

# JS 63 MX (f.k.a. Milestone MX Ethanac Road Motorcycle Park) Noise Impact Analysis County of Riverside

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12374-09 Noise Study



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# LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
Hz	Hertz
INCE	Institute of Noise Control Engineering
L <sub>eq</sub>	Equivalent continuous (average) sound level
L <sub>max</sub>	Maximum level measured over the time interval
L <sub>min</sub>	Minimum level measured over the time interval
MX	Motocross
mph	Miles per hour
MSHCP	Multiple Species Habitat Conservation Plan
OPR	Office of Planning and Research
Project	JS 63 MX
REMEL	Reference Energy Mean Emission Level

# **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 JS 63 MX development ("Project"), formerly known as Milestone MX Ethanac Road Motorcycle Park ("Project"). The Project site is located at 21220 Ethanac Road in the County of Riverside. The Project is a Motorcycle Park/Racetrack proposed to consist of various tracks, approximately six structures, and five parking lots. The tracks would be available for practice 7 days a week and events would be limited to weekends and are estimated at approximately 15 per year. The facility would be open for evening practice 3 days per week. All Project activities will be limited to the daytime hours between 7:00 a.m. and 10:00 p.m. with no nighttime activities between the hours of 10:00 p.m. to 7:00 a.m.

This study has been prepared to satisfy applicable County of Riverside standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

## OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on eight study-area roadway segments were calculated using the transportation related twenty-four-hour Community Noise Equivalent Levels (CNEL) based on average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in the *JS 63 MX Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (2) The analysis shows that the unmitigated Project-related traffic noise level increases with Project traffic scenarios are considered *less than significant* impacts at land uses adjacent to the study area roadway segments.

While the noise sensitive residential land uses located on Ethanac Road west of SR-74 will experience an off-site Project related traffic noise level increase of 5.5 dBA CNEL, the exterior noise levels of 57.0 dBA CNEL at the boundary of the right-of-way will remain well below the County of Riverside exterior transportation related noise level standards of 65 dBA CNEL.

### **OPERATIONAL NOISE ANALYSIS**

Based on a review of the existing Milestone MX facility in the Riverside area on 12685 Holly Street, the primary operational noise sources are expected to consist of various motocross and off-road all-terrain vehicle activity. Using reference noise levels collected from the existing Milestone MX to represent the expected noise sources from the JS 63 MX site, the operational noise analysis estimates the Project-related stationary-source hourly average L<sub>eq</sub> noise levels at nearby sensitive receiver locations. To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against the exterior noise limits outlined in Policy N 4.1 of the Noise Element.



The operational noise analysis shows the expected Project operational noise are expected to range from 48.0 to 54.7 dBA  $L_{eq}$  during the daytime hours of 7:00 a.m. to 10:00 p.m. The operational noise analysis demonstrates that the operational noise levels associated with JS 63 MX Project will satisfy the County of Riverside 65 dBA  $L_{eq}$  daytime exterior noise level standards at all nearby receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations provided that all Project activities will be limited to the daytime hours between 7:00 a.m. and 10:00 p.m.

Since the existing ambient noise levels already exceed the general exterior sound level standards of 45 dBA L<sub>eq</sub>, the Project would request an exemption from certain requirements of Ordinance No. 847 in accordance with Section 7, Exceptions, which specifically allows for the application for continuous exceptions from the provisions of Ordinance No. 847. The exemptions are subject to a fee and the County Planning Director's approval.

In addition, the operational noise analysis shows that the Project-related motocross noise levels will satisfy the 65 dBA L<sub>eq</sub> exterior noise level threshold identified for the proposed MSHCP Conservation Areas. Accordingly, the Project's noise impacts to the adjacent MSHCP Conservation Area would be *less than significant*.

### SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this JS 63 MX Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures described below.

Anchusia	Report	Significance Findings		
Analysis	Section	Unmitigated	Mitigated	
Off-Site Traffic Noise	7	Less Than Significant	-	
Operational Noise	9	Less Than Significant	-	



# 1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed JS 63 MX ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, describes the local regulatory setting, provides the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes a detailed analysis of the potential Project-related motorcycle operational noise impacts.

# 1.1 SITE LOCATION

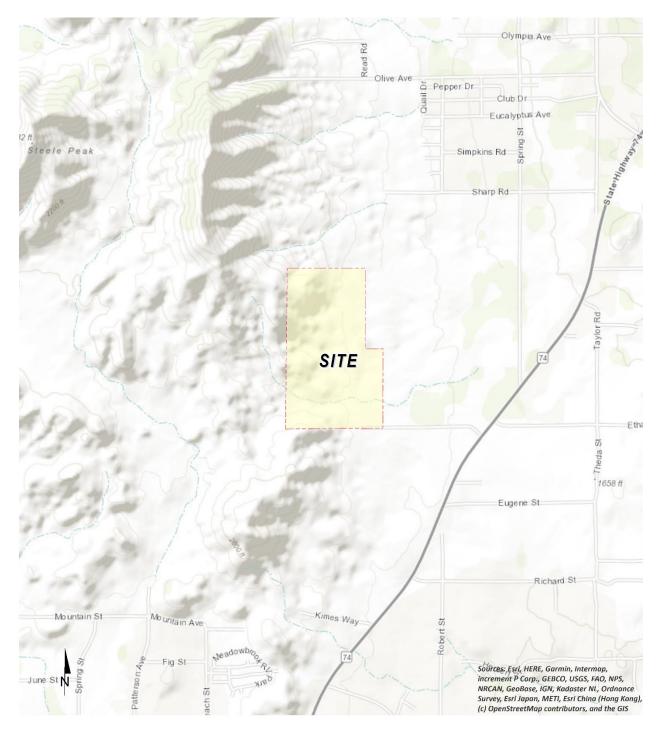
The proposed JS 63 MX site is located at 21220 Ethanac Road in the County of Riverside, as shown in Exhibit 1-A. Existing land uses near the site include nearby noise sensitive residential homes located to the north and the east of the site. Access to the Project site will be provided to the SR-74 Highway via Ethanac Road.

# **1.2 PROJECT DESCRIPTION**

The Project is a Motorcycle Park/Racetrack proposed to consist of various tracks, approximately six structures, and five parking lots as shown on Exhibit 1-B. The six proposed structures would consist of the following uses: proposed storage units with a bathroom (with 4-6 stalls) and snack bar; proposed bike wash; proposed Pro Shop building; proposed Pro Race Shops building; proposed ticket booth; and a proposed event hall building with a bathroom and shower area. There would be four parking areas for automobiles and a designated R.V. (Recreational Vehicle) parking area. The tracks would be available for practice 7 days a week and events would be limited to weekends and are estimated at approximately 15 per year. The facility would be open for evening practice 3 days per week. All Project activities will be limited to the daytime hours between 7:00 a.m. and 10:00 p.m. with no nighttime activities between the hours of 10:00 p.m.

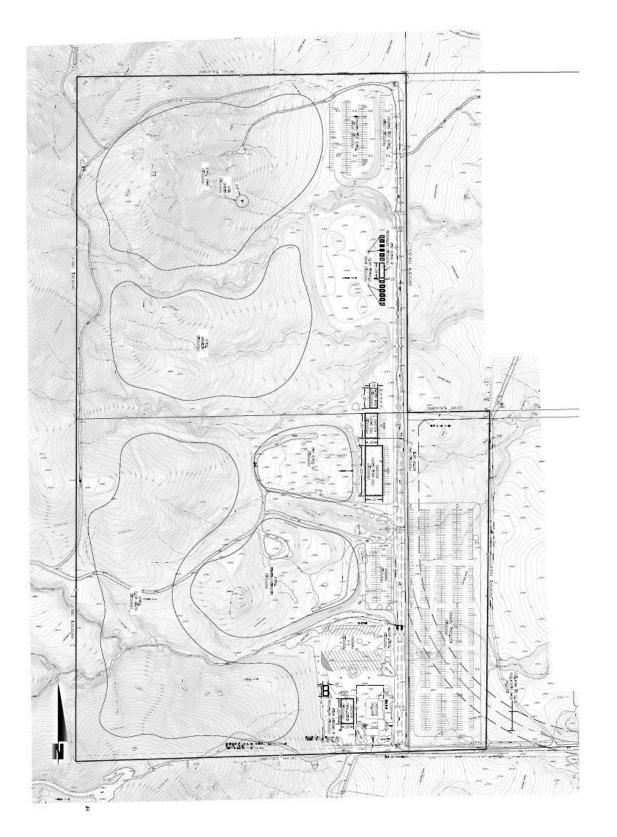
Per the *JS 63 MX Traffic Impact Analysis* (TIA) prepared by Urban Crossroads, Inc. the Project is expected to generate a total of approximately 410 two-way vehicular trips per day (2).





#### EXHIBIT 1-A: LOCATION MAP

EXHIBIT 1-B: SITE PLAN





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# 2 FUNDAMENTALS

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

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE	
THRESHOLD OF PAIN		140	$\nearrow$		
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	CLEED	
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		SLEEP DISTURBANCE	
QUIET SUBURBAN NIGHTTIME	LIBRARY	30			
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT		
	BROADCAST/RECORDING STUDIO	10		NO EFFECT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0	VENTFAINI		

### EXHIBIT 2-A: TYPICAL NOISE LEVELS

# 2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (3) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 100 feet, which can cause serious discomfort. (4) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

# 2.2 NOISE DESCRIPTORS

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

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of 5 decibels to dBA  $L_{eq}$  sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The County of Riverside 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. (3)

# 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. (5)

### 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. (3)

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

# 2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial



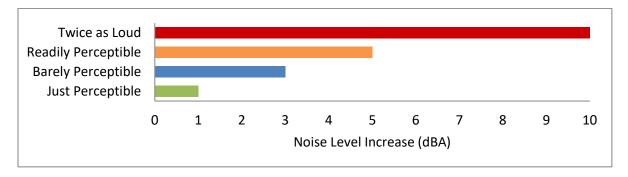
developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work.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

## 2.7 COMMUNITY RESPONSE TO NOISE

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

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

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Another twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (7) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (7) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (5)



#### EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



# 3 Regulatory Setting

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles (including motorcycles), while regulation of stationary (operational) noise 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). (8) 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 COUNTY OF RIVERSIDE GENERAL PLAN NOISE ELEMENT

The County of Riverside has adopted a Noise Element of the General Plan to control and abate environmental noise, and to protect the citizens of County of Riverside from excessive exposure to noise. (9) The Noise Element specifies the maximum allowable 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 County of Riverside residents from excessive noise, the Noise Element contains the following policies related to the Project:

- N 1.1 Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.
- N 1.3 Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:
  - Schools
  - Hospitals
  - Rest Homes
  - Long Term Care Facilities
  - Mental Care Facilities



- Residential Uses
- Libraries
- Passive Recreation Uses
- Places of Worship
- N 1.5 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.
- *N* 4.1 *Prohibit facility-related noise, received by any sensitive use, from exceeding the following worst-case noise levels:* 
  - a. 45 dBA 10-minute  $L_{eq}$  between 10:00 p.m. and 7:00 a.m.
  - b. 65 dBA 10-minute  $L_{eq}$  between 7:00 a.m. and 10:00 p.m.

To ensure noise-sensitive land uses are protected from high levels of noise (N 1.1), Table N-1 of the Noise Element identifies guidelines to evaluate proposed developments based on exterior and interior noise level limits for land uses and requires a noise analysis to determine needed mitigation measures if necessary. The Noise Element identifies residential use as a noise-sensitive land use (N 1.3) and discourages new development in areas with transportation related levels of 65 dBA CNEL or greater existing ambient noise levels. To prevent and mitigate noise impacts for its residents (N 1.5), County of Riverside requires noise attenuation measures for sensitive land use exposed to transportation related noise levels higher than 65 dBA CNEL. Policy N 4.1 of the Noise Element sets a stationary-source exterior noise limit to not to be exceeded for a cumulative period of more than ten minutes in any hour of 65 dBA L<sub>eq</sub> for daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA L<sub>eq</sub> during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m.

### **3.3** COUNTY OF RIVERSIDE STATIONARY NOISE STANDARDS

In addition to the guidelines and policies contained in the General Plan Noise Element, the County of Riverside has adopted Noise Regulations as part of its Ordinance No. 847 regulating noise to limit noise that may jeopardize the health, safety or general welfare of residents and degrade their quality of life. Ordinance No. 847 establishes the general sound level standards that may intrude into a neighboring property. According to Section 4 Table 1, exterior noise levels for the noise sensitive rural residential land uses shall not exceed 45 dBA  $L_{eq}$  during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA  $L_{eq}$  during the nighttime hours (10:00 p.m. to 7:00 a.m.). (10) The County of Riverside Noise Ordinance Regulations are included in Appendix 3.1.

However, a review of the existing ambient noise level measurements presented in Section 5 shows that the existing daytime ambient noise levels already exceed the general exterior sound level standards of 45 dBA  $L_{eq}$ . Therefore, the Project would request an exemption from certain requirements of Ordinance No. 847 in accordance with Section 7, Exceptions, which specifically allows for the application for continuous exceptions from the provisions of Ordinance No. 847. The exemptions are subject to a fee and the County Planning Director's approval. Since the existing ambient noise levels in the Project study area already exceed the 45 dBA  $L_{eq}$  general exterior sound level standards for rural residential land use, this analysis relies on stationary-source daytime exterior noise limit of 65 dBA  $L_{eq}$  outlined in Policy N 4.1 of the Noise Element



# 4 SIGNIFICANCE CRITERIA

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

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

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

### CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is not located within an airport land use plan or within 2 miles of a public airport, or within the vicinity of a private airstrip. Therefore, the Project would not result in potential noise impacts for people residing or working at the Project site. As such, the Project does not have the potential to expose people residing or working in the Project area to excessive noise levels and no impact would occur. No further analysis of CEQA Guideline C is required.

# 4.1 NOISE-SENSITIVE RECEIVERS

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 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.* (11)

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (12) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L<sub>eq</sub>).

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. (11) 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 existing 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 exceedance.

## 4.2 NON-NOISE-SENSITIVE RECEIVERS

The County of Riverside General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure* 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 levels for non-noise-sensitive land uses is 70 dBA CNEL. Noise levels greater than 70 dBA CNEL are considered *conditionally acceptable* per the *Land Use Compatibility for Community Noise Exposure*. (9)

To determine if Project-related traffic noise level increases are significant at off-site non-noisesensitive land uses, a *readily perceptible* 5 dBA and *barely perceptible* 3 dBA criteria were used. When the without Project noise levels at the non-noise-sensitive land uses are below the *normally acceptable* 70 dBA CNEL compatibility criteria, a *readily perceptible* 5 dBA or greater noise level increase is considered a significant impact. When the without Project noise levels are greater than the *normally acceptable* 70 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the County of Riverside General Plan Noise Element, Table N-1, *Land Use Compatibility for Community Noise Exposure normally acceptable* 70 dBA CNEL exterior noise level criteria.



### 4.3 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-2 shows the significance criteria summary matrix.

### OFF-SITE TRAFFIC NOISE

- When the noise levels at existing and future noise-sensitive land uses (e.g. residential, etc.):
  - are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater Project-related noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
  - range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater Project-related noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
  - already exceed 65 dBA CNEL, and the Project creates a community noise level increase of greater than 1.5 dBA CNEL (FICON, 1992).
- When the noise levels at existing and future non-noise-sensitive land uses (e.g., office, commercial, industrial):
  - are less than the County of Riverside General Plan Noise Element, Table N-1, normally acceptable 70 dBA CNEL and the Project creates a readily perceptible 5 dBA CNEL or greater Project related noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
  - are greater than the County of Riverside General Plan Noise Element, Table N-1, normally acceptable 70 dBA CNEL and the Project creates a barely perceptible 3 dBA CNEL or greater Project noise level increase.

#### **OPERATIONAL NOISE**

- If Project-related operational (stationary-source) noise levels exceed the exterior 65 dBA L<sub>eq</sub> daytime or 45 dBA L<sub>eq</sub> nighttime noise level standards at nearby sensitive receiver locations (Policy N 4.1 of the Noise Element)
- If the existing ambient noise levels at the nearby noise-sensitive receivers near the Project site:
  - are less than 60 dBA L<sub>eq</sub> and the Project creates a *readily perceptible* 5 dBA L<sub>eq</sub> or greater Project-related noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
  - range from 60 to 65 dBA L<sub>eq</sub> and the Project creates a *barely perceptible* 3 dBA L<sub>eq</sub> or greater Project-related noise level increase and the resulting noise level would exceed acceptable exterior noise standards; or
  - $\circ~$  already exceed 65 dBA  $L_{eq}$  and the Project creates a community noise level increase of greater than 1.5 dBA  $L_{eq}$  (FICON, 1992).



Analysia	Receiving		Significance Criteria		
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase and th resulting noise level would exceed acceptable exterior noise standards		
	Noise- Sensitive <sup>1</sup>	If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase and the resulting noise level would exceed acceptable exterior noise standards		
Off-Site Traffic		If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase	
interne	Non-Noise- Sensitive <sup>1,2</sup>	If ambient is < 70 dBA CNEL	≥ 5 dBA CNEL Project increase and the resulting noise level would exceed acceptable exterior noise standards		
		If ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase and resulting noise level would excee acceptable exterior noise standard		
		Exterior Noise Level Standards <sup>3</sup>	65 dBA L <sub>eq</sub>	45 dBA L <sub>eq</sub>	
Operational	Noise-	If ambient is < 60 dBA $L_{eq}^1$	≥ 5 dBA CNEL Project increase and the resulting noise level would exceed acceptable exterior noise standards		
Operational	Sensitive	If ambient is 60 - 65 dBA L <sub>eq</sub> 1	≥ 3 dBA CNEL Project increase and the resulting noise level would exceed acceptable exterior noise standards		
		If ambient is > 65 dBA $L_{eq}^1$	$\geq$ 1.5 dBA L <sub>eq</sub> Project increase		

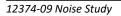
#### **TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY**

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

 $^{\rm 2}$  Source: County of Riverside General Plan Noise Element, Table N-1.

<sup>3</sup> Source: County of Riverside General Plan Noise Element, Policy 4.1.

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





# 5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at four locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Tuesday, July 30<sup>th</sup>, 2019. 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 daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (13)

# 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. (3) Further, FTA guidance states, that it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community. (14)* 

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. (14) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels



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

### 5.3 NOISE MEASUREMENT RESULTS

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

- Location L1 represents the noise levels north of the Project site on Sharp Road near existing
  residential home and vacant land. The noise levels at this location consist primarily of traffic
  noise from Sharp Road. The noise level measurements collected show an overall 24-hour
  exterior noise level of 54.2 dBA CNEL. The energy (logarithmic) average daytime noise level
  was calculated at 53.5 dBA L<sub>eq</sub> with an average nighttime noise level of 44.8 dBA L<sub>eq</sub>.
- Location L2 represents the noise levels east of the Project site. The ambient noise levels at this location account for traffic on Spring Street. The noise level measurements collected show an overall 24-hour exterior noise level of 54.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 49.0 dBA L<sub>eq</sub> with an average nighttime noise level of 47.8 dBA L<sub>eq</sub>.
- Location L3 represents the noise levels south of the project on Read Street and Ethanac Road near existing residential home. The noise level measurements collected show an overall 24hour exterior noise level of 55.8 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 50.0 dBA L<sub>eq</sub> with an average nighttime noise level of 49.0 dBA L<sub>eq</sub>. The noise levels at this location consist primarily of traffic noise from Ethanac Road.
- Location L4 represents the noise levels on the southern boundary of the Project site near existing vacant land. The 24-hour CNEL indicates that the overall exterior noise level is 50.8 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 46.7 dBA L<sub>eq</sub> with an average nighttime noise level of 43.3 dBA L<sub>eq</sub>. Traffic on Ethanac Road represents the primary source of noise at this location.

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

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



Location <sup>1</sup>	Description	Energy / Noise (dBA	CNEL	
		Daytime	Nighttime	
L1	Located north of the Project site on Sharp Road near existing residential home and vacant land.	53.5	44.8	54.2
L2	L2 Located east of the Project site.		47.8	54.5
L3	Located south of the project on Read Street and Ethanac Road near existing residential home.	50.0	49.0	55.8
L4	Located on the southern boundary of the Project site near existing vacant land.	46.7	43.3	50.8

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

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

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





EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS

LEGEND: N A Measurement Locations



# 6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment. Consistent with the County of Riverside General Plan *Land Use Compatibility for Community Noise Exposure* matrix, all transportation related noise levels are presented in terms of the 24-hour CNEL's.

### 6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The estimated roadway noise impacts from vehicular traffic were calculated using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (15) 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. (16) 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.

This is methodology is consistent with the County of Riverside Office of Industrial Hygiene *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures*, which specifically requires the FHWA RD-77-108 model to be used in analysis within the County's jurisdiction. (17)

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

Table 6-1 presents the roadway parameters used to assess the Project's off-site dBA CNEL transportation noise impacts. Table 6-1 identifies the 8 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the County of Riverside General Plan Circulation Element, and the posted vehicle speeds. The ADT volumes used in this study are presented on Table 6-2 are based on the *JS 63 MX Traffic Impact Analysis* prepared by Urban Crossroads, Inc. for the following traffic scenarios:

- 1. Existing (E) Conditions
- 2. Existing plus Project (E+P) Conditions
- 3. Existing plus Ambient (EA) Conditions
- 4. Existing plus Ambient with Project (EAP) Conditions
- 5. Existing plus Ambient plus Cumulative without Project (EAC) Conditions
- 6. Existing plus Ambient plus Cumulative with Project (EAPC) Conditions



The ADT volumes vary for each roadway segment based on the existing and future year traffic volumes plus the project traffic volumes for each traffic scenario. The *General Plan Noise Element* (18) requires that future on-site traffic noise impacts be assessed using the maximum capacity design standard for highways and major roads. However, this analysis relies on a comparative analysis of the off-site traffic noise impacts, without and with project ADT traffic volumes from the Project traffic study. The use of the maximum capacity design standards is typically reserved for determining the future long-range on-site traffic noise impacts, not the comparative contributions associated with the off-site Project traffic noise level impacts.

