POINTSOURCE CAR53 81.1 81.1 1 W 81.1 5.00 a 6274452.40 2213911.04 POINTSOURCE CAR54 81.1 81.1 1 W 81.1 5.00 a 6274420.47 2213883.41 POINTSOURCE CAR55 81.1 81.1 81.1 W 81.1 5.00 a 6274492.31 2213883.41 POINTSOURCE CAR56 81.1 81.1 W 81.1 S0.00 a 627451.43 2213882.18 POINTSOURCE CAR58 81.1 81.1 W 81.1 S0.00 a 6274518.41 2213884.73 POINTSOURCE CAR58 81.1 81.1 W 81.1 S0.00 a 627448.81 2213846.57 POINTSOURCE CAR60 81.1 81.1 W 81.1 S0.00 a 627442.047 </td <td></td> <td>-</td> <td></td> <td></td> <td>5.00</td>														-			5.00
POINTSOURCE CAR53 81.1 81.1 Lw 81.1 5.00 a 6274518.10 2213911.04 POINTSOURCE CAR54 81.1 81.1 Lw 81.1 5.00 a 6274420.47 221383.41 POINTSOURCE CAR55 81.1 81.1 Lw 81.1 5.00 a 6274492.31 2213883.41 POINTSOURCE CAR56 81.1 81.1 Lw 81.1 5.00 a 6274492.31 2213883.41 POINTSOURCE CAR57 81.1 81.1 W 81.1 5.00 a 6274492.31 2213846.57 POINTSOURCE CAR59 81.1 81.1 W 81.1 5.00 a 6274498.41 2213846.57 POINTSOURCE CAR60 81.1 81.1 W 81.1 5.00 a 6274498.40 2213821.40 POINTSOURCE CAR61 81.1 81.1 W 81.1 5.00 a 627449.47 221382.10 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>5.00</td></t<>														-			5.00
POINTSOURCE CAR54 81.1 81.1 Lw 81.1 5.00 a 6274420.47 2213883.41 POINTSOURCE CAR55 81.1 81.1 Lw 81.1 5.00 a 6274420.47 2213883.41 POINTSOURCE CAR56 81.1 81.1 Lw 81.1 5.00 a 6274492.31 2213883.41 POINTSOURCE CAR57 81.1 81.1 Lw 81.1 5.00 a 6274543.89 2213882.18 POINTSOURCE CAR57 81.1 81.1 Lw 81.1 5.00 a 6274420.47 221384.73 POINTSOURCE CAR59 81.1 81.1 Lw 81.1 5.00 a 6274420.47 221384.57 POINTSOURCE CAR60 81.1 81.1 W 81.1 5.00 a 6274420.47 221381.84 POINTSOURCE CAR61 81.1 81.1 W 81.1 5.00 a 6274420.47 2213782.10														-			5.00
POINTSOURCE CAR55 81.1 81.1 Lw 81.1 5.00 a 6274492.31 2213883.41 POINTSOURCE CAR56 81.1 81.1 Lw 81.1 5.00 a 6274492.31 2213883.41 POINTSOURCE CAR57 81.1 81.1 Lw 81.1 5.00 a 627454.41 221384.73 POINTSOURCE CAR58 81.1 81.1 Lw 81.1 5.00 a 6274498.54 2213846.57 POINTSOURCE CAR60 81.1 81.1 Lw 81.1 5.00 a 6274492.01 2213881.89 POINTSOURCE CAR61 81.1 81.1 Lw 81.1 5.00 a 627449.047 2213818.94 POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 627448.30 221381.894 POINTSOURCE CAR63 81.1 81.1 Lw 81.1 5.00 a 627448.63 2213782.10														-			5.00
POINTSOURCE CAR56 81.1 81.1 Lw 81.1 5.00 a 6274543.89 2213882.18 POINTSOURCE CAR57 81.1 81.1 Lw 81.1 5.00 a 6274543.89 2213882.18 POINTSOURCE CAR58 81.1 81.1 Lw 81.1 5.00 a 6274514.41 2213844.73 POINTSOURCE CAR59 81.1 81.1 Lw 81.1 5.00 a 627448.54 2213846.57 POINTSOURCE CAR60 81.1 81.1 Lw 81.1 5.00 a 627448.10 2213818.94 POINTSOURCE CAR61 81.1 81.1 W 81.1 5.00 a 627448.10 2213818.94 POINTSOURCE CAR63 81.1 81.1 W 81.1 5.00 a 627448.10 2213780.87 POINTSOURCE CAR64 81.1 81.1 W 81.1 5.00 a 6274432.17 2213780.87 <t< td=""><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>5.00</td></t<>					-			-						-			5.00