ID	Roadway	Segment	Receiving Land Use <sup>1</sup>	Distance from Centerline to Receiving Land Use (Feet) <sup>2</sup>	Vehicle Speed (mph)
1	SR-74	n/o Theda St.	VLDR	64'	60
2	SR-74	s/o Theda St.	VLDR/RR	64'	60
3	SR-74	n/o Ethanac Rd.	RR/LI	59'	60
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	110'	60
5	SR-74	n/o River Rd.	VLDR/MU/CR	110'	60
6	SR-74	s/o River Rd.	VLDR/MU/CR	110'	60
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	110'	60
8	Ethanac Rd.	w/o SR-74	VLDR/RR	37'	40

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

<sup>1</sup> Sources: Mead Valley Area Plan, Land Use Plan, Figure 3.

<sup>2</sup> Distance to receiving land use is based upon the right-of-way distances for each functional roadway classification provided in the General Plan Circulation Element.

"RR" = Rural Residential; "LDR" = Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use; "VLDR"= Very Low Density Residential.



			Average Daily Traffic Volumes <sup>1</sup>					
ID	Roadway	Segment	Existing		Existing + A	mbient (EA)	Existing + A Cumulati	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	SR-74	n/o Theda St.	26,059	26,248	26,841	27,030	28,241	28,430
2	SR-74	s/o Theda St.	29,216	29,426	30,093	30,303	31,643	31,853
3	SR-74	n/o Ethanac Rd.	27,965	28,175	28,804	29,014	30,352	30,562
4	SR-74	s/o Ethanac Rd.	28,879	29,089	29,745	29,955	31,293	31,503
5	SR-74	n/o River Rd.	29,949	30,159	30,847	31,057	31,937	32,147
6	SR-74	s/o River Rd.	29,404	29,614	30,286	30,496	31,226	31,436

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

<sup>1</sup> Source: Milestone JS 63 Traffic Impact Analysis, Urban Crossroads, Inc.



Vahiele Ture		Total of Time of					
Vehicle Type	Daytime	Evening	Nighttime	Day Splits			
Riverside County (Expressway, Arterial, Major)							
Autos	77.50%	12.90%	9.60%	100.00%			
Medium Trucks	84.80%	4.90%	10.30%	100.00%			
Heavy Trucks	86.50%	2.70%	10.80%	100.00%			
	Riverside	County (Secondary, C	Collector)				
Autos	75.55%	13.96%	10.49%	100.00%			
Medium Trucks	48.91%	2.17%	48.91%	100.00%			
Heavy Trucks	47.30%	5.41%	47.30%	100.00%			

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

<sup>1</sup> Source: County of Riverside Office of Industrial Hygiene, 2017.

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

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

	Тс			
Roadway	Autos	Medium Trucks	Heavy Trucks	Total
Expressway, Arterial, Major <sup>1</sup>	92.00%	3.00%	5.00%	100.00%
Secondary, Collector <sup>1</sup>	97.42%	1.84%	0.74%	100.00%

<sup>1</sup> Source: County of Riverside Office of Industrial Hygiene, 2017.

# 7 OFF-SITE TRANSPORTATION NOISE ANALYSIS

To assess the off-site transportation dBA CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *JS 63 MX Traffic Impact Analysis*. (2) Noise contour boundaries represent the equal levels of noise exposure and are measured in dBA CNEL from the center of the roadway. Noise contours were developed for the following traffic scenarios:

- Existing Without / With Project:
  - This scenario refers to the Existing present-day noise conditions, without and with the proposed Project.
- Existing and Ambient Conditions Without / With Project:
  - This scenario refers to the background noise conditions at future without and with the proposed Project plus ambient growth.
- Existing and Ambient and Cumulative Without / With Project:
  - This scenario refers to the existing and cumulative noise conditions without and with the proposed Project.

# 7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental 24-hour dBA CNEL 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 CNEL noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 7-1 through 7-6 present a summary of the exterior dBA CNEL traffic noise levels, without barrier attenuation, for the eight study area roadway segments analyzed from without Project to with Project conditions in each of the following timeframes: Existing, Existing plus Ambient, and Existing plus Ambient plus Cumulative. Appendix 7.1 includes a summary of the dBA CNEL traffic noise level contours for each of the traffic scenarios.



			Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	SR-74	n/o Theda St.	VLDR	78.5	236	509	1096	
2	SR-74	s/o Theda St.	VLDR/RR	79.0	255	549	1183	
3	SR-74	n/o Ethanac Rd.	RR/LI	79.4	251	541	1165	
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	76.1	280	603	1299	
5	SR-74	n/o River Rd.	VLDR/MU/CR	76.2	287	618	1331	
6	SR-74	s/o River Rd.	VLDR/MU/CR	76.2	283	610	1315	
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	76.7	306	660	1422	
8	Ethanac Rd.	w/o SR-74	VLDR/RR	51.4	RW	RW	RW	

#### TABLE 7-1: EXISTING WITHOUT PROJECT

<sup>1</sup> Sources: Mead Valley Area Plan, Land Use Plan, Figure 3.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.

ID	Road		Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
		Segment	Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	SR-74	n/o Theda St.	VLDR	78.5	237	511	1101	
2	SR-74	s/o Theda St.	VLDR/RR	79.0	256	552	1188	
3	SR-74	n/o Ethanac Rd.	RR/LI	79.5	252	544	1171	
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	76.1	281	606	1306	
5	SR-74	n/o River Rd.	VLDR/MU/CR	76.3	288	621	1337	
6	SR-74	s/o River Rd.	VLDR/MU/CR	76.2	285	613	1321	
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	76.7	308	663	1427	
8	Ethanac Rd.	w/o SR-74	VLDR/RR	57.0	RW	RW	RW	

#### TABLE 7-2: EXISTING WITH PROJECT

<sup>1</sup> Sources: Mead Valley Area Plan, Land Use Plan, Figure 3.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.



		oad Segment	Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID	коад		Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	SR-74	n/o Theda St.	VLDR	78.6	241	241 519		
2	SR-74	s/o Theda St.	VLDR/RR	79.1	260	560	1206	
3	SR-74	n/o Ethanac Rd.	RR/LI	79.6	256	552	1188	
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	76.2	286	615	1325	
5	SR-74	n/o River Rd.	VLDR/MU/CR	76.4	293	630	1358	
6	SR-74	s/o River Rd.	VLDR/MU/CR	76.3	289	623	1341	
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	76.8	312	673	1450	
8	Ethanac Rd.	w/o SR-74	VLDR/RR	51.5	RW	RW	RW	

TABLE 7-3: EXISTING PLUS AMBIENT WITHOUT PROJECT

<sup>1</sup> Sources: Mead Valley Area Plan, Land Use Plan, Figure 3.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.

			Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	SR-74	n/o Theda St.	VLDR	78.7	242	521	1123	
2	SR-74	s/o Theda St.	VLDR/RR	79.2	261	563	1212	
3	SR-74	n/o Ethanac Rd.	RR/LI	79.6	257	554	1194	
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	76.2	287	618	1331	
5	SR-74	n/o River Rd.	VLDR/MU/CR	76.4	294	633	1364	
6	SR-74	s/o River Rd.	VLDR/MU/CR	76.3	290	625	1347	
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	76.8	314	676	1456	
8	Ethanac Rd.	w/o SR-74	VLDR/RR	57.0	RW	RW	RW	

#### TABLE 7-4: EXISTING PLUS AMBIENT WITH PROJECT

<sup>1</sup> Sources: Mead Valley Area Plan, Land Use Plan, Figure 3.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.



	Road		Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
ID		Segment	Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	SR-74	n/o Theda St.	VLDR	78.9	249	537	1156	
2	SR-74	s/o Theda St.	VLDR/RR	79.3	269	579	1247	
3	SR-74	n/o Ethanac Rd.	RR/LI	79.8	265	571	1231	
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	76.4	295	636	1371	
5	SR-74	n/o River Rd.	VLDR/MU/CR	76.5	299	645	1390	
6	SR-74	s/o River Rd.	VLDR/MU/CR	76.4	295	635	1369	
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	76.9	316	682	1468	
8	Ethanac Rd.	w/o SR-74	VLDR/RR	51.5	RW	RW	RW	

TABLE 7-5: EXISTING PLUS AMBIENT PLUS CUMULATIVE WITHOUT PROJECT

<sup>1</sup> Sources: Mead Valley Area Plan, Land Use Plan, Figure 3.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.

TABLE 7-6: EXISTING PLUS AMBIENT PLUS CUMULATIVE WITH PROJECT
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ID	Road Segment Receiving Land Use <sup>1</sup>		Receiving	CNEL at Nearest	Distance to Contour from Centerline (Feet)			
U		Land Use <sup>1</sup>	Receiving Land Use (dBA) <sup>2</sup>	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL		
1	SR-74	n/o Theda St.	VLDR	78.9	250	539	1161	
2	SR-74	s/o Theda St.	VLDR/RR	79.4	270	582	1253	
3	SR-74	n/o Ethanac Rd.	RR/LI	79.8	266	574	1236	
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	76.5	297	639	1377	
5	SR-74	n/o River Rd.	VLDR/MU/CR	76.6	301	648	1396	
6	SR-74	s/o River Rd.	VLDR/MU/CR	76.5	296	638	1375	
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	76.9	318	684	1474	
8	Ethanac Rd.	w/o SR-74	VLDR/RR	57.0	RW	RW	RW	

<sup>1</sup> Sources: Mead Valley Area Plan, Land Use Plan, Figure 3.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use. "RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.



# 7.2 EXISTING CONDITIONS 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 *JS 63 MX Traffic Impact 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 future year cumulative conditions. Therefore, no mitigation measures are considered to reduce the Existing Plus Project traffic noise level increases. The Existing plus Ambient Plus Cumulative traffic noise conditions that include all cumulative projects are used to determine the significance of the Project off-site traffic noise level increases on the study area roadway segments.

Table 7-1 shows the Existing without Project conditions dBA CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 51.4 to 79.4 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions dBA CNEL noise levels will range from 57.0 to 79.5 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases will range from 0.0 to 5.6 dBA CNEL on the study area roadway segments.

### 7.3 EXISTING CONDITIONS PLUS AMBIENT NOISE LEVEL INCREASES

Table 7-3 presents the Existing Conditions plus Ambient without proposed Project conditions dBA CNEL noise levels ranging from 51.5 to 79.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows existing plus ambient with proposed project conditions ranging from 57.0 to 79.6 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases will range from 0.0 to 5.5 dBA CNEL on the study area roadway segments.

### 7.4 EXISTING CONDITIONS PLUS AMBIENT PLUS CUMULATIVE NOISE LEVEL INCREASES

Table 7-5 shows the Existing plus Ambient Plus Cumulative without Project conditions dBA CNEL noise levels ranging from 51.5 to 79.8 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the Existing plus Ambient plus Cumulative with Project conditions dBA CNEL noise levels ranging from 57.0 to 79.8 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from 0.0 to 5.5 dBA CNEL on the study area roadway segments. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

While the noise sensitive residential land uses located on Ethanac Road west of SR-74 will experience an off-site Project related traffic noise level increase of 5.5 dBA CNEL, the exterior noise levels of 57.0 dBA CNEL at the boundary of the right-of-way will remain well below the County of Riverside exterior transportation related noise level standards of 65 dBA CNEL.



ID	ID Road	Segment	Segment		Segment			EL at Receiv nd Use (dB	-	Noise Level Increase Significance Criteria <sup>2</sup>		Exterior Noise Level (dBA CNEL) <sup>3</sup>	
			Land Use <sup>1</sup>	Land Use?	No Project	With Project	Project Increase	Criteria	Exceeded?	Standard	Exceeded?		
1	SR-74	n/o Theda St.	VLDR	Yes	78.5	78.5	0.0	1.5	No	65	Yes		
2	SR-74	s/o Theda St.	VLDR/RR	Yes	79.0	79.0	0.0	1.5	No	65	Yes		
3	SR-74	n/o Ethanac Rd.	RR/LI	Yes	79.4	79.5	0.1	1.5	No	65	Yes		
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	Yes	76.1	76.1	0.0	1.5	No	65	Yes		
5	SR-74	n/o River Rd.	VLDR/MU/CR	Yes	76.2	76.3	0.1	1.5	No	65	Yes		
6	SR-74	s/o River Rd.	VLDR/MU/CR	Yes	76.2	76.2	0.0	1.5	No	65	Yes		
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	Yes	76.7	76.7	0.0	1.5	No	65	Yes		
8	Ethanac Rd.	w/o SR-74	VLDR/RR	Yes	51.4	57.0	5.6	5.0	Yes	65	No		

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

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

<sup>2</sup> Does the Project create an off-site transportation related noise level increase exceeding the significance criteria (Table 4-1)?

<sup>3</sup> Does the Project exceed the transportation related exterior noise level standards for the receiving land use?

"RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.



ID	Road	Segment	Receiving	Noise- Sensitive	CNEL at Receiving Land Use (dBA) <sup>1</sup>			Noise Level Increase Significance Criteria <sup>2</sup>		Exterior Noise Level (dBA CNEL) <sup>3</sup>	
		Land Use <sup>1</sup>	Land Use?	No Project	With Project	Project Increase	Criteria	Exceeded?	Standard	Exceeded?	
1	SR-74	n/o Theda St.	VLDR	Yes	78.6	78.7	0.1	1.5	No	65	Yes
2	SR-74	s/o Theda St.	VLDR/RR	Yes	79.1	79.2	0.1	1.5	No	65	Yes
3	SR-74	n/o Ethanac Rd.	RR/LI	Yes	79.6	79.6	0.0	1.5	No	65	Yes
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	Yes	76.2	76.2	0.0	1.5	No	65	Yes
5	SR-74	n/o River Rd.	VLDR/MU/CR	Yes	76.4	76.4	0.0	1.5	No	65	Yes
6	SR-74	s/o River Rd.	VLDR/MU/CR	Yes	76.3	76.3	0.0	1.5	No	65	Yes
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	Yes	76.8	76.8	0.0	1.5	No	65	Yes
8	Ethanac Rd.	w/o SR-74	VLDR/RR	Yes	51.5	57.0	5.5	5.0	Yes	65	No

#### TABLE 7-8: EXISTING PLUS AMBIENT CONDITIONS TRAFFIC NOISE LEVEL INCREASES

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

<sup>2</sup> Does the Project create an off-site transportation related noise level increase exceeding the significance criteria (Table 4-1)?

<sup>3</sup> Does the Project exceed the transportation related exterior noise level standards for the receiving land use?

"RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.



ID	Road	Segment	Receiving	Noise- Sensitive Land Use?	CNEL at Receiving Land Use (dBA) <sup>1</sup>			Noise Level Increase Significance Criteria <sup>2</sup>		Exterior Noise Level (dBA CNEL) <sup>3</sup>		Significant
			Land Use <sup>1</sup>		No Project	With Project	Project Increase	Criteria	Exceeded?	Standard	Exceeded?	Impact?
1	SR-74	n/o Theda St.	VLDR	Yes	78.9	78.9	0.0	1.5	No	65	Yes	No
2	SR-74	s/o Theda St.	VLDR/RR	Yes	79.3	79.4	0.1	1.5	No	65	Yes	No
3	SR-74	n/o Ethanac Rd.	RR/LI	Yes	79.8	79.8	0.0	1.5	No	65	Yes	No
4	SR-74	s/o Ethanac Rd.	VLDR/MU/CR	Yes	76.4	76.5	0.1	1.5	No	65	Yes	No
5	SR-74	n/o River Rd.	VLDR/MU/CR	Yes	76.5	76.6	0.1	1.5	No	65	Yes	No
6	SR-74	s/o River Rd.	VLDR/MU/CR	Yes	76.4	76.5	0.1	1.5	No	65	Yes	No
7	SR-74	s/o Meadowbrook Av.	MU/VLDR	Yes	76.9	76.9	0.0	1.5	No	65	Yes	No
8	Ethanac Rd.	w/o SR-74	VLDR/RR	Yes	51.5	57.0	5.5	5.0	Yes	65	No	No

TABLE 7-9: EXISTING PLUS AMBIENT PLUS CUMULATIVE TRAFFIC NOISE LEVEL INCREASES

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

<sup>2</sup> Does the Project create an off-site transportation related noise level increase exceeding the significance criteria (Table 4-1)?

<sup>3</sup> Does the Project exceed the transportation related exterior noise level standards for the receiving land use?

"RW" = Location of the respective noise contour falls within the right-of-way of the road. "RR" = Rural Residential; "VLDR" = Very Low Density Residential; "CR" = Commercial Retail; "LI" = Light Industrial; "MU" = Mixed Use.



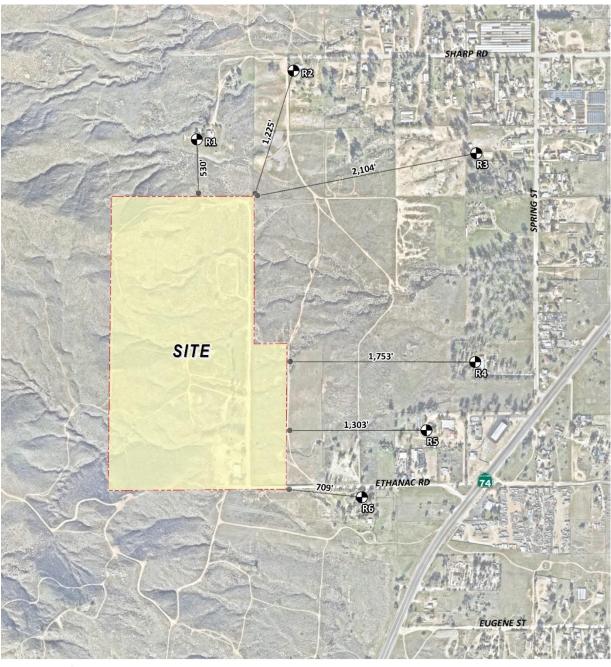
# 8 SENSITIVE RECEIVER LOCATIONS

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

Receiver locations are located in outdoor living areas (e.g., backyards) at 10 feet from any existing or proposed barriers or at the building façade, whichever is closer to the Project site, based on FHWA guidance, and consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Sensitive receiver locations in the Project study area include residential uses as described below. 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: Located approximately 530 feet north of the Project site, R1 represents existing single family-residential home. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing residential home located northeast of the Project site at roughly 1,225 feet, on the west side of Spring Street just south of Sharp Road. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R3: Location R3 represents a noise sensitive use west of Spring St approximately 2,104 feet from the Project site, at 25401 Spring Street. A 24-hour noise measurement near this location, L2, is used to describe the existing ambient noise environment.
- R4: Location R4 represents the existing residential homes on the northeast side of Ethanac Road approximately 1,753 feet from the Project site. A 24-hour noise measurement near this location, L3, is used to describe the existing ambient noise environment.
- R5: Location R5 represents the existing residential home on the north side of Ethanac Road at approximately 1,303 feet from the Project site. A 24-hour noise measurement near this location, L3, is used to describe the existing ambient noise environment.
- R6: Location R6 represents the existing residential home on the south side of Ethanac Road at approximately 709 feet from the Project site. A 24-hour noise measurement near this location, L3, is used to describe the existing ambient noise environment.





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



**LEGEND:** Receiver Locations

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

# 9 OPERATIONAL NOISE ANLAYSIS

This section analyzes the potential stationary-source hourly average  $L_{eq}$  noise level impacts at the nearby receiver locations, identified in Section 8, resulting from the operation of the proposed JS 63 MX Project. Exhibit 9-A identifies the representative receiver locations and noise source locations used to assess the operational noise levels.

# 9.1 OPERATIONAL NOISE SOURCES

Based on a review of the existing Milestone MX facility in the Riverside area on 12685 Holly Street, the primary operational noise sources are expected to consist of various motocross and off-road all-terrain vehicle activity. This noise analysis is intended to describe the hourly  $L_{eq}$  noise level impacts associated with the typical weekday operational activities at the Project site.

# 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 all the motocross tracks operating continuously throughout the Project site. These sources of noise activity will likely vary by location throughout the day. Appendix 9.1 provides reference measurement photos for each noise source.

## 9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using Piccolo Type 2 integrating sound level meters and dataloggers. All sound level meters were 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. (19)



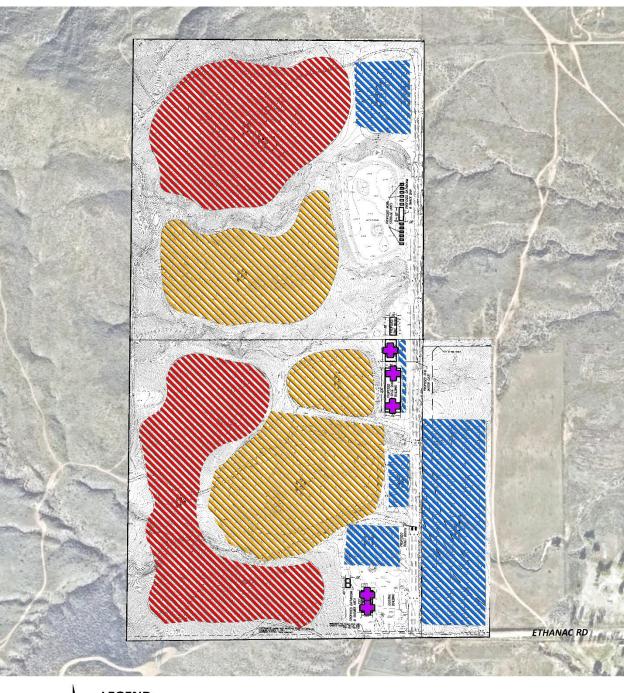
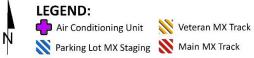
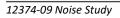


EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS







Naisa Sauraa	Duration	Ref.	istance Source		Reference Noise Level (dBA L <sub>eq</sub> )		
Noise Source	(hh:mm:ss)	(Feet) <sup>3</sup>	-	@ Ref. Dist.	@ 50 Feet	Level (dBA) <sup>4</sup>	
Main MX Track <sup>1</sup>	01:14:00	50'	5'	70.5	70.5	117.8	
Veteran MX Track <sup>1</sup>	01:13:00	15'	5'	76.7	66.2	113.5	
Parking Lot MX Staging <sup>1</sup>	01:06:00	15'	5'	70.5	60.0	105.1	
Air Conditioning Units <sup>2</sup>	96:00:00	5'	15'	77.2	57.2	88.9	

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

<sup>1</sup> As measured by Urban Crossroads, Inc. at the existing Milestone MX park located at 12685 Holly Street, Riverside.