POINTSOURCE CAR57 81.1 81.1 Lw 81.1 5.00 a 6274514.41 2213844.73 POINTSOURCE CAR58 81.1 81.1 Lw 81.1 5.00 a 6274514.41 2213844.73 POINTSOURCE CAR58 81.1 81.1 Lw 81.1 5.00 a 6274458.54 2213846.57 POINTSOURCE CAR60 81.1 81.1 Lw 81.1 5.00 a 627448.01 2213848.54 POINTSOURCE CAR61 81.1 81.1 Lw 81.1 5.00 a 627448.01 2213818.94 POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 627448.02 2213780.87 POINTSOURCE CAR63 81.1 81.1 Lw 81.1 5.00 a 627447.49 2213780.87 POINTSOURCE CAR64 81.1 81.1 Lw 81.1 5.00 a 6274438.63 2213780.87	POINTSOURCE		CAR55	81.1	81.1	81.1	Lw	81.1					5.00	а	6274492.31	2213883.41	5.00
POINTSOURCE CAR58 81.1 81.1 k 81.1 k 81.1 k 1 k 81.1 k <th< td=""><td>POINTSOURCE</td><td></td><td>CAR56</td><td>81.1</td><td>81.1</td><td>81.1</td><td>Lw</td><td>81.1</td><td></td><td></td><td></td><td></td><td>5.00</td><td>а</td><td>6274543.89</td><td>2213882.18</td><td>5.00</td></th<>	POINTSOURCE		CAR56	81.1	81.1	81.1	Lw	81.1					5.00	а	6274543.89	2213882.18	5.00
POINTSOURCE CAR59 81.1 81.1 Lw 81.1 5.00 a 6274408.81 2213846.57 POINTSOURCE CAR60 81.1 81.1 Lw 81.1 5.00 a 6274408.81 2213846.57 POINTSOURCE CAR61 81.1 81.1 Lw 81.1 5.00 a 6274420.47 2213818.94 POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 6274420.47 2213821.40 POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 627447.49 2213782.10 POINTSOURCE CAR63 81.1 81.1 W 81.1 5.00 a 6274495.17 2213745.87 POINTSOURCE CAR65 81.1 81.1 W 81.1 5.00 a 627439.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 W 81.1 5.00 a 6274324.51 2214892.19							Lw							-			5.00
POINTSOURCE CAR60 81.1 81.1 Lw 81.1 5.00 a 6274483.10 2213818.94 POINTSOURCE CAR61 81.1 81.1 Lw 81.1 5.00 a 6274483.10 2213818.94 POINTSOURCE CAR61 81.1 81.1 Lw 81.1 5.00 a 6274420.47 2213821.40 POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 627448.63 2213782.10 POINTSOURCE CAR63 81.1 81.1 Lw 81.1 5.00 a 627448.63 2213780.87 POINTSOURCE CAR64 81.1 81.1 Lw 81.1 5.00 a 6274451.17 2213780.87 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274394.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274321.09 2214891.88	POINTSOURCE		CAR58	81.1	81.1	81.1	Lw	81.1					5.00	a			5.00
POINTSOURCE CAR61 81.1 81.1 Lw 81.1 5.00 a 6274420.47 2213821.40 POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 6274420.47 2213821.40 POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 6274447.49 2213782.10 POINTSOURCE CAR63 81.1 81.1 Lw 81.1 5.00 a 6274421.72 2213780.87 POINTSOURCE CAR64 81.1 81.1 Lw 81.1 5.00 a 6274439.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274424.16 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274424.16 2214892.19 POINTSOURCE CAR67 81.1 81.1 Lw 81.1 5.00 a 6274424.16 221493.42	POINTSOURCE		CAR59	81.1	81.1	81.1	Lw	81.1					5.00	а	6274408.81	2213846.57	5.00
POINTSOURCE CAR62 81.1 81.1 Lw 81.1 5.00 a 627447.49 2213782.10 POINTSOURCE CAR63 81.1 81.1 Lw 81.1 5.00 a 627447.49 2213782.10 POINTSOURCE CAR63 81.1 81.1 Lw 81.1 5.00 a 627448.63 2213780.87 POINTSOURCE CAR64 81.1 81.1 Lw 81.1 5.00 a 6274451.17 2213780.87 POINTSOURCE CAR65 81.1 81.1 Lw 81.1 5.00 a 6274391.69 2214891.58 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274424.16 2214931.58 POINTSOURCE CAR67 81.1 81.1 W 81.1 5.00 a 6274424.16 2214932.42 POINTSOURCE CAR68 81.1 81.1 W 81.1 5.00 a 6274426.00 2214992.27	POINTSOURCE		CAR60	81.1	81.1	81.1	Lw	81.1					5.00	а	6274483.10	2213818.94	5.00