<sup>2</sup> As measured by Urban Crossroads, Inc. at the Santee Walmart located at 170 Town Center Parkway.

<sup>3</sup> Distance from adjacent noise source to noise level measurement location.

<sup>4</sup> 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.

#### 9.2.1 MAIN MX TRACK

According to Milestone MX, the main mx track is targeted towards intermediate and professional riders. To describe the noise levels associated with the main mx motocross activities, short-term reference noise level measurements were collected during peak weekday activity on Friday, August 16<sup>th</sup>, 2019, by Urban Crossroads, Inc. at the existing Milestone MX site. The short-term reference noise levels were collected in the late afternoon (between the hours of 3:00 p.m. to 5:00 p.m.) at the main mx track located at 12685 Holly Street in the City of Riverside.

At 50 feet from the center of motocross noise source activity, the main mx track generated a reference noise level of 70.5 dBA  $L_{eq}$ . The main mx track noise level measurement was collected over a period of one hour and fourteen minutes of continuous intermediate and professional rider motocross activity. In addition, due to the proximity of the main mx track to the veteran mx, the main mx track reference noise level measurement may include some additional background noise activity from veteran mx track.

### 9.2.2 VETERAN MX TRACK

The veteran mx track is targeted towards beginner riders. To describe the noise levels associated with typical veteran mx track activities, short-term reference noise level measurements were collected during peak weekday activity on Friday, August 16<sup>th</sup>, 2019, by Urban Crossroads, Inc. at the existing Milestone MX site. The short-term reference noise levels were collected in the late afternoon (between the hours of 3:00 p.m. to 5:00 p.m.) near the veteran mx track located at 12685 Holly Street in the City of Riverside. At 50 feet the center of the motocross noise source activity, the veteran mx track generated a reference noise level of 66.2 dBA Leq. The veteran track noise level measurement was collected over a period of one hour and thirteen minutes of continuous motocross activity.



## 9.2.3 PARKING LOT

To determine the noise levels associated with parking lot vehicle movements and motocross staging activities, Urban Crossroads collected reference noise level measurements for a period of one hour and six minutes on Friday, August  $16^{th}$ , 2019 in the parking lot of the existing Milestone MX site. The reference noise level at 50 feet from parking lot vehicle movements was measured at 60.0 dBA L<sub>eq</sub>. The parking lot noise levels are mainly due to vehicles, vans and trucks maneuvering in the parking lot, motocross bike preparation and staging before and after riding on the Milestone MX tracks.

## 9.2.4 AIR CONDITIONING UNITS

To assess the noise levels created by the roof-top air conditioning units within the planned commercial retail land uses within the Project site, reference noise levels measurements were taken at the Santee Walmart. Located at 170 Town Center Parkway in the City of Santee, the noise level measurements describe a single mechanical roof-top air conditioning unit on the roof of the existing Walmart store. The reference noise level represents a Lennox SCA120 series 10-ton model packaged air conditioning unit. At 5 feet from the roof-top air conditioning unit, the exterior noise levels were measured at 77.2 dBA  $L_{eq}$ . At the uniform reference distance of 50 feet, the reference noise levels are 57.2 dBA  $L_{eq}$ . Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for and average 39 minutes per hour during the daytime hours, and 28 minutes per hour during the nighttime hours. These operating conditions reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings. The noise attenuation provided by the existing parapet wall is not reflected in this reference noise level measurement.

# 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 the noise level of multiple types of noise sources and calculates the noise levels at any location using the spatially accurate Project site plan and includes the effects of topography, buildings, and multiple barriers in its calculations using the latest standards to predict outdoor noise impacts. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section. Using the spatially accurate Project site plan and flown aerial imagery from Nearmap, a CadnaA noise prediction model of the Project study area was developed. The noise model provides a three-dimensional representation of the Project study area using the following key data inputs:

- Ground absorption;
- Multiple reflections at buildings and barriers;
- Reference noise level sources by type (area, point, etc.) and noise source height;
- Multiple noise receiver locations and heights;
- Topography and earthen berms;



• Barrier and building heights.

Using the ISO 9613 protocol, the CadnaA noise prediction model will calculate the distance from each noise source to the noise receiver locations, the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level calculations at each receiver location and the partial noise level contributions by noise source. The reference sound power level (PWL) for the highest noise source expected at the Project site was input into the CadnaA noise prediction model.

While sound pressure levels (e.g. L<sub>eq</sub>) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (PWL) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish as a result 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. Appendix 9.2 includes the detailed calculations for 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 continuous motocross activity, 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 expected 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 48.0 to 54.7 dBA L<sub>eq</sub>.

Noise Source <sup>1,2</sup>	Operational Noise Levels by Receiver Location (dBA Leq)							
	R1	R2	R3	R4	R5	R6		
Main MX Track	53.6	48.4	46.0	47.2	49.2	49.9		
Veteran MX Track	46.2	44.0	42.7	45.1	47.8	49.5		
Parking Lot MX Staging	43.7	38.1	36.5	40.2	42.3	44.1		
Air Conditioning Units	27.2	22.6	22.9	27.0	29.6	31.5		
Total (All Noise Sources)	54.7	50.0	48.0	49.8	52.1	53.3		

### TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

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

<sup>2</sup> CadnaA noise model calculations are included in Appendix 9.2.



# 9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against the 65 dBA  $L_{eq}$  stationary-source daytime exterior noise limit outlined in Policy N 4.1 of the Noise Element. Table 9-3 shows that the operational noise levels associated with JS 63 MX Project will satisfy the County of Riverside 65 dBA  $L_{eq}$  daytime exterior noise level standards at all nearby receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations provided that all Project activities will be limited to the daytime hours between 7:00 a.m. and 10:00 p.m.

Receiver Location <sup>1</sup>	Project Operational Noise Levels (dBA Leq) <sup>2</sup>	Noise Level Standards (dBA Leq) <sup>3</sup>	Standards Exceeded? <sup>4</sup>	
R1	54.7	65	No	
R2	50.0	65	No	
R3	48.0	65	No	
R4	49.8	65	No	
R5	52.1	65	No	
R6	53.3	65	No	

 TABLE 9-3: PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

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

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

<sup>3</sup> County of Riverside exterior noise level standards for residential land use, as shown on Table 4-1.

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

# 9.6 **PROJECT OPERATIONAL NOISE LEVEL CONTRIBUTIONS**

To describe the Project operational noise level contributions, 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. (3) 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 describe the Project noise level contributions to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime ambient conditions are presented on Table 9-4. As indicated on Table 9-4, the Project will generate an unmitigated daytime operational noise level increases ranging from 1.6 to 5.0 dBA L<sub>eq</sub> at the nearby receiver locations. Project-related operational noise level contributions will satisfy the operational noise level increase significance



criteria presented on Table 4-1, and, therefore, the noise level increases at the sensitive receiver locations will be *less than significant*.

Receiver Location <sup>1</sup>	Total Project Operational Noise Level <sup>2</sup>	Measurement Location <sup>3</sup>	Reference Ambient Noise Levels <sup>4</sup>	Combined Project and Ambient <sup>5</sup>	Project Increase <sup>6</sup>	Increase Criteria <sup>7</sup>	Increase Criteria Exceeded? <sup>7</sup>
R1	54.7	L1	53.5	57.1	3.6	5.0	No
R2	50.0	L1	53.5	55.1	1.6	5.0	No
R3	48.0	L2	49.0	51.5	2.5	5.0	No
R4	49.8	L3	50.0	52.9	2.9	5.0	No
R5	52.1	L3	50.0	54.2	4.2	5.0	No
R6	53.3	L3	50.0	55.0	5.0	5.0	No

TABLE 9-4: DAYTIME PROJECT OPERATIONAL NOISE LEVEL CONTRIBUTIONS

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

<sup>2</sup> Total Project operational noise levels as shown on Table 10-6.

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

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

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

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

<sup>7</sup> Significance Criteria as defined in Section 4.

## 9.7 MSHCP NOISE LEVELS

The Multiple Species Habitat Conservation Plan (MSHCP) adopted by the Western Riverside County Regional Conservation Authority (20) requires that noise generating land uses affecting the MSHCP Conservation Area shall incorporate setbacks, berms or walls to minimize the effects of noise on MSHCP Conservation Area resources pursuant to applicable rules, regulations, and guidelines related to land use noise standards. For planning purposes, wildlife within the MSHCP Conservation Area should not be subject to noise that would exceed residential noise standards. Since the proposed JS 63 MX development will include noise generating motocross activities, operation noise levels have been calculated at the Project boundaries in order to estimate the Project related noise levels within the adjacent MSHCP conservation areas.

To minimize the effects of noise on the nearby MSHCP Conservation Areas, this analysis relies on the 65 dBA  $L_{eq}$  exterior noise level limit identified by Policy N 4.1 of the General Plan. As shown on Exhibit 9-B, five MSHCP receiver locations are used to calculate the Project operational noise levels at the Project site boundaries. The five MSHCP receivers were placed at the Project site boundaries to estimate the highest Project motocross noise levels within the nearby MSHCP conservation areas. This approach reflects the setback buffers shown on the Project site plan that places the MX Tracks at distances ranging from 50 to 150 feet. Appendix 9.3 includes the detailed CadnaA noise prediction model MSHCP calculations for the Project operational noise levels presented in this section.



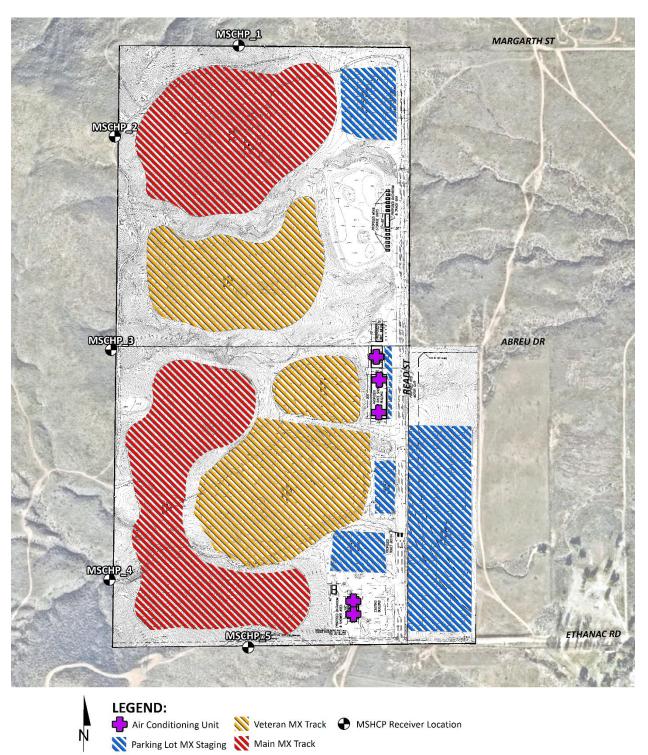


EXHIBIT 9-B: MSHCP OPERATIONAL NOISE SOURCE AND RECEIVER LOCATIONS



Receiver Location <sup>1</sup>	Project Operational Noise Levels (dBA Leq) <sup>2</sup>	Noise Level Standards (dBA Leq) <sup>3</sup>	Standards Exceeded? <sup>4</sup>	
R1	59.7	65	No	
R2	63.0	65	No	
R3	60.1	65	No	
R4	61.2	65	No	
R5	62.2	65	No	

TABLE 9-5: MSCHP OPERATIONAL NOISE LEVEL COMPLIANCE

<sup>1</sup> See Exhibit 9-B for the MSHCP noise receiver locations at the Project site boundaries.

<sup>2</sup> Proposed Project operational (motocross) noise levels are included in Appendix 9.3.

<sup>3</sup> Exterior noise level standards for residential land use (Noise Element Policy N 4.1).

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

Table 9-5 presents a summary of the estimated MSHCP noise levels at each of the five noise receiver locations. As shown on Table 9-5, the Project-related noise levels are expected to range from 59.7 to 63.0 dBA  $L_{eq}$ . The analysis shows that the Project-related operational motocross noise levels will satisfy the 65 dBA  $L_{eq}$  exterior noise level threshold identified for the proposed MSHCP Conservation Areas. Accordingly, the Project's noise impacts to the adjacent MSHCP Conservation Area would be *less than significant*.



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# **10 REFERENCES**

- 1. State of California. California Environmental Quality Act, Appendix G. 2018.
- 2. Urban Crossroads, Inc. JS 63 MX Traffic Impact Analysis. 2019.
- 3. California Department of Transportation Environmental Program. *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
- 4. Environmental Protection Agency Office of Noise Abatement and Control. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974. EPA/ONAC 550/9/74-004.
- 5. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch. *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. December 2011.
- 6. U.S. Department of Transportation, Federal Highway Administration. *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
- 7. U.S. Environmental Protection Agency Office of Noise Abatement and Control. *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
- 8. Office of Planning and Research. State of California General Plan Guidelines. October 2017.
- 9. County of Riverside. General Plan Noise Element. December 2015.
- 10. —. Ordinance No. 847 Section 4 Table 1.
- 11. California Court of Appeal. *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.
- 12. Federal Interagency Committee on Noise. Federal Agency Review of Selected Airport Noise Analysis Issues. August 1992.
- 13. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
- 14. U.S. Department of Transportation, Federal Transit Administration. *Transit Noise and Vibration Impact Assessment.* May 2006. FTA-VA-90-1003-06.
- 15. U.S. Department of Transportation, Federal Highway Administration. FHWA Highway Traffic Noise Prediction Model. December 1978. FHWA-RD-77-108.
- 16. California Department of Transportation Environmental Program, Office of Environmental Engineering. Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction. September 1995. TAN 95-03.
- 17. **County of Riverside, Office of Industrial Hygiene.** *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures.* April 2015.
- 18. County of Riverside. General Plan Noise Element. December 2015.
- 19. American National Standards Institute (ANSI). Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.
- 20. Western Riverside County Regional Conservation Authority. Western Riverside County Multiple Species Habitat Conservation Plan. August 2007.





# **11 CERTIFICATION**

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed JS 63 MX Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5979.

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



### EDUCATION

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

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

## **PROFESSIONAL REGISTRATIONS**

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

## **PROFESSIONAL AFFILIATIONS**

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

## **PROFESSIONAL CERTIFICATIONS**

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



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APPENDIX 3.1:

COUNTY OF RIVERSIDE NOISE ORDINANCE NO. 847



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#### ORDINANCE NO. 847 (AS AMENDED THROUGH 847.1) AN ORDINANCE OF THE COUNTY OF RIVERSIDE AMENDING ORDINANCE NO. 847 REGULATING NOISE

The Board of Supervisors of the County of Riverside Ordains as Follows:

Section 1. INTENT. At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the Board of Supervisors hereby declares that noise shall be regulated in the manner described herein. This ordinance is intended to establish countywide standards regulating noise. This ordinance is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are hereby established.

Section 2. EXEMPTIONS. Sound emanating from the following sources is exempt from the provisions of this ordinance:

- a. Facilities owned or operated by or for a governmental agency.
- b. Capital improvement projects of a governmental agency.
- c. The maintenance or repair of public properties.
- d. Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile.
- e. Public or private schools and school-sponsored activities
- f. Agricultural operations on land designated Agriculture in the Riverside County General Plan, or land zoned A-1 (Light Agriculture), A-P (Light Agriculture With Poultry), A-2 (Heavy Agriculture), A-D (Agriculture-Dairy) or C/V (Citrus/Vineyard), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile.
- g. Wind Energy Conversion Systems (WECS), provided such systems comply with the WECS noise provisions of Riverside County Ordinance No. 348.
- h. Private construction projects located one-quarter (1/4) of a mile or more from an inhabited dwelling.
- i. Private construction projects located within one-quarter (1/4) of a mile from an inhabited dwelling, provided that:
  - 1. Construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September; and
  - 2. Construction does not occur between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May.

- j. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 7 a.m. and 8 p.m.
- k. Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems
- I. Heating and air conditioning equipment.
- m. Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety, and welfare.
- n. The discharge of firearms consistent with all state laws.

<u>Section 3</u>. DEFINITIONS. As used in this ordinance, the following terms shall have the following meanings:

- a. <u>Audio Equipment</u>. A television, stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.
- b. <u>Decibel (dB)</u>. A unit for measuring the relative amplitude of a sound equal approximately to the smallest difference normally detectable by the human ear, the range of which includes approximately one hundred thirty (130) decibels on a scale beginning with zero decibels for the faintest detectable sound. Decibels are measured with a sound level meter using different methodologies as defined below:
  - 1. A-weighting (dBA) means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds.
  - 2. Maximum Sound level (L<sub>max</sub>) means the maximum sound level measured on a sound level meter.
- c. <u>Governmental Agency</u>. The United States, the State of California, Riverside County, any city within Riverside County, any special district within Riverside County or any combination of these agencies.
- d. <u>Land Use Permit</u>. A discretionary permit issued by Riverside County pursuant to Riverside County Ordinance No. 348.
- e. <u>Motor Vehicle</u>. A vehicle that is self-propelled.
- f. <u>Motor Vehicle Sound System</u>. A stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.
- g. <u>Noise</u>. Any loud, discordant or disagreeable sound.
- h. <u>Occupied Property</u>. Property upon which is located a residence, business or industrial or manufacturing use.
- i. <u>Off-Highway Vehicle</u>. A motor vehicle designed to travel over any terrain.
- j. <u>Public Property</u>. Property owned by a governmental agency or held open to the public, including, but not limited to, parks, streets, sidewalks, and alleys.

- k. <u>Public or Private School</u>. An institution conducting academic instruction at the preschool, elementary school, junior high school, high school, or college level.
- I. <u>Sensitive Receptor</u>. A land use that is identified as sensitive to noise in the Noise Element of the Riverside County General Plan, including, but not limited to, residences, schools, hospitals, churches, rest homes, cemeteries or public libraries.
- m. <u>Sound Level Meter</u>. An instrument meeting the standards of the American National Standards Institute for Type 1 or Type 2 sound level meters or an instrument that provides equivalent data.
- n. <u>Sound Amplifying Equipment</u>. A loudspeaker, microphone, megaphone or other similar device.

<u>Section 4.</u> GENERAL SOUND LEVEL STANDARDS. No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1.

	S	TABLE 1 OUND LEVEL STANDARDS ( Db	L <sub>max</sub> )			
GENERAL	GENERAL PLAN	GENERAL PLAN LAND	-max /	MAXIMUM DECIBEL LEVEL		
PLAN FOUNDATION COMPONENT	LAND USE DESIGNATION	DESIGNATION NAME	DENSITY	7am- 10pm	10pm- 7am	
	EDR	Estate Density Residential	2 AC	55	45	
	VLDR	Very Low density Residential	1 AC	55	45	
	LDR	Low Density Residential	1/2 AC	55	45	
	MDR	Medium Density	25	55	45	
	MHDR	Residential Medium High Density Residential	58	55	45	
	HDR	High Density Residential	814	55	45	
	VHDR	Very High Density	14-20	55	45	
	H'TDR	Highest Density	20+	55	45	
	CR	Retail Commercial	20+	65	55	
Community						
Development	<u> </u>	Office Commercial		65	55	
	СТ	Tourist Commercial		65	55	
	CC	Community Center Light Industrial		65	55	
	LI			75	55	
	HI	Heavy Industrial		75	75	
	BP	Business Park		65	45	
	PF	Public Facility		65	45	
	SP	Specific Plan-Residential		55	45	
		Specific Plan-		65	55	
		Specific Plan-Light		75	55	
		Specific Plan-Heavy		75	75	
Rural	EDR	Estate Density	2 ac	55	45	
Community	VLDR	Very Low Density	1 ac	55	45	
	LDR	Low Density Residential	1/2 ac	55	45	
Rural	RR	Rural Residential	5 ac	45	45	
	RM	Rural Mountainous	10 ac	45	45	
		Rural Desert				
Agriculture	RD	Agriculture	10 ac	45	45	
-	AG	Conservation	10 AC	45	45	
Open Space	С			45	45	
	СН	Conservation Habitat Recreation		45	45	
	REC			45	45	
	RUR	Rural	20 AC	45	45	
	W	Watershed		45	45	
	MR	Mineral Resources		75	45	

Section 5. 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 8. of this ordinance. Sound level measurements shall be made with a sound level meter. Immediately before a measurement is made, the sound level meter shall be calibrated utilizing an acoustical calibrator meeting the standards of the American National Standards Institute. Following a sound level measurement, the calibration of the sound level meter shall be re-verified. Sound level meters and calibration equipment shall be certified annually.

Section 6. SPECIAL SOUND SOURCES STANDARDS. The general sound level standards set forth in Section 4. of this ordinance apply to sound emanating from all sources, including the following special sound sources, and the person creating, or allowing the creation of, the sound is subject to the requirements of that section. The following special sound sources are also subject to the following additional standards, the failure to comply with which constitute separate violations of this ordinance.

- a. Motor Vehicles.
  - 1. 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.
    - 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 that 101 dBA if the vehicle was manufactured before January 1, 1986. For purposes of this subsection, emitted noise shall be measured a distance of twenty (20) inches from the vehicle tailpipe using test procedures established by the Society of Automotive Engineers under Standard J-1287.
    - 2. Sound Systems. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, between the hours of 10:00 p.m. and 8:00 a.m., such that the sound system is audible to the human ear inside any inhabited dwelling. No person shall operate a motor vehicle sound system, whether affixed to the vehicle or not, at any other time such that the sound system is audible to the human ear at a distance greater than one hundred (100) feet from the vehicle.
- b. Power Tools and Equipment. No person shall operate any power tools or equipment between the hours of 10:00 p.m. and 8:00 a.m. such that the power tools or equipment are audible to the human ear inside an inhabited dwelling other than a dwelling in which the power tools or equipment may be located. No person shall operate any power tools or equipment at any other time such that the power tools

or equipment are audible to the human ear at a distance greater than one hundred (100) feet from the power tools or equipment.

- c. Audio Equipment. No person shall operate any audio equipment, whether portable or not, between the hours of 10:00 p.m. and 8:00 a.m. such that the equipment is audible to the human ear inside an inhabited dwelling other than a dwelling in which the equipment may be located. No person shall operate any audio equipment, whether portable or not, at any other time such that the equipment is audible to the human ear at a distance greater than one hundred (100) feet from the equipment.
- d. Sound Amplifying Equipment and Live Music. No person shall install, use or operate 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.
  - 1. Sound amplifying equipment or live music is prohibited between the hours of 10:00 p.m. and 8:00 a.m.
  - 2. Sound emanating from sound amplifying equipment or live music at any other time shall not be audible to the human ear at a distance greater than two hundred (200) feet from the equipment or music.

Section 7. EXCEPTIONS. Exceptions may be requested from the standards set forth in Sections 4. or 6. of this ordinance and may be characterized as construction-related, single event or continuous events exceptions.

- a. Application and Processing.
  - 1. Construction-Related Exceptions. An application for a construction-related exception shall be made to and considered by the Director of Building and Safety on forms provided by the Building and Safety Department and shall be accompanied by the appropriate filing fee. No public hearing is required.
  - 2. Single Event Exceptions. An application for a single event exception shall be made to and considered by the Planning Director on forms provided by the Planning Department and shall be accompanied by the appropriate filing fee. No public hearing is required.
  - 3. Continuous Events Exceptions. An application for a continuous events exception shall be made to the Planning Director on forms provided by the Planning Department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous events exception, the Planning Director shall set the matter for public hearing before the Planning Commission, notice of which shall be given as provided in Section 18.26.c. of Riverside County Ordinance No. 348. Notwithstanding the above, an application for a

continuous events exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.

- b. Requirements for Approval. The appropriate decision making body or officer shall not approve an exception application unless the applicant demonstrates that the activities described in the application would not be detrimental to the health, safety or general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decision making body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.
- The Director of Building and Safety's decision on an C. Appeals. application for a construction-related exception is considered final. The Planning Director's decision on an application for a single event exception is considered final. After making a decision on an application for a continuous events exception, the appropriate decision making body or officer shall mail notice of the decision to the applicant. Within ten (10) calendar days after the mailing of such notice, the applicant or an interested person may appeal the decision to the Board of Supervisors. Upon receipt of an appeal and payment of the appropriate appeal fee, the Clerk of the Board shall set the matter for hearing not less than five (5) days nor more than thirty (30) days thereafter and shall give written notice of the hearing in the same manner as notice of the hearing was given by the appropriate hearing officer or body. The Board of Supervisors shall render its decision within thirty (30) days after the appeal hearing is closed.
- d. Effect of a Pending Continuous Events Exception Application. For a period of one hundred and eighty (180) days from the effective date of this ordinance, no person creating any sound prohibited by this ordinance shall be considered in violation of this ordinance if the sound is related to a use that is operating pursuant to an approved land use permit, if an application for a continuous events exception has been filed to sanction the sound and if a decision on the application is pending.

Section 8. ENFORCEMENT. The Riverside County Sheriff and Code Enforcement shall have the primary responsibility for enforcing this ordinance; provided, however, the Sheriff and Code Enforcement may be assisted by the Public Health Department. Violations shall be prosecuted as described in Section 10. of this ordinance, but nothing in this ordinance shall prevent the Sheriff, Code Enforcement or the Department of Public Health from engaging in efforts to obtain voluntary compliance by means of warnings, notices, or educational programs. Section 9. DUTY TO COOPERATE. No person shall refuse to cooperate with, or obstruct, the enforcement officials identified in Section 8. of this ordinance when they are engaged in the process of enforcing the provisions of this ordinance. 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 ordinance.

Section 10. VIOLATIONS AND PENALTIES. Any person who violates any provision of this ordinance once or twice within a one hundred and eighty (180) day period shall be guilty of an infraction. Any person who violates any provision of this ordinance more than twice within a one hundred and eighty (180) day period shall be guilty of a misdemeanor. Each day a violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. Penalties shall not exceed the following amounts.

- a. For the first violation within a one hundred and eighty (180) day period the minimum mandatory fine shall be five hundred dollars (\$500).
- b. For the second violation within a one hundred and eighty (180) day period the minimum mandatory fine shall be seven hundred and fifty dollars (\$750).
- For any further violations within a one hundred and eighty (180) day period the minimum mandatory fine shall be one thousand dollars (\$1,000) or imprisonment in the County jail for a period not exceeding six (6) months, or both.

<u>Section 11</u>. SEVERABILITY. If any provision of this ordinance, or the application thereof to any person or circumstance, is held invalid, such invalidity shall not affect the remainder of the ordinance or the application of such provision(s) to other persons or circumstances.

Section 12. SAVINGS CLAUSE. The adoption of this ordinance shall not in any manner affect the prosecution of ordinance violations, which violations were committed prior to the effective date of this ordinance, nor be construed as a waiver of any permit, license, penalty or penal provisions applicable to such violations. The provisions of this ordinance, insofar as they are substantially the same as ordinance provisions previously adopted by Riverside County relating to the same subject matter, shall be construed as restatements and continuations, and not as new enactments.

Section 13. EFFECTIVE DATE. This ordinance shall take effect 30 days after its adoption.

Adopted: 847 Item 3.19 of 04/04/2006 (Eff: 05/04/2006) Amended: 847.1 Item 3.4 of 06/19/2007 (Eff: 07/19/2007) APPENDIX 5.1:

**STUDY AREA PHOTOS** 



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# JN: 12374 Study Area Photos



33, 45' 11.300000", 117, 17' 14.450000"



L1\_E 33, 45' 11.260000", 117, 17' 14.530000"



33, 45' 11.220000", 117, 17' 14.390000"



L1\_S 33, 45' 11.250000", 117, 17' 14.580000"



L1\_W 33, 45' 11.430000", 117, 17' 14.580000"



L2 33, 45' 5.510000", 117, 16' 47.280000"

## JN: 12374 Study Area Photos



L2\_E 33, 45' 4.080000", 117, 16' 53.960000"



L2\_N 33, 45' 4.060000", 117, 16' 53.850000"



L2\_S



L3\_E 33, 44' 32.990000", 117, 17' 6.430000"



L3\_S 33, 44' 33.330000", 117, 17' 6.340000"

# JN: 12374 Study Area Photos



L3\_W ,



L4 33, 44' 32.970000", 117, 17' 21.560000"



L4\_N 33, 44' 33.220000", 117, 17' 21.420000"



L4\_S 33, 44' 33.220000", 117, 17' 21.260000"

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APPENDIX 5.2:

**NOISE LEVEL MEASUREMENT WORKSHEETS** 



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Max       58.9       77.5       43.9       68.0       67.0       65.0       63.0       59.0       53.0       44.0       44.0       44.0         Energy Average       54.4       Average:       62.1       60.3       57.9       56.2       51.8       47.5       41.9       41.4       41.3       51.8         Min       41.5       59.2       41.5       46.0       45.0       44.0       42.0       41.0       41.0       41.0       41.0       51.8		-	ly 30, 2019 MX Motorcyc	le Park	County	Location of Riversid	L1 - Located	l north of the	evel Measu e Project site e and vacant	on Sharp Ro		Meter:	Piccolo I			JN: Analyst:	12374 P. Mara
Night         3         4         5         6         7         8         9         10         11         12         13         14         15         15         17         18         19         20           Tinfframe         How         Law         Law </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Hourly L <sub>eq</sub> (</th> <th>dBA Readings</th> <th>(unadjusted)</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								Hourly L <sub>eq</sub> (	dBA Readings	(unadjusted)							
Part 1         Part 1<																	
35.0         0         1         2         3         4         5         6         7         8         9         10         11         12         13         14         15         16         17         18         19         20           Timeframe         Hour         Law         Law         Law         L2%         L5%         L9%         L9%         Law         Law <thlaw< th=""> <thlaw< th=""> <thlaw< th="">     &lt;</thlaw<></thlaw<></thlaw<>	> 55.0	++			00	N				6.8 6.0	<mark>ة بن</mark>		- 4			8 D	4
0         1         2         3         4         5         6         7         8         9         10         11         12         13         14         15         16         17         18         19         20           Timeframe         Hour         Lass         Lass         L3S         C3S         L3S         L5S         L3S         L3S         L3S         L9S         L9S         L9S         L3S         L3S         L9S         L9S         L9S         L3S         L3S         L9S         L9S <thl9s< th=""> <thl9s< th=""> <thl9s< th=""></thl9s<></thl9s<></thl9s<>	10.0	43.	43.	44	47	46.	48.	2 <mark>4.</mark>				5 <mark>4.</mark>	20.	46. 48.		41.5	42.
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	55.0	0	1 2	3	4 5	6	7 8	9 2	-		3 14	15 10	5 17	18 19	20	21 22	23
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$							/										
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	meframe															Adj.	<b>Adj. L</b> <sub>eq</sub>
Night         2         43.7         57.4         41.5         47.0         46.0         44.0         4																10.0 10.0	53.5 53.5
Night344.754.541.550.049.046.046.044.		-							_							10.0	53.7
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Night	3	44.7	54.5	41.5	50.0	49.0	46.0	46.0	44.0		44.0	44.0	42.0		10.0	54.7
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		4	47.1	62.6	44.4	57.0	54.0	49.0			44.0	44.0	44.0	44.0		10.0	57.1
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$																10.0	56.8
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		-														10.0	56.2
9         54.0         69.9         41.5         63.0         62.0         60.0         58.0         54.0         48.0         41.0         41.0         41.0         56.9           10         55.9         71.5         41.5         67.0         65.0         63.0         61.0         57.0         51.0         41.0         41.0         41.0         56.9           11         56.1         74.1         41.5         66.0         65.0         62.0         60.0         55.0         49.0         41.0         41.0         41.0         56.9           12         58.9         73.2         41.5         66.0         64.0         62.0         60.0         55.0         49.0         41.0         41.0         41.0         56.0           14         55.5         72.7         41.5         65.0         63.0         61.0         59.0         55.0         51.0         43.0         41.0         41.0         41.0         55.1           15         54.1         67.3         41.5         58.0         57.0         55.0         51.0         43.0         41.0         41.0         41.0         41.0         41.0         41.0         41.0         41.0         41.0		-														0.0 0.0	48.6
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		-														0.0	48.5 54.0
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		-														0.0	56.9
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $																0.0	56.1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Davi	12	58.9				67.0	65.0	63.0	59.0		43.0	41.0	41.0	58.9	0.0	58.9
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Day	13	56.0	77.5	41.5	66.0	64.0	62.0	60.0	55.0	49.0	41.0	41.0	41.0	56.0	0.0	56.0
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		14	55.5					61.0						41.0		0.0	55.5
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		-	_													0.0	54.1
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$																0.0	47.3
Image Note         19         48.3         69.7         41.5         62.0         58.0         53.0         50.0         42.0         41.0																0.0 0.0	50.4 46.1
Evening2042.361.941.548.045.044.042.041.041.041.041.041.041.042.32141.559.241.546.045.044.042.041.0 </td <td></td> <td>5.0</td> <td>53.3</td>																5.0	53.3
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Evening															5.0	47.3
Night       23       42.4       50.2       41.5       47.0       46.0       45.0       44.0       41.0							45.0	44.0				41.0	41.0			5.0	46.5
$L_{23}$ $42.4$ $50.2$ $41.5$ $47.0$ $46.0$ $45.0$ $44.0$ $41.0$ <td>Night</td> <td></td> <td>10.0</td> <td>51.8</td>	Night															10.0	51.8
Day         Min Max         46.1 58.9         62.7 77.5         41.5 43.9         56.0 68.0         53.0 67.0         50.0 65.0         49.0 63.0         43.0 59.0         41.0 53.0         41.0 44.0         41.0 41.0         41.0	-	-													42.4	10.0	52.4
Day         Max         58.9         77.5         43.9         68.0         67.0         65.0         63.0         59.0         53.0         44.0         44.0         44.0           Energy Average         54.4         Average:         62.1         60.3         57.9         56.2         51.8         47.5         41.9         41.4         41.3         51.8           Min         41.5         59.2         41.5         46.0         45.0         44.0         42.0         41.0         41.0         41.0         41.0         51.8	mejrame															L <sub>eq</sub> (dBA)	
Energy Average         54.4         Average:         62.1         60.3         57.9         56.2         51.8         47.5         41.9         41.4         41.3           Min         41.5         59.2         41.5         46.0         45.0         44.0         42.0         41.0	Day														24-Hour	Daytime	Nighttime
Min 415 592 415 460 450 440 420 410 410 410 410 410 410 51.8	Energy A														E1 0	ГЭГ	110
			41.5	59.2	41.5	46.0	45.0	44.0	42.0	41.0	41.0	41.0	41.0	41.0		53.5	
	-													41.0	24	-Hour CNEL (a	IBA)
Energy Average         45.2         Average:         52.0         49.3         47.0         44.7         41.3         41.0         41.0         41.0         41.0	Energy Av																
Min         41.8         50.2         41.5         46.0         45.0         44.0         41.0	Night															54.2	
Mg/H         Max         47.1         64.7         44.4         57.0         54.0         49.0         48.0         46.0         44.0         44.0         44.0           Energy Average         44.8         Average:         50.0         48.6         46.1         45.6         43.8         42.6         42.3         42.3         42.1	Energy Av														1		



								<b>evel Meas</b> Project site n		•	1					
	Tuesday, Ju Milestone N	lly 30, 2019 MX Motorcyc	cle Park	County	Location: of Riverside	, recidential l	nome.				Meter:	Piccolo I				12374 P. Mara
1							Hourly L <sub>eq</sub>	dBA Readings	(unadjusted)							
85.0	2															
(Vap) (Vap) (5.0 (5.0 (5.0 (1) (65.0 (1) (65.0) (1) (65.0) (1) (65.0) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1																
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<b>۔۔۔</b> 60.0 <b>۔۔</b> 55 (																
► 55.0 <b>1</b> 50.0 <b>0</b> 45.0 <b>0</b> 45.0		4 N	<u> </u>	0		v oo	4	<u>4</u> ω	- <mark>0</mark> -	4 <u>w</u>	0 6		<u> न</u>	ى ب	ຕຸ ຜູ	م
40.0		45.	47.7	51.0	48.1	<b>5</b> 3.	46.4	47. 45.	54.0	47.4 51.3	- <mark>4</mark> 4	42.	<mark>52.4</mark>	44	44 43	43
35.0	0	1 2	3	4 5	6	7 8	9	10 11	12 1	L3 14	15 16	5 17	18 19	20	21 22	23
	0	1 2	5	4 J	0	/ 0	5		eginning	15 14	15 10	) 1/	10 19	20	21 22	25
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	44.7	57.1	36.2	52.0	51.0	49.0	48.0	45.0	42.0	39.0	37.0	36.0	44.7	10.0	54.7
	1	45.4	61.4	36.2	55.0	53.0	50.0	48.0	45.0	42.0	39.0	39.0	36.0	45.4	10.0	55.4
	2	45.2	59.4	36.2	53.0	51.0	49.0	48.0	45.0	43.0	39.0	39.0	36.0	45.2	10.0	55.2
Night	3 4	47.7 51.0	59.1 67.6	40.7 44.0	56.0 56.0	54.0 55.0	52.0 54.0	51.0 53.0	47.0 51.0	45.0 49.0	43.0 46.0	42.0 46.0	41.0 45.0	47.7 51.0	10.0 10.0	57.7 61.0
	4 5	51.0	60.5	44.0	57.0	56.0	55.0	54.0	52.0	49.0 50.0	48.0	40.0	45.0	51.0	10.0	61.7
	6	48.1	58.3	43.2	55.0	54.0	52.0	51.0	48.0	46.0	45.0	44.0	44.0	48.1	10.0	58.1
	7	53.2	72.6	42.1	67.0	63.0	56.0	52.0	47.0	45.0	43.0	43.0	43.0	53.2	0.0	53.2
	8	47.8	64.0	39.0	58.0	55.0	52.0	50.0	46.0	44.0	42.0	41.0	40.0	47.8	0.0	47.8
	9 10	46.4 47.4	61.8 63.3	39.1 39.1	55.0 56.0	52.0 55.0	50.0 52.0	49.0 51.0	46.0 47.0	43.0 44.0	41.0 41.0	40.0 40.0	39.0 39.0	46.4 47.4	0.0 0.0	46.4 47.4
	10	47.4	59.2	38.2	53.0	52.0	50.0	49.0	45.0	43.0	39.0	39.0	39.0	47.4	0.0	45.3
Day	12	54.0	77.3	40.6	66.0	60.0	54.0	53.0	49.0	47.0	43.0	42.0	41.0	54.0	0.0	54.0
Day	13	47.4	64.9	36.2	55.0	54.0	53.0	51.0	46.0	44.0	41.0	40.0	39.0	47.4	0.0	47.4
	14	51.3	75.3	39.0	60.0	56.0	52.0	50.0	46.0	44.0	40.0	40.0	39.0	51.3	0.0	51.3
	15 16	44.0 44.9	58.5 58.8	38.7 39.0	52.0 52.0	50.0 51.0	48.0 49.0	46.0 48.0	44.0 45.0	42.0 43.0	39.0 40.0	39.0 39.0	39.0 39.0	44.0 44.9	0.0 0.0	44.0 44.9
	17	42.7	54.9	37.1	50.0	49.0	47.0	46.0	42.0	41.0	39.0	39.0	39.0	42.7	0.0	42.7
	18	52.4	76.4	36.2	62.0	57.0	53.0	51.0	45.0	42.0	39.0	39.0	38.0	52.4	0.0	52.4
_ ·	19	46.1	62.9	36.2	56.0	54.0	51.0	49.0	44.0	42.0	39.0	39.0	38.0	46.1	5.0	51.1
Evening	20 21	44.5 44.3	61.8 61.3	37.7 36.2	51.0 51.0	49.0 50.0	47.0 48.0	46.0 47.0	44.0 44.0	42.0 42.0	39.0 39.0	39.0 39.0	39.0 38.0	44.5 44.3	5.0 5.0	49.5 49.3
	22	44.3	52.3	37.1	49.0	49.0	48.0	47.0	44.0	42.0	39.0	39.0	38.0	44.3	10.0	53.8
Night	23	43.9	53.7	36.2	51.0	50.0	48.0	47.0	44.0	42.0	39.0	38.0	36.0	43.9	10.0	53.9
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min Max	42.7 54.0	54.9 77.3	36.2 42.1	50.0 67.0	49.0 63.0	47.0 56.0	46.0	42.0 49.0	41.0	39.0 43.0	39.0	38.0	24-Hour	Daytime	Nighttime
Energy	Max Average	49.6		erage:	57.2	54.5	56.0 51.3	53.0 49.7	49.0	47.0 43.5	43.0 40.6	43.0 40.1	43.0 39.5	40.0		
	Min	44.3	61.3	36.2	51.0	49.0	47.0	46.0	44.0	42.0	39.0	39.0	38.0	48.6	49.0	47.8
Evening	Max	46.1	62.9	37.7	56.0	54.0	51.0	49.0	44.0	42.0	39.0	39.0	39.0	24	-Hour CNEL (a	dBA)
Energy	Average	45.0		erage:	52.7	51.0	48.7	47.3	44.0	42.0	39.0	39.0	38.3			
Night	Min Max	43.8 51.7	52.3 67.6	36.2 45.3	49.0 57.0	49.0 56.0	48.0 55.0	47.0 54.0	44.0 52.0	42.0 50.0	39.0 48.0	37.0 47.0	36.0 46.0		54.5	
Energy	Average	47.8		erage:	53.8	52.6	50.8	49.7	46.8	44.6	48.0	41.2	39.8	1		