POINTSOURCE CAR63 81.1 81.1 Lw 81.1 5.00 a 6274488.63 2213780.87 POINTSOURCE CAR64 81.1 81.1 Lw 81.1 5.00 a 6274488.63 2213780.87 POINTSOURCE CAR64 81.1 81.1 Lw 81.1 5.00 a 6274481.17 2213745.87 POINTSOURCE CAR65 81.1 81.1 Lw 81.1 5.00 a 6274391.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274321.09 2214891.58 POINTSOURCE CAR67 81.1 81.1 W 81.1 5.00 a 6274424.16 2214938.86 POINTSOURCE CAR68 81.1 81.1 W 81.1 5.00 a 6274426.00 2214993.22 POINTSOURCE CAR70 81.1 81.1 W 81.1 5.00 a 6274426.00 2214992.27	POINTSOURCE		CAR61	81.1	81.1	81.1	Lw	81.1					5.00	а	6274420.47	2213821.40	5.00
POINTSOURCE CAR64 81.1 81.1 Lw 81.1 5.00 a 6274451.17 2213745.87 POINTSOURCE CAR65 81.1 81.1 Lw 81.1 5.00 a 6274451.17 2213745.87 POINTSOURCE CAR65 81.1 81.1 Lw 81.1 5.00 a 6274391.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274351.09 2214891.58 POINTSOURCE CAR67 81.1 81.1 Lw 81.1 5.00 a 627442.16 2214938.86 POINTSOURCE CAR68 81.1 81.1 Lw 81.1 5.00 a 627442.02 221493.42 POINTSOURCE CAR69 81.1 81.1 W 81.1 5.00 a 627442.02 2214932.27 POINTSOURCE CAR70 81.1 81.1 W 81.1 5.00 a 6274427.23 2215026.04 <	POINTSOURCE	L	CAR62	81.1	81.1	81.1	Lw	81.1					5.00	а	6274447.49	2213782.10	5.00
POINTSOURCE CAR65 81.1 81.1 Lw 81.1 5.00 a 6274394.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274394.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274321.09 2214891.58 POINTSOURCE CAR67 81.1 81.1 Lw 81.1 5.00 a 6274324.16 2214938.86 POINTSOURCE CAR68 81.1 81.1 W 81.1 5.00 a 6274324.20 2214993.42 POINTSOURCE CAR69 81.1 81.1 W 81.1 5.00 a 6274426.00 2214992.27 POINTSOURCE CAR70 81.1 81.1 W 81.1 5.00 a 6274427.23 2215026.04 POINTSOURCE CAR71 81.1 81.1 W 81.1 5.00 a 6274427.23 2215056.13	POINTSOURCE		CAR63	81.1	81.1	81.1	Lw	81.1					5.00	а	6274488.63	2213780.87	5.00
POINTSOURCE CAR65 81.1 81.1 Lw 81.1 5.00 a 6274394.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274394.69 2214892.19 POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274321.09 2214891.58 POINTSOURCE CAR67 81.1 81.1 Lw 81.1 5.00 a 6274324.16 2214938.86 POINTSOURCE CAR68 81.1 81.1 W 81.1 5.00 a 6274324.20 2214993.42 POINTSOURCE CAR69 81.1 81.1 W 81.1 5.00 a 6274426.00 2214992.27 POINTSOURCE CAR70 81.1 81.1 W 81.1 5.00 a 6274427.23 2215026.04 POINTSOURCE CAR71 81.1 81.1 W 81.1 5.00 a 6274427.23 2215056.13	POINTSOURCE		CAR64	81.1	81.1	81.1	Lw	81.1					5.00	а	6274451.17	2213745.87	5.00
POINTSOURCE CAR66 81.1 81.1 Lw 81.1 5.00 a 6274351.09 2214891.58 POINTSOURCE CAR67 81.1 81.1 Lw 81.1 5.00 a 6274321.09 2214891.58 POINTSOURCE CAR67 81.1 81.1 Lw 81.1 5.00 a 627432.32 2214938.86 POINTSOURCE CAR68 81.1 81.1 Lw 81.1 5.00 a 627432.32 2214934.42 POINTSOURCE CAR69 81.1 81.1 Lw 81.1 5.00 a 627442.00 2214992.27 POINTSOURCE CAR70 81.1 81.1 Lw 81.1 5.00 a 627442.03 2214992.27 POINTSOURCE CAR70 81.1 81.1 W 81.1 5.00 a 627442.03 2215026.04 POINTSOURCE CAR71 81.1 81.1 Lw 81.1 5.00 a 627438.55 221505.03 <td< td=""><td>POINTSOURCE</td><td></td><td>CAR65</td><td>81.1</td><td>81.1</td><td>81.1</td><td>Lw</td><td>81.1</td><td></td><td></td><td></td><td></td><td>5.00</td><td>а</td><td>6274394.69</td><td>2214892.19</td><td>5.00</td></td<>	POINTSOURCE		CAR65	81.1	81.1	81.1	Lw	81.1					5.00	а	6274394.69	2214892.19	5.00
POINTSOURCE CAR67 81.1 81.1 Lw 81.1 st.1														-			5.00
POINTSOURCE CAR68 81.1 81.1 Lw 81.1 5.00 a 6274387.32 2214963.42 POINTSOURCE CAR69 81.1 81.1 Lw 81.1 5.00 a 6274387.32 2214963.42 POINTSOURCE CAR69 81.1 81.1 Lw 81.1 5.00 a 6274387.32 221492.27 POINTSOURCE CAR70 81.1 81.1 Lw 81.1 5.00 a 6274387.32 2215026.04 POINTSOURCE CAR71 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215026.04 POINTSOURCE CAR71 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215056.13 POINTSOURCE CAR72 81.1 81.1 Lw 81.1 5.00 a 627438.55 2215095.42 POINTSOURCE CAR73 81.1 81.1 Lw 81.1 5.00 a 6274427.23 22153.67														-			5.00
POINTSOURCE CAR69 81.1 81.1 Lw 81.1 M 5.00 a 6274426.00 2214992.27 POINTSOURCE CAR70 81.1 81.1 Lw 81.1 5.00 a 6274426.00 2214992.27 POINTSOURCE CAR70 81.1 81.1 Lw 81.1 5.00 a 6274387.32 2215026.04 POINTSOURCE CAR71 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215056.13 POINTSOURCE CAR72 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215056.13 POINTSOURCE CAR72 81.1 81.1 Lw 81.1 5.00 a 6274427.23 221505.42 POINTSOURCE CAR73 81.1 81.1 Lw 81.1 5.00 a 6274427.23 221505.42																	5.00
POINTSOURCE CAR70 81.1 81.1 Lw 81.1 M 5.00 a 6274387.32 2215026.04 POINTSOURCE CAR71 81.1 81.1 Lw 81.1 5.00 a 6274387.32 2215026.04 POINTSOURCE CAR71 81.1 81.1 Lw 81.1 5.00 a 6274327.23 2215056.13 POINTSOURCE CAR72 81.1 81.1 Lw 81.1 5.00 a 627438.55 2215095.42 POINTSOURCE CAR73 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215026.04														-			5.00
POINTSOURCE CAR71 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215056.13 POINTSOURCE CAR72 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215056.13 POINTSOURCE CAR72 81.1 81.1 Lw 81.1 5.00 a 627438.55 2215095.42 POINTSOURCE CAR73 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215036.13		-												-			5.00
POINTSOURCE CAR72 81.1 81.1 Lw 81.1 5.00 a 6274388.55 2215095.42 POINTSOURCE CAR73 81.1 81.1 Lw 81.1 5.00 a 6274388.55 2215095.42														_			5.00
POINTSOURCE CAR73 81.1 81.1 Lw 81.1 5.00 a 6274427.23 2215123.67		+												-			5.00
		-												-			
CUINTSOURCE CAR/4 01.1 01.1 01.1 LW 01.1 5.00 a 02/435/.85 2215123.6/		-												-			5.00
		-												-			5.00
POINTSOURCE CAR75 81.1 81.1 81.1 LW 81.1 5.00 a 6274360.30 2215067.79		-															5.00
POINTSOURCE CAR76 81.1 81.1 81.1 Lw 81.1 5.00 a 6274360.92 2214991.05		<u> </u>															5.00
POINTSOURCE CAR77 81.1 81.1 Lw 81.1 5.00 a 6274359.07 2214937.01		-					-							-			5.00
POINTSOURCE TRASH01 89.0 89.0 89.0 Lw 89 5.00 a 6274436.79 2214454.57		<u> </u>												-			5.00
POINTSOURCE TRASH02 89.0 89.0 Lw 89 5.00 a 6274433.82 2214037.64	POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89					5.00	а	6274433.82	2214037.64	5.00