	Tuesday, Ju Milestone N	-	cle Park	County	Location of Riverside	L3- Located	south of the existing resid	evel Measu e project on R ential home.	Read Street a	and Ethanac	Meter	: Piccolo II			JN: Analyst:	12374 P. Mara
							Hourly L <sub>eq</sub>	dBA Readings	(unadjusted)	)						
	-															
85.0 80.0	$\frac{1}{2}$															
(80.0 75.0 70.0	5 ++															
<b>5</b> 70.0																
0.00 0.07 0.07 0.00 0.00 0.00 0.00	<u> 5</u> — — — — — — — — — — — — — — — — — —															
<b>→</b> 55.0	2															
<b>Λ</b> μη 55.0 50.0 45.0 40.0	Ď <b>⊢ ∷</b> ⊢	3 17 O		51.2	53.6	<mark>49.2</mark> 49.3	<b>54.7</b>	0.8		2.9	<b>6</b> .0	2. 	8.6 <b>8.6</b>	0.2	<b>N S</b>	<u> </u>
▲ 40.0 35.0	- 4 	44.		– ŭ –– ŭ	O	49. 49.	<u> </u>	<u> </u>	- <u>10</u>	47.	48. 20	4 4 8 4 8 	50.	<u> </u>	46. 44.	44.
55.0		1 2	3	4 5	6	7 8	0	10 11	10 /	10 14	1 1	c 17	10 10	20	21 22	23
	0	1 2	5	4 5	6	7 8	9	-	12 í eginning	13 14	15 1	6 17	18 19	20	21 22	23
			_													
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	46.3	58.1	36.1	53.5	52.7	51.5	50.6	47.2	44.2	38.9	37.9	37.0	46.3	10.0	56.3
	1	44.0	55.7	35.3	52.1	51.2	49.5	48.1	44.5	41.6	37.6	37.0	36.0	44.0	10.0	54.0
	2	43.3	59.8	33.9	51.8	50.4	48.4	46.9	43.6	40.9	36.2	35.6	34.9	43.3	10.0	53.3
Night	3	47.5	64.6	36.6	54.9	53.0	51.7	50.7	48.3	46.1	40.0	38.7	37.2	47.5	10.0	57.5
	4	51.2	60.2	42.0	56.4	55.9	54.7	54.2	52.2	50.4	46.9	46.0	44.5	51.2	10.0	61.2
	6	51.8 53.6	61.7 73.0	45.0 45.7	57.5 58.9	56.6 57.8	55.4 56.4	54.7 55.8	52.7 54.2	50.7 52.5	47.8 49.3	47.0 48.3	46.0 47.1	51.8 53.6	10.0 10.0	61.8 63.6
	7	49.2	58.6	43.7	55.5	54.3	53.2	52.3	49.9	48.2	45.1	48.3	47.1	49.2	0.0	49.2
	8	49.3	64.8	39.7	61.3	58.8	54.2	51.6	47.6	45.3	42.8	44.3	41.5	49.3	0.0	49.2
	9	54.7	81.1	37.0	68.4	64.3	54.1	50.6	46.6	43.9	40.7	39.6	38.1	54.7	0.0	54.7
	10	50.8	78.0	36.9	57.0	54.2	51.8	50.4	47.2	44.3	40.5	39.7	38.3	50.8	0.0	50.8
	11	50.4	69.3	33.4	60.6	60.4	59.2	58.9	46.8	43.7	38.8	38.0	36.2	50.4	0.0	50.4
Devi	12	51.8	68.0	35.1	61.8	60.6	59.4	59.2	48.4	44.2	38.8	38.0	36.6	51.8	0.0	51.8
Day	13	47.2	63.0	37.0	55.5	53.8	51.4	50.3	47.5	45.3	41.4	40.5	38.7	47.2	0.0	47.2
	14	45.9	65.2	35.0	54.3	52.5	50.1	49.1	46.2	43.5	39.2	38.1	36.3	45.9	0.0	45.9
	15	48.9	71.0	35.9	61.0	57.6	52.4	50.5	47.4	44.6	40.0	39.2	37.5	48.9	0.0	48.9
	16	48.9	70.1	36.5	59.5	55.7	52.4	50.6	46.4	43.6	40.0	39.1	38.0	48.9	0.0	48.9
	17	48.5	60.3	39.8	54.4	53.5	52.2	51.5	49.3	47.6	44.3	43.4	41.5	48.5	0.0	48.5
	18	48.6	72.6	37.8	54.7	51.0	48.5	47.6	45.5	43.9	41.1	40.5	39.3	48.6	0.0	48.6
Evening	19 20	50.7 50.2	70.4 77.6	39.1 40.0	62.0 58.4	58.7 55.5	54.4 52.9	52.4 51.6	48.7 49.1	46.5 47.2	43.3 44.5	42.6 43.6	41.1 42.3	50.7 50.2	5.0 5.0	55.7 55.2
Lvening	20	46.7	62.5	36.9	54.3	52.4	52.9	49.4	49.1	47.2	44.5	43.0	38.9	46.7	5.0	55.2
	21	40.7	52.7	35.4	49.9	49.3	48.5	49.4	47.1	43.8	39.9	38.7	36.4	44.8	10.0	54.8
Night	23	44.0	53.7	36.2	50.2	49.2	48.0	47.3	44.9	43.0	39.3	38.6	37.5	44.0	10.0	54.0
Timeframe	Hour	L <sub>eq</sub>	L max	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	1.10	L <sub>eq</sub> (dBA)	
	Min	45.9	58.6	33.4	54.3	51.0	48.5	47.6	45.5	43.5	38.8	38.0	36.2	24		
Day	Max	54.7	81.1	42.1	68.4	64.3	59.4	59.2	49.9	48.2	45.1	44.3	43.0	24-Hour	Daytime	Nighttime
Energy	Average	50.1		erage:	58.7	56.4	53.2	51.9	47.4	44.8	41.1	40.2	38.8	10 7		10 0
Evening	Min	46.7	62.5	36.9	54.3	52.4	50.3	49.4	47.1	45.0	41.0	40.1	38.9	49.7	50.0	49.0
Evening	Max	50.7	77.6	40.0	62.0	58.7	54.4	52.4	49.1	47.2	44.5	43.6	42.3	24	-Hour CNEL (a	IBA)
Energy	Average	49.5	Av	erage:	58.2	55.5	52.5	51.1	48.3	46.2	42.9	42.1	40.8			
Night	Min	43.3	52.7	33.9	49.9	49.2	48.0	46.9	43.6	40.9	36.2	35.6	34.9		55.8	
-	Max	53.6	73.0	45.7	58.9	57.8	56.4	55.8	54.2	52.5	49.3	48.3	47.1		77.0	
Energy	Average	49.0	Av	erage:	53.9	52.9	51.6	50.7	48.2	45.9	41.8	40.9	39.6			



	Tuesday, Ju Milestone I	ily 30, 2019 MX Motorcyc	cle Park	County	Location of Riverside	L4 - Located	on the sout g vacant lan		ry of the Pro	oject site	Meter	: Piccolo I				12374 P. Mara
							Hourly L <sub>eq</sub>	dBA Readings	(unadjusted)							
85.0	י															
(V g p) 65.0 65.0 65.0 65.0 65.0 60.0																
₹ 55.0	2 ++															
<b>A</b> 55.0 <b>D</b> 55.0 <b>O</b> 45.0 <b>O</b> 45.0 40.0	<b>8</b>	38.6 37.6	42.7	43.4	46.6	<mark>44</mark> .0 46.2		45.0 42.8		<mark>- 43</mark> .5	20.0	40.3	<mark>49.7</mark>	<mark>4</mark> 2.1	<b>3</b> 9.4 40.3	40.7
40.0	)	38 37	4	4 4	4	4 4	4	4 4	4	4 <u>0</u>	<u> </u>	<b>4</b>	4 4	4	<b>w</b> 4	4
	0	1 2	3	4 5	6	7 8	9	10 11	12 1	L3 14	15 1	6 17	18 19	20	21 22	23
									eginning							
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	L <sub>eq</sub>	Adj.	Adj. L <sub>eq</sub>
	0	38.8	53.5	36.0	48.0	47.0	44.0	41.0	36.0	36.0	36.0	36.0	36.0	38.8	10.0	48.8
	1	38.6	52.2	36.0	48.0	46.0	42.0	41.0	36.0	36.0	36.0	36.0	36.0	38.6	10.0	48.6
	2	37.6	51.4	36.0	45.0	44.0	40.0	39.0	36.0	36.0	36.0	36.0	36.0	37.6	10.0	47.6
Night	3	42.7	59.7	36.0	55.0	51.0	45.0	44.0	41.0	39.0	36.0	36.0	36.0	42.7	10.0	52.7
	4	43.4	66.3	38.8	51.0	49.0	47.0	45.0	43.0	41.0	40.0	39.0	39.0	43.4	10.0	53.4
	5	48.1 46.6	64.9 63.1	38.7 38.9	60.0 57.0	58.0 55.0	52.0 51.0	50.0 49.0	46.0 45.0	43.0 41.0	40.0 40.0	39.0 39.0	39.0 39.0	48.1 46.6	10.0 10.0	58.1 56.6
	7	44.0	57.8	38.7	53.0	52.0	49.0	47.0	42.0	40.0	39.0	39.0	39.0	44.0	0.0	44.0
	8	46.2	66.6	36.0	57.0	55.0	52.0	49.0	43.0	39.0	36.0	36.0	36.0	46.2	0.0	46.2
	9	42.4	58.1	36.0	50.0	50.0	48.0	46.0	42.0	39.0	36.0	36.0	36.0	42.4	0.0	42.4
	10	45.0	61.1	36.0	57.0	55.0	50.0	49.0	43.0	37.0	36.0	36.0	36.0	45.0	0.0	45.0
	11	42.8	58.4	36.0	52.0	51.0	48.0	47.0	42.0	38.0	36.0	36.0	36.0	42.8	0.0	42.8
Day	12	49.0 43.5	76.9 65.2	36.0	59.0	56.0 52.0	53.0 48.0	51.0 47.0	45.0	41.0	36.0 36.0	36.0 36.0	36.0 36.0	49.0	0.0	49.0 42.5
	13 14	43.5 51.3	75.3	36.0 36.0	54.0 62.0	52.0	48.0 52.0	47.0	41.0 43.0	37.0 39.0	36.0	36.0	36.0	43.5 51.3	0.0 0.0	43.5 51.3
	15	50.0	80.7	36.0	58.0	54.0	49.0	47.0	40.0	37.0	36.0	36.0	36.0	50.0	0.0	50.0
	16	42.4	70.9	36.0	52.0	50.0	47.0	45.0	39.0	36.0	36.0	36.0	36.0	42.4	0.0	42.4
	17	40.3	69.7	36.0	48.0	47.0	44.0	43.0	37.0	36.0	36.0	36.0	36.0	40.3	0.0	40.3
	18	49.7	73.8	36.0	60.0	57.0	53.0	50.0	42.0	38.0	36.0	36.0	36.0	49.7	0.0	49.7
	19	49.1	71.6	36.0	60.0	57.0	51.0	49.0	43.0	40.0	36.0	36.0	36.0	49.1	5.0	54.1
Evening	20	42.1	64.3	36.0	50.0	48.0	45.0	43.0	39.0	38.0	36.0	36.0	36.0	42.1	5.0	47.1
	21 22	39.4 40.3	52.2 52.7	36.0 36.0	49.0 49.0	47.0 48.0	45.0 46.0	43.0 45.0	36.0 39.0	36.0 36.0	36.0 36.0	36.0 36.0	36.0 36.0	39.4 40.3	5.0	44.4 50.3
Night	23	40.7	55.0	36.0	51.0	49.0	46.0	45.0	39.0	36.0	36.0	36.0	36.0	40.7	10.0	50.7
Timeframe	Hour	L <sub>eq</sub>	L <sub>max</sub>	L <sub>min</sub>	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%		L <sub>eq</sub> (dBA)	
Day	Min	40.3	57.8	36.0	48.0	47.0	44.0	43.0	37.0	36.0	36.0	36.0	36.0	24-Hour	Daytime	Nighttime
	Max	51.3	80.7	38.7	62.0	58.0	53.0	51.0	45.0	41.0	39.0	39.0	39.0		Buytime	Angintainte
Energy	Average	46.9		erage:	55.2	53.1	49.4	47.5	41.6	38.1	36.3	36.3	36.3	45.7	46.7	43.3
Evening	Min Max	39.4 49.1	52.2 71.6	36.0 36.0	49.0 60.0	47.0 57.0	45.0 51.0	43.0 49.0	36.0 43.0	36.0 40.0	36.0 36.0	36.0 36.0	36.0 36.0		-Hour CNEL (d	
Energy	Average	49.1	-	erage:	53.0	57.0	47.0	49.0	43.0 39.3	38.0	36.0	36.0	36.0	- 24		
	Min	37.6	51.4	36.0	45.0	44.0	40.0	39.0	36.0	36.0	36.0	36.0	36.0	1		
Night	Max	48.1	66.3	38.9	60.0	58.0	52.0	50.0	46.0	43.0	40.0	39.0	39.0		50.8	
Energy	Average	43.3	Ave	erage:	51.6	49.7	45.9	44.3	40.1	38.2	37.3	37.0	37.0			



APPENDIX 7.1:

**OFF-SITE TRAFFIC NOISE CONTOURS** 





FHWA-RD-77-108 HIGHWAY	NOISE PREDICTION MODEL
Scenario: Existing Road Name: SR-74 Road Segment: n/o Theda St.	Project Name: JS 63 MX Job Number: 12374
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 26,059 vehicles Peak Hour Percentage: 7.71%	Autos: 15 Medium Trucks (2 Axles): 15
Peak Hour Volume: 2,009 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 60 mph Near/Ear Lane Distance: 48 feet	Vehicle Mix
Near/Far Lane Distance: 48 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 14.0% 10.5% 92.00%
Barrier Height: 0.0 feet	Medium Trucks: 48.0% 2.0% 50.0% 3.00%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 48.0% 2.0% 50.0% 5.00%
Centerline Dist. to Barrier: 64.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 64.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 59.540
Left View: -90.0 degrees	Medium Trucks: 59.391
Right View: 90.0 degrees	Heavy Trucks: 59.406
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance	Finite Road Fresnel Barrier Atten Berm Atten
Autos: 73.22 -0.42 -1	24 -1.20 -4.70 0.000 0.000
Medium Trucks: 83.68 -15.29 -1	.22 -1.20 -4.88 0.000 0.000
Heavy Trucks: 87.33 -13.07 -1	23 -1.20 -5.31 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier atte	enuation)
	Evening Leq Night Ldn CNEL
Autos: 70.4 69.6	68.2 62.2 70.6 71.2
Medium Trucks: 66.0 63.1	55.3 64.6 70.7 70.7
Heavy Trucks: 71.8 69.0	61.2 70.4 76.6 76.6
Vehicle Noise: 74.8 72.8	69.2 71.9 78.4 78.5
Centerline Distance to Noise Contour (in feet)	
	0 dBA 65 dBA 60 dBA 55 dBA
	231 498 1,073 2,311
CNEL:	236 509 1.096 2.361

I	FHWA-R	D-77-108 HI	GHW	AY NO	DISE PR	EDICTI	ON MO	DEL			
Scenario: Existing Road Name: SR-74						Project	Name: umber:		MX		
Road Name: SR-74 Road Segment: s/o The	da St.					JOD IN	imber:	12374			
SITE SPECIFIC						N			L INPUT	's	
Highway Data	INFO	DATA		s	ite Cond					3	
Average Daily Traffic (Ad	)· 29.21	6 vehicles						Autos:	15		
Peak Hour Percentag		1%			Med	ium Tru					
Peak Hour Volum		3 vehicles				avy Truc					
Vehicle Spee		0 mph					. 1.	,			
Near/Far Lane Distanc		8 feet		V	ehicle N			0	Guardian	Allenhet	Delle
A				_	veni	cleType	utos:	Day 77.5%	Evening 14.0%	Night	Daily
Site Data				_	140	н dium Tr		48.0%			92.00 <sup>4</sup> 3.00 <sup>4</sup>
Barrier Heigh		0.0 feet				leavy Tr		48.0%			
Barrier Type (0-Wall, 1-Bern		0.0			п	eavy II	ucks.	40.0%	2.0%	50.0%	5.00
Centerline Dist. to Barrie	-	4.0 feet		N	oise So	urce Ele	evation	s (in fe	eet)		
Centerline Dist. to Observe	-	4.0 feet				Autos	: 0.	000			
Barrier Distance to Observe	-	0.0 feet			Mediun	n Trucks	: 2.	297			
Observer Height (Above Pac		5.0 feet			Heav	/ Trucks	. 8.	006	Grade Ad	djustment	: 0.0
Pad Elevatio		0.0 feet					Distan	//	(		
Road Elevatio		0.0 feet		L	ane Equ				reet)		
Road Grad		0.0%				Autos		540			
Left View		0.0 degrees				n Trucks		391			
Right View	v: 90	0.0 degrees			Heav	y Trucks	: 59.	406			
FHWA Noise Model Calculat											
VehicleType REMEL			Distan		Finite I		Fresr		Barrier At		m Atter
	.22	0.08		-1.24		-1.20		-4.70		000	0.00
	.68	-14.79		-1.22		-1.20		-4.88		000	0.00
Heavy Trucks: 87	.33	-12.57		-1.23		-1.20		-5.31	0.	000	0.00
Unmitigated Noise Levels (v										T	
VehicleType Leq Peak		Leq Day		eq Eve		Leq I			Ldn		NEL
Autos:	70.9	70			68.7		62.7		71.		71
Medium Trucks:	66.5	63			55.8		65.0		71.	-	71
Heavy Trucks:	72.3	69	-		61.7		70.9		77.		77
Vehicle Noise:	75.3	73	.3		69.7		72.4	ļ	78.	9	79
Centerline Distance to Noise	e Contou	ır (in feet)									
				70 dl		65 0			60 dBA		dBA
		Ld		249		53			1,158		494
		CNE	1.	255			9		1.183	2	548

	FH	WA-RD-77-108	BHIG	HWAY	NC	ISE PF	REDICT	ION M	ODEL			
Scenari Road Nam Road Segmen		c Rd.							e JS 63 7 12374			
SITE S	SPECIFIC IN	NPUT DATA								L INPUT	s	
Highway Data					Si	te Con	ditions	(Hard	= 10, Se	oft = 15)		
Average Daily	Traffic (Adt):	27,965 vehicle	s						Autos:	15		
Peak Hour	Percentage:	7.71%				Me	dium Tru	ucks (2	2 Axles):	15		
Peak H	our Volume:	2,156 vehicle	s			Hea	avy Truc	cks (3+	+ Axles):	15		
Vel	hicle Speed:	60 mph			Ve	hicle N	Nix					
Near/Far Lar	ne Distance:	48 feet					cleType	•	Day	Evening	Night	Daily
Site Data								Autos:	77.5%	14.0%	10.5%	92.00%
Bar	rier Heiaht:	0.0 feet				Me	edium Ti	rucks:	48.0%	2.0%	50.0%	3.00%
Barrier Type (0-W	all, 1-Berm):	0.0				F	leavy Ti	rucks:	48.0%	2.0%	50.0%	5.00%
Centerline Dis		59.0 feet			No	oise So	urce El	evatio	ons (in f	eet)		
Centerline Dist. t		59.0 feet					Autos	s:	0.000			
Barrier Distance		0.0 feet				Mediur	n Truck	s: :	2.297			
Observer Height ()	,	5.0 feet				Heav	y Truck	s:	8.006	Grade Ac	ljustmen	t: 0.0
	d Elevation:	0.0 feet			1.	no Fau	inclose	Diete	nce (in	fact)		
	d Elevation:	0.0 feet		-	La	ine Equ				ieel)		
F	Road Grade:	0.0%				1 4 m all	Auto: n Truck:		4.129 3.966			
	Left View: Right View:	-90.0 degre 90.0 degre					n Truck y Truck		3.966 3.982			
FHWA Noise Mode	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Di	stance	Т	Finite	Road	Fre	snel	Barrier At	ten Be	rm Atten
Autos:	73.22	-0.11		-0.6	62		-1.20		-4.69	0.	000	0.00
Medium Trucks:	83.68	-14.98	;	-0.6	60		-1.20		-4.88	0.	000	0.00
Heavy Trucks:	87.33	-12.76	i	-0.6	60		-1.20		-5.35	0.	000	0.00
Unmitigated Noise												
,	Leq Peak Ho		/	Leq E	Eve	~	Leq	Night		Ldn		NEL
Autos:		1.3	70.5			69.1			3.1	71.	-	72.:
Medium Trucks:		3.9	64.1			56.3			5.5	71.	-	71.
Heavy Trucks:		2.8	69.9			62.1			.3	77.		77.
Vehicle Noise:		5.7	73.7			70.1		72	2.8	79.	3	79.
Centerline Distanc	e to Noise C	ontour (in fee	t)	70	dE	A	65	dBA		60 dBA	55	dBA
			I dn:		46			29	`	1.141		458
		C	NEL:	_	251			41		1,165	-	511
		0		-			0			,	-	

Scenario:         Existing         Project Name:         JS 63           Road Name:         SR-74         Job Number:         12374           Road Segment:         slo Ethanac Rd.         SITE SPECIFIC INPUT DATA         NOISE MODE		
STE STEOTIO INFOT DATA NUISE MUDE	EL INPUTS	
Highway Data Site Conditions (Hard = 10, S	oft = 15)	
Average Daily Traffic (Adt): 28,879 vehicles Autos.	: 15	
Peak Hour Percentage: 7.71% Medium Trucks (2 Axles).	: 15	
Peak Hour Volume: 2,227 vehicles Heavy Trucks (3+ Axles).	: 15	
Vehicle Speed: 60 mph Vehicle Mix		
Near/Far Lane Distance: 120 feet Vehicle Type Day	Evening	Night Daily
Site Data Autos: 77.5%	6 14.0%	10.5% 92.00%
Barrier Height: 0.0 feet Medium Trucks: 48.0%	6 2.0%	50.0% 3.00%
Barrier Type (0-Wall, 1-Berm): 0.0 Heavy Trucks: 48.0%	6 2.0%	50.0% 5.00%
Centerline Dist. to Barrier: 110.0 feet Noise Source Elevations (in f	feet)	
Centerline Dist. to Observer: 110.0 feet Autos: 0.000		
Barrier Distance to Observer: 0.0 feet Medium Trucks: 2.297		
Observer Height (Above Pad): 5.0 feet Heavy Trucks: 8.006	Grade Adiu	stment: 0.0
Pad Elevation: 0.0 feet		
Road Elevation: 0.0 feet Lane Equivalent Distance (in	feet)	
Road Grade: 0.0% Autos: 92.331		
Left View: -90.0 degrees Medium Trucks: 92.235 Right View: 90.0 degrees Heavy Trucks: 92.244		
FHWA Noise Model Calculations		
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel	Barrier Atte	n Berm Atten
Autos: 73.22 0.03 -4.10 -1.20 -4.78	0.00	0.000 0.000
Medium Trucks: 83.68 -14.84 -4.09 -1.20 -4.88	0.00	0.000 0.000
Heavy Trucks: 87.33 -12.62 -4.09 -1.20 -5.14	0.00	000.00
Unmitigated Noise Levels (without Topo and barrier attenuation)		
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night	Ldn	CNEL
Autos: 67.9 67.2 65.8 59.7	68.2	68.8
Medium Trucks: 63.6 60.7 52.9 62.1	68.3	68.3
Heavy Trucks: 69.4 66.6 58.8 68.0	74.1	74.2
Vehicle Noise: 72.4 70.4 66.7 69.5	75.9	76.1
Centerline Distance to Noise Contour (in feet)		
	60 dBA	55 dBA
Ldn: 274 590	1,272	2,740
CNEL: 280 603	1,299	2,799