Line Source(s)

Name	М.	ID	R	esult. PW	'L	R	esult. PW	Ľ		Lw / L	i	Op	erating Ti	me		Moving Pt. Src			Heig	nt
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE		TRUCK01	93.2	93.2	93.2	65.9	65.9	65.9	Lw	93.2									8	a
LINESOURCE		TRUCK02	93.2	93.2	93.2	71.5	71.5	71.5	Lw	93.2									8	a

Name	ŀ	lei	ght		Coordinat	es	
	Begin		End	х	У	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE	8.00	а		6274838.03	2214847.99	8.00	0.00
				6274405.12	2214852.28	8.00	0.00
				6274374.42	2214841.23	8.00	0.00
				6274354.78	2214816.67	8.00	0.00
				6274351.09	2214035.06	8.00	0.00
				6274363.37	2214022.78	8.00	0.00
				6274387.93	2214016.64	8.00	0.00
				6274423.54	2214014.19	8.00	0.00
				6274836.61	2214014.18	8.00	0.00
LINESOURCE	8.00	а		6274352.97	2214432.32	8.00	0.00
				6274837.32	2214430.48	8.00	0.00

Area Source(s)

Name	M.	ID	R	esult. PW	'L	Re	esult. PW	L''		Lw/L	i	Op	erating Ti	me	Height	
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	П
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		П
AREASOURCE		DOCK01	111.5	111.5	111.5	76.4	76.4	76.4	Lw	111.5					8	а
AREASOURCE		DOCK02	111.5	111.5	111.5	76.5	76.5	76.5	Lw	111.5					8	а