Tuesday, January 21, 2020

Tuesday, January 21, 2020

	FHV	VA-RD-77-108 HIC	GHWAY I	NOISE PF	EDICTION	MODEL			
Scenari Road Nam Road Segmen		d.			Project Na Job Num	ime: JS 63 iber: 1237			
SITE S	SPECIFIC IN	IPUT DATA			NO	SE MOD	EL INPUT	s	
Highway Data				Site Con	ditions (Ha	ard = 10, S	Goft = 15)		
Average Daily	Traffic (Adt): 2	29,949 vehicles				Autos	: 15		
Peak Hour	Percentage:	7.71%		Me	dium Truck	s (2 Axles	): 15		
Peak H	our Volume:	2,309 vehicles		Hea	avy Trucks	(3+ Axles	): 15		
Vel	hicle Speed:	60 mph	H	Vehicle N					
Near/Far Lar	ne Distance:	120 feet	-		cleType	Dav	Evening	Night	Deilu
Site Data				veni	Aut		0	10.5%	Daily 92.00%
				M	dium Truc			50.0%	3.00%
	rier Height:	0.0 feet			leavv Truc			50.0%	5.00%
Barrier Type (0-W		0.0		,	icavy muc	ns. 40.0	/0 2.070	30.070	3.00 /0
Centerline Dis		110.0 feet		Noise So	urce Eleva	ations (in	feet)		
Centerline Dist. t		110.0 feet			Autos:	0.000			
Barrier Distance		0.0 feet		Mediur	n Trucks:	2.297			
Observer Height (		5.0 feet		Heav	y Trucks:	8.006	Grade Ad	justment.	0.0
	d Elevation:	0.0 feet	-	Lano Equ	ivalent Di	stanco (ir	foot)		
	d Elevation: Road Grade:	0.0 feet	-	Lane Equ	Autos:	92.331	leel)		
F	l eft View:	0.0%		Madium	n Trucks:	92.331			
	Right View:	-90.0 degrees			y Trucks:	92.235			
	•	90.0 degrees		neuv	y mucho.	32.244			
FHWA Noise Mode		-		1 =				-	
VehicleType	REMEL		Distance	Finite		Fresnel	Barrier Att		m Atten
Autos: Medium Trucks:	73.22	0.19	-4.1		-1.20	-4.78		000	0.000
	83.68	-14.68 -12.46	-4.0 -4.0	-	-1.20 -1.20	-4.88		000	0.000
Heavy Trucks:	87.33			-	-1.20	-5.14	0.0	000	0.000
Unmitigated Noise			1	<u> </u>					
21	Leq Peak Hou			vening	Leq Nig		Ldn		VEL
Autos:	68 63		-	65.9 53.1		59.9 62.3	68.4 68.4		69.0 68.5
Medium Trucks:	63		-	53.1 58.9		62.3 68.1	68.4 74.3		
Heavy Trucks: Vehicle Noise:	72			58.9 66.9		69.6	74.3	-	74.3
Centerline Distanc			•	50.5		00.0	70.		70.2
Contenine Distanc	6 10 MOI38 60	nitodi (ili ieel)	70	dBA	65 dB/	4	60 dBA	55	dBA
		Ldn		81	605	•	1.303		808
		CNEL		87	618		1,303	,	B68
		SIVEL	20		010		.,001	2,	

F	HWA-RD-7	77-108 HIG	GHWAY	NOISE PF	REDICTIO	N MOI	DEL			
Scenario: Existing					Project N			XN		
Road Name: SR-74					Job Nu	nber: '	12374			
Road Segment: s/o River	Ra.									
SITE SPECIFIC	INPUT D	ATA							S	
Highway Data				Site Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt)	29,404 v	/ehicles					Autos:	15		
Peak Hour Percentage					dium Truc			15		
Peak Hour Volume.		/ehicles		He	avy Truck	s (3+ A	(xles):	15		
Vehicle Speed				Vehicle I	<i>lix</i>					
Near/Far Lane Distance	120 f	eet		Vehi	cleType		Day	Evening	Night	Daily
Site Data					Au	itos:	77.5%	14.0%	10.5%	92.009
Barrier Height		feet		Me	edium Tru	cks:	48.0%	2.0%	50.0%	3.009
Barrier Type (0-Wall, 1-Berm)				F	łeavy Tru	cks:	48.0%	2.0%	50.0%	5.00%
Centerline Dist. to Barrier		feet								
Centerline Dist, to Observer				Noise So				eet)		
Barrier Distance to Observer		feet			Autos:		000			
Observer Height (Above Pad)	5.0	feet			n Trucks:		297	Grade Ad	iuctmont	
Pad Elevation	0.0	feet		Heav	y Trucks:	8.0	006	Glade Au	usuneni	0.0
Road Elevation	0.0	feet		Lane Equ	ıivalent D	Distand	e (in t	'eet)		
Road Grade	0.09	%			Autos:	92.3	331			
Left View	-90.0	degrees		Mediur	n Trucks:	92.2	235			
Right View	90.0	degrees		Heav	y Trucks:	92.2	244			
FHWA Noise Model Calculation										
VehicleType REMEL	Traffic		Distance	Finite		Fresn	-	Barrier Att		m Atten
Autos: 73.2		0.11	-4.		-1.20		-4.78		000	0.00
Medium Trucks: 83.6		-14.76	-4.		-1.20		-4.88		000	0.00
Heavy Trucks: 87.3	- 33	-12.54	-4.	09	-1.20		-5.14	0.0	000	0.00
Unmitigated Noise Levels (wi			T. T.	,						
VehicleType Leq Peak H		eq Day		Evening	Leq N			Ldn		VEL
	68.0	67.3	-	65.8		59.8		68.3		68.
	63.6	60.	-	53.0		62.2		68.4		68.
	69.5	66.		58.9		68.1		74.2		74.
	72.4	70.	5	66.8		69.6		76.0	)	76
Centerline Distance to Noise	Contour (	in feet)								
				) dBA	65 dE			i0 dBA		dBA
		Ldr		277	598			1,287		773
		CNFI		283	610			1,315	2	833

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: Existing Road Name: SR-74 Project Name: JS 63 MX Job Number: 12374 Road Segment: s/o Meadowbrook Av SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Highway Data Autos: Average Daily Traffic (Adt): 33,060 vehicles 15 Peak Hour Percentage: 7.71% Medium Trucks (2 Axles): 15 Peak Hour Volume: 2,549 vehicles Heavy Trucks (3+ Axles): 15 Vehicle Speed: 60 mph Vehicle Mix pe Day Evening Night Daily Autos: 77.5% 14.0% 10.5% 92.00% Near/Far Lane Distance: 120 feet VehicleType 10.5% 92.00% Site Data Medium Trucks: 48.0% 2.0% 50.0% 3.00% Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 Heavy Trucks: 48.0% 2.0% 50.0% 5.00% Centerline Dist. to Barrier: Centerline Dist. to Observer: 110.0 feet 110.0 feet Noise Source Elevations (in feet) 0.000 Autos: Barrier Distance to Observer: Observer Height (Above Pad): 0.0 feet Medium Trucks: 2.297 5.0 feet Heavy Trucks: 8.006 Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: Medium Trucks: Road Grade: 0.0% 92.331 92.235 Left View: -90.0 degrees Right View: 90.0 degrees Heavy Trucks: 92.244 FHWA Noise Model Calculations VehicleType REMEL Autos: 73.22 Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten -4.78 0.000 0.00 0.61 -4.10 0.000 Medium Trucks: 83.68 -14.25 -4.09 -1.20 -4.88 0.000 0.000 Heavy Trucks: 87.33 -12.03 -4.09 -1.20 -5.14 0.000 0.000 Unmitigated Noise Levels (without Topo and barrier attenuation) 
 VehicleType
 Leq Peak Hour
 Leq Day
 Leq Evening

 Autos:
 68.5
 67.8
 66.4
 Leq Night 60.3 Ldn CNEL 69.4 68.8 68.9 74.7 Medium Trucks: 64.1 61.3 53.5 62.7 68.9 Heavy Trucks: 70.0 67.1 59.4 68.6 74.8 Vehicle Noise: 73.0 76.7 71.0 67.3 70.1 76.5 Centerline Distance to Noise Contour (in feet) 60 dBA 70 dBA 65 dBA 55 dBA Ldn: 300 646 1,392 2,999 1,422 CNEL: 306 660 3,063

					OISE PR					
Road Nam	io: Existing ie: Ethanac Ro nt: w/o SR-74	i.				Project Na Job Numi				
SITE	SPECIFIC IN	IPUT DATA				NOI	SE MOD	EL INPUT	s	
Highway Data				S	Site Cond	litions (Ha	rd = 10, S	oft = 15)		
Average Daily	Traffic (Adt):	162 vehicle	5				Autos	: 15		
Peak Hour	Percentage:	7.71%			Med	ium Trucks	(2 Axles	: 15		
Peak F	lour Volume:	12 vehicle	5		Hea	vy Trucks	(3+ Axles,	: 15		
Ve	hicle Speed:	40 mph		L.	/ehicle M	ly.				
Near/Far La	ne Distance:	12 feet		v		leType	Day	Evening	Night	Daily
Site Data					VCINC	Auto		•	10.5%	
				_	Mo	dium Truck			48.9%	
	rrier Height:	0.0 feet				eavy Truck			47.3%	
Barrier Type (0-W	. ,	0.0 37.0 feet							47.07	0.1470
Centerline Di Centerline Dist.		37.0 feet		٨	Voise Sou	ırce Eleva	tions (in	feet)		
Barrier Distance		0.0 feet				Autos:	0.000			
Observer Height		5.0 feet			Medium	Trucks:	2.297			
	ad Flevation:	0.0 feet			Heavy	Trucks:	8.006	Grade Ac	ljustmen	t: 0.0
	ad Elevation:	0.0 feet		L	ane Equ	ivalent Dis	stance (in	feet)		
	Road Grade:	0.0%		-		Autos:	36.851	,		
	Left View:	-90.0 degree	ac ac		Medium	Trucks:	36.610			
	Right View:	90.0 degree				Trucks:	36.634			
	-1.0-11	c .								
FHWA Noise Mod										
FHWA Noise Mod VehicleType	REMEL	Traffic Flow	Dista	nce	Finite F	Road F	resnel	Barrier At	ten Be	rm Atten
1			Dista	nce 1.88		Road F -1.20	resnel -4.56		ten Be	rm Atten 0.000
VehicleType	REMEL	Traffic Flow	Dista		3			0.		0.000
VehicleType Autos:	REMEL 66.51	Traffic Flow -20.47	Dista	1.88	3	-1.20	-4.56	0.	000	0.000
VehicleType Autos: Medium Trucks:	REMEL 66.51 77.72 82.99	Traffic Flow -20.47 -37.71 -41.67		1.88 1.93 1.92	3	-1.20 -1.20	-4.56 -4.87	0.	000 000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 66.51 77.72 82.99	Traffic Flow -20.47 -37.71 -41.67 out Topo and	barrier	1.88 1.93 1.92 attenu	3 2 <b>uation)</b> vening	-1.20 -1.20	-4.56 -4.87 -5.61	0. 0. 0.	000 000 000	0.000
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos:	REMEL 66.51 77.72 82.99 E Levels (with	Traffic Flow           -20.47           -37.71           -41.67           out Topo and           Ir         Leq Day	barrier	1.88 1.93 1.92 attenu	a 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-1.20 -1.20 -1.20	-4.56 -4.87 -5.61	0. 0. 0.	000 000 000	0.000 0.000 0.000 NEL 47.6
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	REMEL 66.51 77.72 82.99 E Levels (with Leq Peak Hou	Traffic Flow -20.47 -37.71 -41.67 out Topo and ir Leq Day .7	barrier	1.88 1.93 1.92 attenu	3 2 <b>uation)</b> vening	-1.20 -1.20 -1.20	-4.56 -4.87 -5.61	0. 0. 0.	000 000 000 C 9	0.000 0.000 0.000 NEL 47.6
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos:	REMEL 66.51 77.72 82.99 E Levels (with Leq Peak Hou 46	Traffic Flow           -20.47           -37.71           -41.67           out Topo and           Ir         Leq Day           .7           .7	barrier L	1.88 1.93 1.92 attenu	a a vening 44.5	-1.20 -1.20 -1.20	-4.56 -4.87 -5.61 ht 38.5	0. 0. 0. <i>Ldn</i> 46.	000 000 000 000 C 9 4	0.000 0.000 0.000 NEL 47.6 45.4
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks:	REMEL 66.51 77.72 82.99 2 Levels (with Leq Peak Hou 46 40	Traffic Flow           -20.47           -37.71           -41.67           out Topo and           rr         Leq Day           .7           .7           .1	barrier L 45.8 38.0	1.88 1.93 1.92 attenu	2 2 vening 44.5 30.5	-1.20 -1.20 -1.20	-4.56 -4.87 -5.61 nt 38.5 39.2	0. 0. 0. 0. <i>Ldn</i> 46. 45.	000 000 000 000 9 4 6	0.000 0.000 0.000 <u>NEL</u> 47.6 45.4 46.7
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL         66.51           77.72         82.99           e Levels (with Leq Peak Hou         46           40         42           48         48	Traffic Flow           -20.47         -37.71           -41.67         -41.67           out Topo and         Image: Comparison of the second	barrier 45.8 38.0 39.1 47.2	1.88 1.93 1.92 attenu .eq Ev	uation) rening 44.5 30.5 35.7 45.2	-1.20 -1.20 -1.20 <i>Leq Nig</i>	-4.56 -4.87 -5.61 38.5 39.2 40.4 44.2	Ldn 46. 45. 45.	000 000 000 9 4 6 1	0.000 0.000 0.000 NEL 47.6 45.4 46.7 51.4
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise	REMEL         66.51           77.72         82.99           e Levels (with Leq Peak Hou         46           40         42           48         48	Traffic Flow           -20.47           -37.71           -41.67           Out Topo and           Ir           Leq Day           .7           .1           .7           ontour (in feet)	barrier 45.8 38.0 39.1 47.2	1.88 1.93 1.92 attenu .eq Ev	a a constraint of the second s	-1.20 -1.20 -1.20 <i>Leq Nig</i>	-4.56 -4.87 -5.61 38.5 39.2 40.4 44.2	Ldn 46. 45. 46. 51.	000 000 000 9 4 6 1 1	0.000 0.000 0.000 NEL 47.6 45.4 46.7 51.4
VehicleType Autos: Medium Trucks: Heavy Trucks: Unnitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise	REMEL         66.51           77.72         82.99           e Levels (with Leq Peak Hou         46           40         42           48         48	Traffic Flow         -20.47           -37.71         -41.67           out Topo and         r           r         -2.047           .7         .7           .7         .7           .7         .7           .7         .7           .7         .7           .7         .7           .7         .7           .7         .7	barrier 45.8 38.0 39.1 47.2	1.88 1.93 1.92 attenu .eq Ev	ation) rening 44.5 30.5 35.7 45.2	-1.20 -1.20 -1.20 <i>Leq Nig</i>	-4.56 -4.87 -5.61 38.5 39.2 40.4 44.2	Ldn 46. 45. 45.	000 000 000 9 4 6 1 1 55	0.000 0.000 0.000 NEL 47.6 45.4 46.7 51.4

Tuesday, January 21, 2020

Tuesday, January	21,	2020	
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FHWA-RD-77-108 HIGHV	AY NOISE PREDICTION MODEL
Scenario: E+P Road Name: SR-74 Road Segment: n/o Theda St.	Project Name: JS 63 MX Job Number: 12374
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 26,248 vehicles Peak Hour Percentage: 7.71% Peak Hour Volume: 2.024 vehicles	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15
Vehicle Speed: 60 mph	
Near/Far Lane Distance: 48 feet	Vehicle Mix
Site Data	VehicleType Day Evening Night Daily Autos: 77.5% 14.0% 10.5% 92.00%
	Medium Trucks: 48.0% 2.0% 50.0% 3.00%
Barrier Height: 0.0 feet	Heavy Trucks: 48.0% 2.0% 50.0% 5.00%
Barrier Type (0-Wall, 1-Berm): 0.0	Theavy Tracks. 40.0% 2.0% 30.0% 3.007
Centerline Dist. to Barrier: 64.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 64.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2.297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Elevation: 0.0 feet Road Grade: 0.0%	Autos: 59.540
0.070	Medium Trucks: 59.391
Left View: -90.0 degrees Right View: 90.0 degrees	Heavy Trucks: 59.406
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Dista	nce Finite Road Fresnel Barrier Atten Berm Atten
Autos: 73.22 -0.39	-1.24 -1.20 -4.70 0.000 0.00
Medium Trucks: 83.68 -15.25	-1.22 -1.20 -4.88 0.000 0.00
Heavy Trucks: 87.33 -13.04	-1.23 -1.20 -5.31 0.000 0.00
Unmitigated Noise Levels (without Topo and barrier	attenuation)
	eq Evening Leq Night Ldn CNEL
Autos: 70.4 69.6	68.2 62.2 70.7 71.
Medium Trucks: 66.0 63.2	55.4 64.6 70.7 70.
Heavy Trucks: 71.9 69.0	61.2 70.4 76.6 76.
Vehicle Noise: 74.8 72.8	69.2         71.9         78.4         78.
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn: CNEL:	232         500         1,078         2,323

	FHW	A-RD-77-108	HIGH	WAY N	OISE PR	EDICTI	ON MO	DEL							
Scenario: E+P Road Name: SR-7 Road Segment: s/o T					Project Name: JS 63 MX Job Number: 12374										
SITE SPECII	FIC INP	UT DATA			NOISE MODEL INPUTS										
Highway Data				5	Site Conditions (Hard = 10, Soft = 15)										
Average Daily Traffic (	Adt): 29	,426 vehicles	;					Autos:	15						
Peak Hour Percent	age:	7.71%			Med	dium Tru	icks (2 )	Axles):	15						
Peak Hour Volu	ume: 2	2,269 vehicles	;		Hea	avy Truc	ks (3+ )	Axles):	15						
Vehicle Sp	eed:	60 mph			/ehicle N	Niv									
Near/Far Lane Dista	nce:	48 feet		Ľ		cleType		Day	Evening	Night	Daily				
Site Data					VCIII			77.5%							
	laufe to	0.0.6			Me	dium Tr		48.0%							
Barrier He Barrier Type (0-Wall, 1-Be	•	0.0 feet				leavy Tr		48.0%							
Centerline Dist. to Ba		0.0 64.0 feet													
Centerline Dist. to Obse		64.0 feet	1	Noise Source Elevations (in feet)											
Barrier Distance to Obse		0.0 feet				Autos		000							
Observer Height (Above F		5.0 feet				n Trucks		297							
Pad Eleva		0.0 feet			Heav	y Trucks	s: 8.	006	Grade A	djustmen	: 0.0				
Road Eleva		0.0 feet		1	ane Equ	iivalent	Distan	ce (in	feet)						
Road G		0.0%		F		Autos		540							
Left \		-90.0 degree	19		Mediun	n Trucks	s: 59	391							
Right \	/iew:	90.0 degree			Heav	y Trucks	s: 59.	406							
FHWA Noise Model Calcu															
VehicleType REM		Traffic Flow	Dist	tance	Finite I		Fresr		Barrier A		m Atten				
Autos:	73.22	0.11		-1.24		-1.20		-4.70		.000	0.00				
	83.68	-14.76		-1.22		-1.20		-4.88		.000	0.00				
Heavy Trucks:	87.33	-12.54		-1.23	3	-1.20		-5.31	(	.000	0.00				
Unmitigated Noise Levels								1							
	ak Hour			Leq Ev		Leq	Night		Ldn		NEL				
Autos:	70.9		70.1		68.7		62.7		71		71				
Medium Trucks:	66.5		53.7		55.9		65.1			.2	71				
Heavy Trucks:	72.4		69.5		61.7		70.9			.1	77.				
Vehicle Noise:	75.3		73.3		69.7		72.4	1	78	.9	79				
Centerline Distance to No	oise Con	ntour (in feet)	1	70	0.0	07	10.4		0 -0 4		-10.4				
				70 c			dBA	_	60 dBA		dBA				
			Ldn: JFL:	25 25			40 - 0		1,163		506				
		Ch	VEL:	- 25	0	55	52		1,188	2	560				

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: E+P Road Name: SR-74 Road Segment: n/o Ethanac Rd. Project Name: JS 63 MX Job Number: 12374 NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Autos: 15 SITE SPECIFIC INPUT DATA Highway Data Average Daily Traffic (Adt): 28,175 vehicles Peak Hour Percentage: 7.71% Medium Trucks (2 Axles): 15 Peak Hour Volume: 2,172 vehicles Vehicle Speed: 60 mph Heavy Trucks (3+ Axles): 15 Vehicle Mix 
 Utele Mix
 Day
 Evening
 Night
 Daily

 VehicleType
 Day
 Evening
 Night
 Daily

 Autos:
 77.5%
 14.0%
 10.5%
 92.00%

 Medium Trucks:
 48.0%
 2.0%
 50.0%
 3.00%

 Heavy Trucks:
 48.0%
 2.0%
 50.0%
 5.00%
 Near/Far Lane Distance: 48 feet Site Data Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 59.0 feet 59.0 feet Centerline Dist. to Barrier: Centerline Dist. to Observer: Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Barrier Distance to Observer: Observer Height (Above Pad): 0.0 feet 5.0 feet Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet 0.0% Autos: 54.129 Medium Trucks: 53.966 Road Grade: -90.0 degrees 90.0 degrees Left View: Right View: Heavy Trucks: 53.982 FUNA Noise Made Orie

FHWA Noise Mod	el Calculations	5									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresn	el	Barrier Atter	n Berr	m Atten
Autos:	73.22	-0.08		-0.62		-1.20		-4.69	0.00	0	0.000
Medium Trucks:	83.68	-14.95		-0.60		-1.20		-4.88	0.00	0	0.000
Heavy Trucks:	87.33	-12.73		-0.60		-1.20		-5.35	0.00	0	0.000
Unmitigated Noise	e Levels (witho	out Topo and	barri	ier attenu	ation)						
VehicleType	Leq Peak Hou	r Leq Day	/	Leq Eve	ening	Leq	Night		Ldn	CI	IEL
Autos:	71.	3	70.6		69.1		63.1		71.6		72.2
Medium Trucks:	66.	9	64.1		56.3		65.5	i	71.7		71.7
Heavy Trucks:	72.	8	69.9		62.2		71.4		77.5		77.6
Vehicle Noise:	75.	7	73.8		70.1		72.9	)	79.3		79.5
Centerline Distan	ce to Noise Co	ntour (in feet	)								
				70 dE	3A	65	dBA		60 dBA	55	dBA
			Ldn:	247		5	32		1,146	2,4	170
		Ci	NEL:	252		5	44		1,171	2,5	523