Name	ŀ	lei	ght			Coordinat	es	
	Begin		End		х	У	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
AREASOURCE	8.00	а			6274441.18	2214529.98	8.00	0.00
					6274701.73	2214528.05	8.00	0.00
					6274698.23	2214391.08	8.00	0.00
					6274444.99	2214392.99	8.00	0.00
AREASOURCE	8.00	а			6274440.21	2214115.43	8.00	0.00
					6274698.82	2214111.55	8.00	0.00
					6274694.40	2213979.64	8.00	0.00
					6274441.16	2213980.92	8.00	0.00

Building(s)

Name	М.	ID	RB	Residents	Absorption	Height			Coordinat	es	
						Begin		х	У	z	Ground
						(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING		BUILDING00001	х	0		45.00	а	6274395.66	2214808.94	45.00	0.00
								6274806.34	2214805.06	45.00	0.00
								6274803.43	2214471.87	45.00	0.00
								6274701.73	2214470.90	45.00	0.00
								6274701.73	2214528.05	45.00	0.00
								6274441.18	2214529.98	45.00	0.00
								6274442.15	2214468.96	45.00	0.00
								6274387.91	2214472.84	45.00	0.00
BUILDING		BUILDING00002	х	0		45.00	а	6274389.84	2214390.51	45.00	0.00
								6274803.43	2214389.54	45.00	0.00
								6274798.59	2214052.47	45.00	0.00
								6274695.92	2214051.50	45.00	0.00
								6274698.82	2214111.55	45.00	0.00
								6274440.21	2214115.43	45.00	0.00
								6274439.24	2214051.50	45.00	0.00
								6274385.97	2214055.38	45.00	0.00



APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS





14775 - Barnett & Ethanac

CadnaA Noise Prediction Model: 14775-03_Construction.cna Date: 21.11.22 Analyst: B. Lawson

Calculation Configuration

Configurat	ion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID		Level Lr		Lir	nit. Valu	ue		Land	Use	Height		Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)	
RECEIVERS		R1	51.1	-53.7	48.1	65.0	45.0	0.0				5.00	а	6272495.65	2215025.66	5.00	
RECEIVERS		R2	48.0	-56.8	45.0	65.0	45.0	0.0				5.00	а	6276823.49	2212557.32	5.00	
RECEIVERS		R3	50.0	-54.8	46.9	65.0	45.0	0.0				5.00	а	6274958.22	2211990.63	5.00	
RECEIVERS		R4	52.9	-51.9	49.9	65.0	45.0	0.0				5.00	а	6274472.96	2212550.70	5.00	
RECEIVERS		R5	51.2	-53.6	48.2	65.0	45.0	0.0				5.00	а	6273364.28	2212597.76	5.00	
RECEIVERS		R6	52.7	-52.1	49.7	65.0	45.0	0.0				5.00	а	6272901.98	2213645.67	5.00	

Area Source(s)

Name	М.	ID	R	Result. PWL			esult. PW	L"		Lw / Li		Ope	erating T	me	Height	t
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	П
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		П
SITEBOUNDARY		CONSTRUCTION	119.8	15.0	15.0	72.3	-32.4	-32.4	PWL-Pt	115					8	а

Name	ŀ	lei	ght		Coordinat	es	
	Begin		End	х	у	z	Ground
	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	8.00	а		6274265.63	2215191.43	8.00	0.00
				6274452.49	2215187.54	8.00	0.00
				6274476.61	2215187.04	8.00	0.00
				6274475.86	2215136.05	8.00	0.00
				6274502.36	2215135.66	8.00	0.00
				6274498.29	2214859.44	8.00	0.00
				6274838.05	2214855.50	8.00	0.00

Name	He	ight		Coordinat	es	
	Begin	End	x	у	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6274836.53	2213964.83	8.00	0.00
			6274666.36	2213969.25	8.00	0.00
			6274513.96	2213641.75	8.00	0.00
			6274489.49	2213642.13	8.00	0.00
			6274418.69	2213705.98	8.00	0.00
			6274379.50	2213758.45	8.00	0.00
			6274349.12	2213816.47	8.00	0.00
			6274328.32	2213878.58	8.00	0.00
			6274318.42	2213936.81	8.00	0.00
			6274316.18	2213973.16	8.00	0.00
			6274317.34	2214618.82	8.00	0.00
			6274315.99	2214996.77	8.00	0.00
			6274306.40	2215064.88	8.00	0.00
			6274288.92	2215131.41	8.00	0.00

APPENDIX 10.2:

CADNAA CONCRETE POUR NOISE MODEL INPUTS





14775 - Barnett & Ethanac

CadnaA Noise Prediction Model: 14775-03_ConcretePour.cna Date: 21.11.22 Analyst: B. Lawson

Calculation Configuration

Configurat	ion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID		Level Lr		Lir	nit. Val	ue		Land	Use	Height		Co	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	37.4	37.4	44.0	65.0	45.0	0.0				5.00	а	6272495.65	2215025.66	5.00
RECEIVERS		R2	34.8	34.8	41.4	65.0	45.0	0.0				5.00	а	6276823.49	2212557.32	5.00
RECEIVERS		R3	36.7	36.7	43.4	65.0	45.0	0.0				5.00	а	6274958.22	2211990.63	5.00
RECEIVERS		R4	39.5	39.5	46.2	65.0	45.0	0.0				5.00	а	6274472.96	2212550.70	5.00
RECEIVERS		R5	37.8	37.8	44.4	65.0	45.0	0.0				5.00	а	6273364.28	2212597.76	5.00
RECEIVERS		R6	39.2	39.2	45.8	65.0	45.0	0.0				5.00	а	6272901.98	2213645.67	5.00

Area Source(s)

Name	М.	ID	R	esult. PW	'L	Re	esult. PW	L''		Lw/L	i	Op	me	Height	t	
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE		DOCK01	100.3	100.3	100.3	65.2	65.2	65.2	Lw	100.3					8	а
AREASOURCE		DOCK02	100.3	100.3	100.3	65.3	65.3	65.3	Lw	100.3					8	а
BUILDING		BUILDING00001	100.3	100.3	100.3	59.7	59.7	59.7	Lw	100.3					8	а
BUILDING		BUILDING00002	100.3	100.3	100.3	59.7	59.7	59.7	Lw	100.3					8	a

Name	Height				Coordinates				
	Begin		End		х	У	z	Ground	
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)	
AREASOURCE	8.00	а			6274441.18	2214529.98	8.00	0.00	
					6274701.73	2214528.05	8.00	0.00	
					6274698.23	2214391.08	8.00	0.00	
					6274444.99	2214392.99	8.00	0.00	

Name	Height				Coordinates				
	Begin		End		х	У	z	Ground	
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)	
AREASOURCE	8.00	а			6274440.21	2214115.43	8.00	0.00	
					6274698.82	2214111.55	8.00	0.00	
					6274694.40	2213979.64	8.00	0.00	
					6274441.16	2213980.92	8.00	0.00	
BUILDING	8.00	а			6274395.66	2214808.94	8.00	0.00	
					6274806.34	2214805.06	8.00	0.00	
					6274803.43	2214471.87	8.00	0.00	
					6274701.73	2214470.90	8.00	0.00	
					6274701.73	2214528.05	8.00	0.00	
					6274441.18	2214529.98	8.00	0.00	
					6274442.15	2214468.96	8.00	0.00	
					6274387.91	2214472.84	8.00	0.00	
BUILDING	8.00	а			6274389.84	2214390.51	8.00	0.00	
					6274803.43	2214389.54	8.00	0.00	
					6274798.59	2214052.47	8.00	0.00	
					6274695.92	2214051.50	8.00	0.00	
					6274698.82	2214111.55	8.00	0.00	
					6274440.21	2214115.43	8.00	0.00	
					6274439.24	2214051.50	8.00	0.00	
					6274385.97	2214055.38	8.00	0.00	