	FHV	VA-RD-77-108 H	IGHWA	Y NO	DISE PF	REDICTIO	N MOI	DEL			
Scenari Road Nam Road Segmei		Rd.				Project N Job Nur			MX		
SITE	SPECIFIC IN	PUT DATA				NO	ISE N	IODE	L INPUT	S	
Highway Data				S	ite Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily	, ,							Autos:	15		
	Percentage:	7.71%				dium Truc					
Peak H	our Volume:	2,243 vehicles			He	avy Truck	s (3+ A	(xles):	15		
	hicle Speed:	60 mph		v	ehicle I	Nix					
Near/Far La	ne Distance:	120 feet			Vehi	icleType		Day	Evening	Night	Daily
Site Data						Au	itos:	77.5%	14.0%	10.5%	92.00%
Bai	rier Height:	0.0 feet			Me	edium Tru	cks:	48.0%	2.0%	50.0%	3.00%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks:	48.0%	2.0%	50.0%	5.00%
Centerline Dis	st. to Barrier:	110.0 feet		N	loise So	ource Elev	vations	s (in fe	eet)		
Centerline Dist.		110.0 feet				Autos:	0.0	000	,		
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:	22	297			
Observer Height (	Above Pad):	5.0 feet			Heav	v Trucks:		006	Grade Ad	iustment:	0.0
	ad Elevation:	0.0 feet				,					
	ad Elevation:	0.0 feet		L	ane Equ	uivalent D			leet)		
	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degrees				n Trucks:					
	Right View:	90.0 degrees			Heav	y Trucks:	92.2	244			
FHWA Noise Mode	el Calculation:										
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atten
Autos:	73.22	0.06		4.10		-1.20		-4.78	0.0	000	0.000
Medium Trucks:	83.68	-14.81		4.09		-1.20		-4.88	0.0		0.000
Heavy Trucks:	87.33	-12.59		4.09		-1.20		-5.14	0.0	000	0.000
Unmitigated Noise			arrier a	ttenu	uation)						
	Leq Peak Hou			q Ev	ening	Leq Ni	<u> </u>		Ldn		VEL
Autos:	68		7.2		65.8		59.8		68.2	-	68.9
Medium Trucks:	63		).7		53.0		62.2		68.3		68.3
Heavy Trucks:	69		6.6		58.8		68.0		74.2		74.2
Vehicle Noise:	72	.4 7	).4		66.8		69.5		76.0	)	76.1
Centerline Distance	e to Noise Co	ntour (in feet)									
				70 di		65 dE			60 dBA		dBA
			dn:	275		593			1,278	,	754
		CN	-L:	281	1	606	5		1,306	2,0	313

Tuesday, January 21, 2020

Tuesday, January 21, 2020

FHWA-RD-77-108 HIGHWAY	NOISE PREDICTION MODEL
Scenario: E+P Road Name: SR-74 Road Segment: n/o River Rd.	Project Name: JS 63 MX Job Number: 12374
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 30,159 vehicles	Autos: 15
Peak Hour Percentage: 7.71%	Medium Trucks (2 Axles): 15
Peak Hour Volume: 2,325 vehicles	Heavy Trucks (3+ Axles): 15
Vehicle Speed: 60 mph	Vehicle Mix
Near/Far Lane Distance: 120 feet	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 14.0% 10.5% 92.00%
Barrier Height: 0.0 feet	Medium Trucks: 48.0% 2.0% 50.0% 3.00%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 48.0% 2.0% 50.0% 5.00%
Centerline Dist. to Barrier: 110.0 feet	*
Centerline Dist. to Observer: 110.0 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: 8.006 Grade Adjustment: 0.0
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 92.331
Left View: -90.0 degrees	Medium Trucks: 92.235
Right View: 90.0 degrees	Heavy Trucks: 92.244
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distance	
	.10 -1.20 -4.78 0.000 0.000
	.09 -1.20 -4.88 0.000 0.000
	.09 -1.20 -5.14 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier atte	,
	Evening Leq Night Ldn CNEL
Autos: 68.1 67.4	66.0 59.9 68.4 69.0
Medium Trucks: 63.7 60.9 Heavy Trucks: 69.6 66.8	53.1 62.3 68.5 68.5 59.0 68.2 74.3 74.4
Heavy Trucks:         69.6         66.8           Vehicle Noise:         72.6         70.6	<u>59.0</u> <u>68.2</u> <u>74.3</u> <u>74.4</u> <u>66.9</u> <u>69.7</u> <u>76.1</u> <u>76.1</u>
	00.0 00.1 /0.1 /0.
Centerline Distance to Noise Contour (in feet)	0 dBA 65 dBA 60 dBA 55 dBA
	282 608 1.309 2.821
	288 621 1.337 2.881
CIVEL.	200 021 1,337 2,001

	FHW	A-RD-77-108 H	GHWA	Y NOISE P	REDICTIO	N MOI	DEL						
Scenario: E+ Road Name: SR Road Segment: s/c	-74			Project Name: JS 63 MX Job Number: 12374									
SITE SPEC	IFIC INP	UT DATA			NO	ISE N	IODE		s				
Highway Data				Site Conditions (Hard = 10, Soft = 15)									
Average Daily Traffic	; (Adt): 29	,614 vehicles					Autos:	15					
Peak Hour Perce	ntage:	7.71%		M	edium Truc	ks (2 A	xles):	15					
Peak Hour V	olume: 2	2,283 vehicles		H	eavy Truck	s (3+ A	xles):	15					
Vehicle 3	Speed:	60 mph		Vehicle	Mix								
Near/Far Lane Dis	tance:	120 feet			nicleType		Dav	Evening	Night	Daily			
Site Data							77.5%		10.5%				
	loiabh	0.0 feet		- N	ledium Truc		48.0%		50.0%				
Barrier H Barrier Type (0-Wall, 1-		0.0 reet			Heavy True				50.0%				
Centerline Dist. to E	,	110.0 feet											
Centerline Dist. to Ob		110.0 feet		Noise S	ource Elev			eet)					
Barrier Distance to Ob		0.0 feet			Autos:	0.0							
Observer Height (Above		5.0 feet		Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustmen									
Pad Ele	,	0.0 feet		Hea	vy Trucks:	8.0	006	Grade Ad	justment	: 0.0			
Road Ele	vation:	0.0 feet		Lane Ec	uivalent D	istanc	e (in f	eet)					
Road	Grade:	0.0%			Autos:	92.3	331						
Lef	t View:	-90.0 degrees		Mediu	ım Trucks:	92.2	235						
Righ	t View:	90.0 degrees		Hea	vy Trucks:	92.2	244						
FHWA Noise Model Cal													
		Traffic Flow	Distand		Road	Fresn		Barrier Att		m Atter			
Autos:	73.22	0.14		4.10	-1.20		-4.78		000	0.00			
Medium Trucks:	83.68	-14.73		4.09	-1.20		-4.88		000	0.00			
Heavy Trucks:	87.33	-12.51		4.09	-1.20		-5.14	0.0	000	0.0			
Unmitigated Noise Leve			-	,					-				
	Peak Hour			q Evening	Leq Ni			Ldn		NEL			
Autos:	68.1			65.9		59.9 62.2		68.3	-	68 68			
Medium Trucks:	63.7 69.5			53.0 58.9		62.2		68.4 74.3		68 74			
Heavy Trucks: Vehicle Noise:	72.5			58.5		69.6		74.3		74			
			.5	66.9	,	69.6		76.	1	76			
Centerline Distance to I	voise Con	tour (in feet)		70 dBA	65 dE	24	6	0 dBA	55	dBA			
		La		279	600			1.293		ава 787			
		La	11.	219	000			1,290	Ζ,	101			

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Scena	rio: E+P					Project Na	ame: JS 63	вмх						
	ne: SR-74				Job Number: 12374									
Road Segme	ent: s/o Meado	wbrook Av.												
	SPECIFIC IN	NPUT DATA						EL INPUTS	6					
Highway Data				5	Site Con	ditions (H	ard = 10, S	Soft = 15)						
Average Daily	Traffic (Adt):	33,249 vehicles					Autos	s: 15						
Peak Hou	r Percentage:	7.71%			Me	dium Truck	is (2 Axles	): 15						
Peak I	Hour Volume:	2,564 vehicles			Hea	avy Trucks	(3+ Axles	): 15						
	ehicle Speed:	60 mph		1	/ehicle N	Aix								
Near/Far La	ane Distance:	120 feet		-		cleType	Day	Evening	Night	Daily				
Site Data						Aut	os: 77.5	% 14.0%	10.5%	92.00				
Ba	arrier Height:	0.0 feet			Me	edium Truc	ks: 48.0	% 2.0%	50.0%	3.00				
	Barrier Type (0-Wall, 1-Berm): 0.0						ks: 48.0	% 2.0%	50.0%	5.00				
Centerline D	ist. to Barrier:	110.0 feet			loise So	urce Elev	ations (in	feet)						
Centerline Dist.	to Observer:	110.0 feet		- F	10,00 00	Autos:	0.000							
Barrier Distance	to Observer:	0.0 feet			Modiur	n Trucks:	2.297							
Observer Height	Observer Height (Above Pad): 5.0 feet					y Trucks:	8.006	Grade Adj	ustment	0.0				
F	Pad Elevation:	0.0 feet												
Ro	ad Elevation:	0.0 feet		L	ane Equ		istance (in	i feet)						
	Road Grade:	0.0%				Autos:	92.331							
	Left View:	-90.0 degree				n Trucks:	92.235							
	Right View:	90.0 degree	s		Heav	y Trucks:	92.244							
FHWA Noise Mod	lel Calculation	IS												
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	Barrier Atte	en Ber	m Atter				
Autos.	73.22	0.64		-4.10	)	-1.20	-4.78	3 0.0	00	0.00				
Medium Trucks	83.68			-4.09		-1.20	-4.88			0.00				
Heavy Trucks.	87.33	-12.01		-4.09	)	-1.20	-5.14	¢ 0.0	00	0.00				
Unmitigated Nois														
VehicleType	Leq Peak Ho			Leq Ev	~	Leq Nig		Ldn		VEL				
Autos.			67.8		66.4		60.4	68.8		69				
Medium Trucks			51.3		53.5		62.7	68.9		68				
Heavy Trucks.			67.2		59.4		68.6	74.8		74				
Vehicle Noise.	73	3.0 7	1.0		67.4		70.1	76.6	i	76				
Centerline Distan	ce to Noise C	ontour (in feet)					- 1							
				70 d		65 dB	A	60 dBA		dBA				
			dn:	30	1	649		1.397	3.0	010				
			IFI :	30		663		1.427	- ,	075				

FH	WA-RD-77-108 H	IGHWAY	NOISE PF	REDICT	ION MO	DEL					
Scenario: E+P Road Name: Ethanac R Road Segment: w/o SR-74			Project Name: JS 63 MX Job Number: 12374								
SITE SPECIFIC II	NPUT DATA			N	IOISE N	/IODE	L INPUT	s			
Highway Data			Site Con	ditions	(Hard =	10, So	oft = 15)				
Average Daily Traffic (Adt):	582 vehicles					Autos:	15				
Peak Hour Percentage:	7.71%		Me	dium Tri	ucks (2 A	(xles)	15				
Peak Hour Volume:	45 vehicles		He	avy Truc	cks (3+ A	(xles)	15				
Vehicle Speed:	40 mph		Vehicle I	<i>Aix</i>					-		
Near/Far Lane Distance:	12 feet			cleType		Day	Evening	Night	Daily		
Site Data						75.5%	•	10.5%			
Barrier Height:	0.0 feet		Me	edium Ti	rucks:	48.9%	2.2%	48.9%	6 1.84%		
Barrier Type (0-Wall, 1-Berm):	0.0		F	leavy Ti	rucks:	47.3%	5.4%	47.3%	6 0.74%		
Centerline Dist. to Barrier:	37.0 feet		Noise So	urco El	lovation	r (in f	not)				
Centerline Dist. to Observer:	37.0 feet		10136 30	Auto:		200					
Barrier Distance to Observer:	0.0 feet		Modiu	n Truck		297					
Observer Height (Above Pad):	5.0 feet			y Truck		206	Grade Ac	liustmer	nt: 0.0		
Pad Elevation:	0.0 feet			, ,				juounor			
Road Elevation:	0.0 feet		Lane Equ	livalent	t Distand	ce (in :	feet)				
Road Grade:	0.0%			Auto	s: 36.	851					
Left View:	-90.0 degrees		Mediur	n Truck							
Right View:	90.0 degrees		Heav	y Truck	s: 36.	634					
FHWA Noise Model Calculation	ıs										
VehicleType REMEL	Traffic Flow	Distance			Fresh		Barrier At		erm Atten		
Autos: 66.51	=		88	-1.20		-4.56		000	0.000		
Medium Trucks: 77.72			93	-1.20		-4.87		000	0.000		
Heavy Trucks: 82.99	-36.11	1.	92	-1.20		-5.61	0.	000	0.000		
Unmitigated Noise Levels (with			,								
VehicleType Leq Peak Ho		,	Evening	Leq	Night		Ldn		CNEL		
	2.3 51		50.1		44.1		52.		53.1		
	5.3 43		36.0		44.8		50.		51.0		
,	7.6 44		41.3		45.9		52.		52.2		
Vehicle Noise: 5	4.3 52	.8	50.8		49.8	5	56.	7	57.0		
Centerline Distance to Noise C	ontour (in feet)										
			) dBA		dBA	6	60 dBA	5	5 dBA		
	La CNF		5 5		0		22		48 50		
							23				

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FHWA-RD-77-108 HIGHW	Y NOISE PREDICTION MODEL
Scenario: EA Road Name: SR-74 Road Segment: n/o Theda St.	Project Name: JS 63 MX Job Number: 12374
SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS
Highway Data	Site Conditions (Hard = 10, Soft = 15)
Average Daily Traffic (Adt): 26,841 vehicles Peak Hour Percentage: 7.71% Peak Hour Volume: 2.069 vehicles	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15
Vehicle Speed: 60 mph	
Near/Far Lane Distance: 48 feet	Vehicle Mix
	VehicleType Day Evening Night Daily
Site Data	Autos: 77.5% 14.0% 10.5% 92.00%
Barrier Height: 0.0 feet	Medium Trucks: 48.0% 2.0% 50.0% 3.00%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 48.0% 2.0% 50.0% 5.00%
Centerline Dist. to Barrier: 64.0 feet	Noise Source Elevations (in feet)
Centerline Dist. to Observer: 64.0 feet	Autos: 0.000
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 2,297
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	,
Road Elevation: 0.0 feet	Lane Equivalent Distance (in feet)
Road Grade: 0.0%	Autos: 59.540
Left View: -90.0 degrees Right View: 90.0 degrees	Medium Trucks: 59.391 Heavy Trucks: 59.406
FHWA Noise Model Calculations	
VehicleType REMEL Traffic Flow Distan	ce Finite Road Fresnel Barrier Atten Berm Atten
Autos: 73.22 -0.29	1.24 -1.20 -4.70 0.000 0.000
Medium Trucks: 83.68 -15.16	1.22 -1.20 -4.88 0.000 0.000
Heavy Trucks: 87.33 -12.94	1.23 -1.20 -5.31 0.000 0.000
Unmitigated Noise Levels (without Topo and barrier a	ttenuation)
	q Evening Leq Night Ldn CNEL
Autos: 70.5 69.7	68.3 62.3 70.8 71.4
Medium Trucks: 66.1 63.3	55.5 64.7 70.8 70.9
Heavy Trucks: 72.0 69.1	61.3 70.5 76.7 76.7
Vehicle Noise: 74.9 72.9	69.3         72.0         78.5         78.6
Centerline Distance to Noise Contour (in feet)	
	70 dBA 65 dBA 60 dBA 55 dBA
Ldn:	236 508 1,094 2,357
CNEL:	241 519 1,118 2,408

	FHW.	A-RD-77-108	HIGHV	/AY N	OISE PR	REDICT	ION MO	DEL							
Scenario: EA Road Name: SR- Road Segment: s/o					Project Name: JS 63 MX Job Number: 12374										
SITE SPECI	FIC INF	PUT DATA		NOISE MODEL INPUTS											
Highway Data				S	Site Conditions (Hard = 10, Soft = 15)										
Average Daily Traffic	(Adt): 30	0,093 vehicles						Autos:	15						
Peak Hour Percer	ntage:	7.71%			Med	dium Tr	ucks (2 )	Axles):	15						
Peak Hour Vo	lume: 2	2,320 vehicles			Hea	avy Tru	cks (3+ )	Axles):	15						
Vehicle S	peed:	60 mph			ehicle N	11.v									
Near/Far Lane Dist	ance:	48 feet				leType		Day	Evenir	Mi	ght	Daily			
Site Data					vern			77.5%			9/11 0.5%				
					Mo	dium T		48.0%			0.0%	3.009			
Barrier He		0.0 feet						48.0%			0.0%	5.00%			
Barrier Type (0-Wall, 1-E		0.0				cavy n	uons.	40.07	2.0	/0 01	0.070	0.007			
Centerline Dist. to B		64.0 feet		٨	loise So	urce El	levation	s (in fe	eet)						
Centerline Dist. to Obs		64.0 feet				Auto	s: 0.	000							
Barrier Distance to Obs		0.0 feet			Mediun	n Truck	s: 2.	297							
Observer Height (Above		5.0 feet			Heav	y Truck	s: 8.	006	Grade	Adjust	ment:	0.0			
Pad Elev		0.0 feet			ane Equ	ulu a la n	Distan	oo (in	fa a 4)						
Road Elev		0.0 feet		1	ane Equ				reet)						
Road G		0.0%				Auto		540							
	View:	-90.0 degree			Mediun			391							
Right	View:	90.0 degree	s		Heav	y Truck	s: 59.	406							
FHWA Noise Model Calc					r.										
VehicleType REI		Traffic Flow	Dista		Finite I		Fresr		Barrier		Beri	m Atten			
Autos:	73.22	0.21		-1.24		-1.20		-4.70		0.000		0.00			
Medium Trucks:	83.68	-14.66		-1.22		-1.20		-4.88		0.000		0.00			
Heavy Trucks:	87.33	-12.44		-1.23		-1.20		-5.31		0.000		0.00			
Unmitigated Noise Level															
	eak Hour			eq Ev		Leq	Night		Ldn		CI	IEL			
Autos:	71.0		0.2		68.8		62.8	-		1.2		71.			
Medium Trucks:	66.6		3.7		56.0		65.2			1.3		71.			
Heavy Trucks:	72.5		9.6		61.8		71.0			7.2		77.			
Vehicle Noise:	75.4		3.4		69.8		72.5	5	7	9.0		79.			
Centerline Distance to N	oise Cor	ntour (in feet)						1							
				70 d			dBA	_	60 dBA			dBA			
			.dn:	25			48		1,181			544			
			FL:	26			60		1.206			599			

				VATIN	OISE PI	REDICI		JEL						
Scenario Road Name Road Segmen	: SR-74	Rd.			Project Name: JS 63 MX Job Number: 12374									
SITE S	PECIFIC IN	PUT DATA				Ν	IOISE N	IODE	L INPUTS	5				
Highway Data				5	Site Con	ditions	(Hard =	10, Sc	oft = 15)					
Average Daily T	raffic (Adt): 2	8,804 vehicles					A	Autos:	15					
Peak Hour F	Percentage:	7.71%			Me	dium Tr	ucks (2 A	xles):	15					
Peak Ho	our Volume:	2,221 vehicles			He	avy Tru	cks (3+ A	xles):	15					
Veh	icle Speed:	60 mph		1	/ehicle	Mix								
Near/Far Lan	e Distance:	48 feet		- F		icleType	. 1	Dav	Evening	Night	Daily			
Site Data								77.5%	· ·	10.5%				
Par	ier Heiaht:	0.0 feet			Me	edium T	rucks:	48.0%	2.0%	50.0%	3.00%			
Barrier Type (0-Wa		0.0			ŀ	leavy T	rucks:	48.0%	2.0%	50.0%	5.00%			
Centerline Dis		59.0 feet		L.										
Centerline Dist. to		59.0 feet			voise Sc		levations		eet)					
Barrier Distance to	o Observer:	0.0 feet				Auto m Truck								
Observer Height (Above Pad): 5.0 feet									Crada Adi					
Pad Elevation: 0.0 feet					Heav	ry Truck	S: 8.0	00	Grade Adj	usuneni	. 0.0			
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distanc	e (in i	feet)					
R	oad Grade:	0.0%				Auto	s: 54.1	29						
	Left View:	-90.0 degree	s		Mediu	m Truck	s: 53.9	66						
	Right View:	90.0 degree	s		Heav	ry Truck	s: 53.9	82						
FHWA Noise Mode														
VehicleType	REMEL	Traffic Flow	Dista			Road	Fresne		Barrier Atte		m Atten			
Autos:	73.22	0.02		-0.62	-	-1.20		4.69	0.0		0.00			
Medium Trucks:	83.68	-14.85		-0.60	-	-1.20		4.88	0.0		0.00			
Heavy Trucks:	87.33	-12.63		-0.60	-	-1.20		-5.35	0.0	00	0.00			
Unmitigated Noise														
,1	eq Peak Hour			Leq Ev	·	Leq	Night		Ldn 71.7		NEL			
Autos:	71.		70.6		69.2		63.2		71.7		72.			
Medium Trucks:	67. 72.	-	54.2 70.0		56.4 62.3		65.6 71.5		71.8		71. 77.			
Heavy Trucks: Vehicle Noise:	72.		73.9		70.2		71.5		77.6		79.			
					70.2		13.0		79.4		79.			
Centerline Distance	e to Noise Co	ntour (in feet)		70 0	IRA	65	dBA	F	0 dBA	55	dBA			
			l dn:	25							507			
							40		1.163					

	FHV	VA-RD-77-108	HIGHW	AY N	DISE PF	REDICTIO	N MOE	DEL					
Scenari Road Nam Road Segmer		c Rd.			Project Name: JS 63 MX Job Number: 12374								
SITE	SPECIFIC IN	IPUT DATA				NC	DISE M	ODE	L INPUT	s			
Highway Data				S	ite Con	ditions (H	lard = 1	10, So	ft = 15)				
Average Daily	Traffic (Adt): 2	29,745 vehicles	;				A	utos:	15				
Peak Hour	Percentage:	7.71%			Me	dium Truc	ks (2 A	xles):	15				
Peak H	our Volume:	2,293 vehicles	;		He	avy Truck	s (3+ A	xles):	15				
Vei	hicle Speed:	60 mph		1	ehicle I	liv							
Near/Far Lai	ne Distance:	120 feet				cleType		Dav	Evening	Night	Daily		
Site Data				-	VCIII			77.5%	~	10.59			
Bai	rier Height:	0.0 feet			Me	edium Tru	cks: 4	18.0%	2.0%	50.09	% 3.00%		
Barrier Type (0-W	•	0.0			ŀ	łeavy Tru	cks: 4	48.0%	2.0%	50.09	% 5.00%		
Centerline Dis	st. to Barrier:	110.0 feet		٨	loise So	urce Ele	vations	(in fe	et)				
Centerline Dist.	to Observer:	110.0 feet		Ē		Autos:							
Barrier Distance	to Observer:	0.0 feet			Mediur	n Trucks:							
Observer Height (.	Above Pad):	5.0 feet				v Trucks:			Grade Ad	iustmei	nt: 0.0		
Pa	ad Elevation:	0.0 feet				,							
	ad Elevation:	0.0 feet		L	ane Equ	ivalent E			eet)				
ŀ	Road Grade:	0.0%				Autos:							
	Left View:	-90.0 degree				n Trucks:							
	Right View:	90.0 degree	s		Heav	y Trucks:	92.2	44					
FHWA Noise Mode	el Calculation	s		-									
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fresne	el I	Barrier Att	en Be	erm Atten		
Autos:	73.22	0.16		-4.10		-1.20		4.78		000	0.000		
Medium Trucks:	83.68	-14.71		-4.09		-1.20		4.88		000	0.000		
Heavy Trucks:	87.33	-12.49		-4.09		-1.20	-	5.14	0.0	000	0.000		
Unmitigated Noise	e Levels (with			ttenı	uation)								
	Leq Peak Hou	, ,		eq Ev	ening	Leq N	v		Ldn		CNEL		
Autos:	68		67.3		65.9		59.9		68.3	-	69.0		
Medium Trucks:	63		60.8		53.1		62.3		68.4		68.4		
Heavy Trucks:	69		6.7		58.9		68.1		74.3		74.3		
Vehicle Noise:	72	.5	70.5		66.9		69.6		76.1	1	76.2		
Centerline Distance	e to Noise Co	ontour (in feet)	_										
			ட	70 d		65 dE			0 dBA		5 dBA		
			Ldn:	279	-	602	-		1,297		2,795		
		CI	IEL:	28	5	615	)	1	1,325	-	2,855		

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	FHW	A-RD-77-108 HIG	HWAY I	NOISE PI	REDICTION	N MODEL			
Scenario Road Name Road Segmen					Project Na Job Num	ame: JS 6 aber: 123			
SITE S	PECIFIC INF	UT DATA			NO	ISE MOD	DEL INPUT	s	
Highway Data				Site Con	ditions (H	ard = 10,	Soft = 15)		
Average Daily 1	raffic (Adt): 30	,847 vehicles				Auto	is: 15		
Peak Hour F	Percentage:	7.71%		Me	dium Truck	s (2 Axle	s): 15		
Peak Ho	our Volume: 2	2,378 vehicles		He	avy Trucks	(3+ Axle	s): 15		
Veh	icle Speed:	60 mph	-	Vehicle	Mix				
Near/Far Lan	e Distance:	120 feet	-		icleType	Dav	Evening	Night	Dailu
Site Data				ven	Aut	,		10.5%	Daily 92.00%
				14	Aut edium Truc			50.0%	
	rier Height:	0.0 feet			Heavy Truc			50.0%	
Barrier Type (0-Wa		0.0		,	leavy Huc	NS. 40.0	7/0 2.070	30.070	3.00 %
Centerline Dis		110.0 feet		Noise So	ource Elev	ations (in	feet)		
Centerline Dist. t		110.0 feet			Autos:	0.000			
Barrier Distance t		0.0 feet		Mediu	m Trucks:	2.297			
Observer Height (A	,	5.0 feet		Heav	y Trucks:	8.006	Grade Ad	ljustment	0.0
	d Elevation: d Elevation:	0.0 feet	-	Lano Ea	uivalent D	istanco (i	n foot)		
	a Elevation: Road Grade:	0.0 feet 0.0%	-	Lane Ly	Autos:	92.331	n leel)		
	Left View:			Modiu	m Trucks:	92.235			
	Right View:	-90.0 degrees 90.0 degrees			y Trucks:	92.235			
FHWA Noise Mode	I Calculations								
VehicleType	REMEL	Traffic Flow D	istance	Finite	Road	Fresnel	Barrier Att	ten Ber	m Atten
Autos:	73.22	0.31	-4.1	0	-1.20	-4.7	8 0.0	000	0.000
Medium Trucks:	83.68	-14.55	-4.0	9	-1.20	-4.8	8 0.0	000	0.000
Heavy Trucks:	87.33	-12.33	-4.0	19	-1.20	-5.1	4 0.0	000	0.000
Unmitigated Noise			rier atter	nuation)					
	Leq Peak Hour			vening	Leq Nig		Ldn		NEL
Autos:	68.2			66.1		60.0	68.		69.1
Medium Trucks:	63.8			53.2		62.4	68.		68.6
Heavy Trucks:	69.7			59.1		68.3	74.4		74.5
Vehicle Noise:	72.7			67.0		69.8	76.	2	76.4
Centerline Distance	e to Noise Cor	ntour (in feet)						1	
				dBA	65 dB.	A	60 dBA		dBA
		Ldn:		86	617		1,329		863
		CNEL:	2	93	630		1,358	2,	925

I	FHWA	-RD-77-108 HI	GHV	NAY N	OISE PR	REDICT	ION MO	DEL			
Scenario: EA Road Name: SR-74							Name:		MX		
Road Name: SR-74 Road Segment: s/o Rive	r Rd					JOD IN	lumber:	12374			
5		UT DATA						1005	L INPUT	<u> </u>	
SITE SPECIFIC Highway Data		UT DATA		5	Site Con					3	
Average Daily Traffic (Adt	1. 20	286 vohiclos						Autos:	15		
Peak Hour Percentage		7.71%			Ma	dium Tr	ucks (2 /				
Peak Hour Volume		335 vehicles					cks (3+ /				
Vehicle Speed		60 mph					5/10 [ 01 7	5400).	10		
Near/Far Lane Distance		120 feet		1	/ehicle N				1		
		120 1000			Vehi	cleType		Day	Evening	Night	Daily
Site Data							Autos:	77.5%			92.00
Barrier Heigh		0.0 feet				dium T		48.0%		50.0%	
Barrier Type (0-Wall, 1-Berm		0.0			H	ieavy T	rucks:	48.0%	2.0%	50.0%	5.00
Centerline Dist. to Barrie		110.0 feet		1	Voise So	urce E	evation	s (in fe	eet)		
Centerline Dist. to Observe		110.0 feet		Ē		Auto		000	/		
Barrier Distance to Observe		0.0 feet			Mediur	n Truck	s: 2.	297			
Observer Height (Above Pad	·	5.0 feet			Heav	y Truck	s: 8.	006	Grade Ad	ljustment	: 0.0
Pad Elevation		0.0 feet		-							
Road Elevation		0.0 feet		1	ane Equ				reet)		
Road Grade		0.0%				Auto		331			
Left Viev		-90.0 degrees			Mediur			235			
Right Viev	V:	90.0 degrees			Heav	y Truck	s: 92.	244			
FHWA Noise Model Calculat											
VehicleType REMEL			Dista	ance	Finite		Fresr		Barrier At		m Atter
	.22	0.23		-4.10		-1.20		-4.78		000	0.00
Medium Trucks: 83		-14.63		-4.09		-1.20		-4.88		000	0.00
Heavy Trucks: 87	.33	-12.41		-4.09	9	-1.20		-5.14	0.	000	0.00
Unmitigated Noise Levels (w			_								
VehicleType Leq Peak		Leq Day		Leq Ev		Leq	Night		Ldn		NEL
Autos:	68.2	67			66.0		60.0		68.		69
Medium Trucks:	63.8	60	-		53.1		62.3		68.	-	68
Heavy Trucks:	69.6	66			59.0		68.2		74.		74
Vehicle Noise:	72.6	70	6		67.0		69.7	7	76.	2	76
Centerline Distance to Noise	Cont	tour (in feet)	-					_		_	
			L	70 c			dBA		60 dBA		dBA
		Ld		28			09		1,313		829
		CNE	L:	28	9	6	23		1,341	2.	890

Tuesday, January 21, 2020

Scenario: EA						Project I	Vame: J	S 63	MX			
Road Name: SR-74							mber: 1					
Road Segment: s/o Mea	dowbi	rook Av.										
SITE SPECIFIC	INP	UT DATA								s		
Highway Data					Site Con	ditions (	Hard =	10, So	oft = 15)			
Average Daily Traffic (Adt	): 34,	052 vehicles					A	Autos:	15			
Peak Hour Percentage	e: 7	7.71%			Mee	dium Tru	cks (2 A	xles):	15			
Peak Hour Volume	e: 2,	625 vehicles			Hea	avy Truc	ks (3+ A	xles):	15			
Vehicle Speed	1:	60 mph			Vehicle I	Niv						
Near/Far Lane Distance	ə:	120 feet				cleType		Day	Evening	Nigh	t	Daily
Site Data					1011			77.5%		10.5		92.009
		0.0.6			Me	edium Tr		48.0%		50.0		3.00%
Barrier Heigh Barrier Type (0-Wall, 1-Berm		0.0 feet 0.0				leavy Tr		48.0%		50.0		5.00%
Centerline Dist. to Barrie		0.0 110.0 feet								00.0		0.007
Centerline Dist. to Barrie Centerline Dist. to Observe		110.0 feet			Noise So			in fe	eet)			
Barrier Distance to Observe		0.0 feet				Autos	: 0.0	00				
Observer Height (Above Pad		5.0 feet				n Trucks		97				
Pad Flevation		0.0 feet			Heav	y Trucks	: 8.0	06	Grade Ad	justme	ent: (	J.O
Road Elevation		0.0 feet		F	Lane Equ	uivalent	Distanc	e (in	feet)			
Road Elevation Road Grade		0.0 Teet		F	Lane Ly	Autos						
Road Grade					Madium	n Trucks						
		-90.0 degrees				y Trucks						
Right Viev	V:	90.0 degrees			neav	y TTUCKS	. 92.2	44				
FHWA Noise Model Calculat												
VehicleType REMEL		raffic Flow	Dist	tance	Finite		Fresne		Barrier Att		3erm	Atten
Autos: 73.		0.74		-4.1	-	-1.20		4.78		000		0.00
Medium Trucks: 83.		-14.12		-4.0	-	-1.20		4.88		000		0.00
Heavy Trucks: 87.	33	-11.91		-4.0	19	-1.20		5.14	0.0	000		0.00
Unmitigated Noise Levels (w			arrie	er atter	nuation)							
VehicleType Leq Peak I		Leq Day		Leq E	vening	Leq I	•		Ldn		CNE	
Autos:	68.7		7.9		66.5		60.5		68.9			69.
Medium Trucks:	64.3		1.4		53.6		62.8		69.0			69.
Heavy Trucks:	70.1		7.3		59.5		68.7		74.9			74.
Vehicle Noise:	73.1	7	1.1		67.5		70.2		76.7	7		76.
Centerline Distance to Noise	Con	tour (in feet)									-	
					dBA	65 a			60 dBA		55 di	
			dn:	2	06	65	o —		1.420		3.05	58 -
		L	un.	3	00	00	9		1,420		0,00	

	FHV	VA-RD-77-108 H	IIGHW/	AY N	OISE PR	EDICT	ON MO	DEL			
Scenari Road Nam Road Segmer	e: Ethanac Rd	L				Project Job N	Name: umber:				
SITE	SPECIFIC IN	PUT DATA				N	OISE	MODE	L INPUT	s	
Highway Data				5	Site Cond	ditions	(Hard =	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	167 vehicles						Autos.	: 15		
Peak Hour	Percentage:	7.71%			Med	lium Tri	ıcks (2	Axles).	: 15		
Peak H	our Volume:	13 vehicles			Hea	avy Truc	:ks (3+	Axles).	: 15		
Vei	hicle Speed:	40 mph			(-1-1-1- A						
Near/Far Lai	ne Distance:	12 feet		-	Vehicle N	iix cleType	1	Day	Evening	Nigh	Daily
Site Data					venio		Autos:	75.5%	~	10.5	
				_	140	/ dium Ti		48.9%		48.9	
	rier Height:	0.0 feet				leavy Ti		40.97		40.9	
Barrier Type (0-W	. ,	0.0			п	eavy n	UCKS.	47.37	0 0.470	47.3	70 0.745
Centerline Dis		37.0 feet		1	Voise So	urce El	evatior	ns (in f	eet)		
Centerline Dist.		37.0 feet				Auto	s: 0	.000			
Barrier Distance		0.0 feet			Mediun	n Truck	s: 2	.297			
Observer Height (	,	5.0 feet			Heav	/ Truck	s: 8	.006	Grade Ad	ljustme	nt: 0.0
	ad Elevation:	0.0 feet			Lane Equ		Distan	()	64		
	ad Elevation:	0.0 feet		-	ane Equ				reet)		
F	Road Grade:	0.0%				Auto		.851			
	Left View:	-90.0 degrees			Mediun			.610			
	Right View:	90.0 degrees			Heav	/ Truck	s: 36	.634			
FHWA Noise Mode	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Distan	ice	Finite I	Road	Fres	nel	Barrier At	ten E	erm Atten
Autos:	66.51	-20.34		1.88	3	-1.20		-4.56	0.	000	0.00
Medium Trucks:	77.72	-37.58		1.93	3	-1.20		-4.87	0.	000	0.00
Heavy Trucks:	82.99	-41.54		1.92	2	-1.20		-5.61	0.	000	0.00
Unmitigated Noise	Levels (with	out Topo and b	arrier a	tten	uation)						
VehicleType	Leq Peak Hou	r Leq Day	Le	eq Ev	/ening	Leq	Night		Ldn		CNEL
Autos:	46	.9 4	5.0		44.7		38.	6	47.	1	47.
Medium Trucks:	40	.9 3	3.1		30.6		39.	3	45.	5	45.
Heavy Trucks:	42	.2 3	9.3		35.9		40.	5	46.	7	46.
Vehicle Noise:	48	.9 4	7.4		45.3		44.	3	51.	3	51.
Centerline Distanc	e to Noise Co	ntour (in feet)									
		-		70 c	1BA	65	dBA		60 dBA	1	55 dBA
		L	dn:	2			1		10		21
		CN	EL:	2	2	;	5		10		22

	FHW	A-RD-77-108 HIG	HWAY	NOISE PI	REDICTI	ON MOI	DEL			
Scenari Road Nam Road Segmer		t.			Project Job Ni	Name: . umber: 1		мх		
SITE S	SPECIFIC IN	PUT DATA			N	OISE N	IODE	L INPUTS	5	
Highway Data				Site Con	ditions (	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 2	7,030 vehicles					Autos:	15		
Peak Hour	Percentage:	7.71%		Me	dium Tru	icks (2 A	xles):	15		
Peak H	our Volume:	2,084 vehicles		He	avy Truc	ks (3+ A	xles):	15		
Vel	nicle Speed:	60 mph	ŀ	Vehicle	Miv					
Near/Far Lar	ne Distance:	48 feet	-		icleType		Dav	Evening	Night	Daily
Site Data				ven			Day 77.5%	0	10.5%	
					edium Tr		48.0%		50.0%	
	rier Height:	0.0 feet			Heavy Tr		48.0%		50.0%	
Barrier Type (0-W		0.0			icavy II	uchs.	40.070	2.070	30.070	3.00 /
Centerline Dis		64.0 feet	ſ	Noise Se	ource Ele	evations	s (in fe	et)		
Centerline Dist. I		64.0 feet	ſ		Autos	a: 0.0	000			
Barrier Distance		0.0 feet		Mediu	m Trucks	: 2.2	297			
Observer Height (	,	5.0 feet		Hear	/y Trucks	s: 8.0	006	Grade Adj	ustment	: 0.0
	d Elevation: d Elevation:	0.0 feet	-	Lane Eq	uivalont	Distanc	o (in f	(aat)		
	la Elevation: Road Grade:	0.0 feet	ŀ	Lane Ly	Autos			eel)		
F	l eft View:	0.0%		Modiu	m Trucks					
	Right View:	-90.0 degrees 90.0 degrees			/y Trucks					
FHWA Noise Mode	l Calculations									
VehicleType	REMEL	Traffic Flow D	istance	Finite	Road	Fresn	el	Barrier Atte	en Ber	m Atten
Autos:	73.22	-0.26	-1.2	24	-1.20		-4.70	0.0	00	0.000
Medium Trucks:	83.68	-15.13	-1.2	22	-1.20		-4.88	0.0	00	0.000
Heavy Trucks:	87.33	-12.91	-1.2		-1.20		-5.31	0.0	00	0.000
Unmitigated Noise			1							
	Leq Peak Hour			ening	Leq I			Ldn		NEL
Autos:	70.			68.3		62.3		70.8		71.4
Medium Trucks:	66.			55.5		64.7		70.9		70.9
Heavy Trucks:	72.0			61.4		70.6		76.7		76.8
Vehicle Noise:	74.9		)	69.3		72.1		78.5	)	78.7
Centerline Distanc	e to Noise Col	ntour (in feet)	70	dBA	65 0		6	0 dBA	55	dBA
		Ldn		37	51			1.099		368
		CNFL		37 42	52	-		1,099		300 419
		CNEL	. 2	42	52			1,125	Ζ,	413

F	HWA	-RD-77-108	HIGH	HWAY N	OISE PR	EDICTI	ON MC	DEL			
Scenario: EAP Road Name: SR-74 Road Segment: s/o Theo	la St.					Project Job N	Name: umber:				
SITE SPECIFIC	INP	UT DATA				N	OISE	MODE	L INPUT	'S	
Highway Data				5	Site Cond	ditions	(Hard =	= 10, So	oft = 15)		
Average Daily Traffic (Adt)	: 30,	303 vehicle	s					Autos:	15		
Peak Hour Percentage	e 7	7.71%			Med	lium Tru	ıcks (2	Axles):	15		
Peak Hour Volume	: 2,	336 vehicle	s		Hea	avy Truc	:ks (3+	Axles):	15		
Vehicle Speed	l:	60 mph			Vehicle N	liv					
Near/Far Lane Distance	e:	48 feet		P		cleType		Day	Evening	Night	Daily
Site Data					VCIII		lutos:	77.5%	•		
		0.0 feet			Me	, dium Ti		48.0%			
Barrier Height Barrier Type (0-Wall, 1-Berm		0.0 teet				leavy Tr		48.0%			
Centerline Dist. to Barrie		0.0 64.0 feet									
Centerline Dist. to Observe		64.0 feet		1	Voise So				eet)		
Barrier Distance to Observe		0.0 feet				Autos		.000			
Observer Height (Above Pad		5.0 feet				n Trucks		.297			
Pad Elevation		0.0 feet			Heav	7 Trucks	s: 8	.006	Grade A	djustmen	: 0.0
Road Elevation	 	0.0 feet		L	ane Equ	ivalent	Distan	ce (in	feet)		
Road Grade		0.0%				Autos	s: 59	.540			
Left View	<i>.</i>	-90.0 degree	es		Mediun	n Trucks	s: 59	.391			
Right View		90.0 degree			Heav	7 Truck	s: 59	.406			
FHWA Noise Model Calculati	ons										
VehicleType REMEL	_	raffic Flow	Dis	stance	Finite I		Fres		Barrier At		m Atten
Autos: 73.		0.24		-1.24		-1.20		-4.70		.000	0.00
Medium Trucks: 83.		-14.63		-1.22		-1.20		-4.88		.000	0.00
Heavy Trucks: 87.		-12.41		-1.23		-1.20		-5.31	0.	.000	0.00
Unmitigated Noise Levels (w								-		-	
VehicleType Leq Peak H		Leq Day		Leq Ev		Leq	Night		Ldn		NEL
Autos: Medium Trucks:	71.0 66.6		70.2 63.8		68.8 56.0		62. 65.		71. 71		71. 71.
	72.5		63.8 69.6		56.0 61.9		65. 71.	-	71.		71.
Heavy Trucks:								· ·		-	
Vehicle Noise:	75.4		73.5		69.8		72.	6	79	.0	79.
Centerline Distance to Noise	Cont	our (in teet	,	70 c	IRA	65	dBA		60 dBA	55	dBA
			I dn:	25			51		1.186		556

Tuesday, January 21, 2020

	FHV	VA-RD-77-108	HIGHW	AY N	OISE PF	REDICTI		∃L			
Scenario							Name: JS				
Road Name						Job N	umber: 12	374			
Road Segment	: n/o Ethana	cRd.									
	PECIFIC IN	IPUT DATA						DDEL INPU	TS		
Highway Data				S	Site Con	ditions	(Hard = 1	0, Soft = 15)			
Average Daily T	, ,							itos: 15			
Peak Hour F	Percentage:	7.71%					icks (2 Ax	,			
Peak Ho	ur Volume:	2,237 vehicles			He	avy Truc	:ks (3+ Ax	<i>les):</i> 15			
	icle Speed:	60 mph		v	/ehicle I	<i>lix</i>					
Near/Far Lan	e Distance:	48 feet		F		cleType	D	ay Evening	a Ni	ght	Daily
Site Data							utos: 7	7.5% 14.0%	6 1	0.5%	92.00%
Barr	ier Heiaht:	0.0 feet			Me	edium Tr	ucks: 48	3.0% 2.0%	6 5	0.0%	3.00%
Barrier Type (0-Wa		0.0			ŀ	leavy Tr	ucks: 48	3.0% 2.0%	6 5	0.0%	5.00%
Centerline Dist	. ,	59.0 feet		-							
Centerline Dist. to		59.0 feet		^	loise Sc		evations	,			
Barrier Distance to	Observer:	0.0 feet				Autos		-			
Observer Height (A		5.0 feet				n Trucks					
0 1	d Flevation:	0.0 feet			Heav	y Trucks	8: 8.00	6 Grade A	lajust	ment:	0.0
Road	d Elevation:	0.0 feet		L	ane Equ	ıivalent	Distance	(in feet)			
R	oad Grade:	0.0%				Autos	: 54.12	9			
	Left View:	-90.0 degree	s		Mediur	n Trucks	: 53.96	6			
	Right View:	90.0 degree			Heav	y Trucks	53.98	12			
FHWA Noise Model	Calculation	s									
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite	Road	Fresnel	Barrier A	Atten	Bern	n Atten
Autos:	73.22	0.05		-0.62	2	-1.20	-4	.69 (	0.000		0.00
Medium Trucks:	83.68	-14.82		-0.60	)	-1.20	-4	.88	0.000		0.00
Heavy Trucks:	87.33	-12.60		-0.60	)	-1.20	-5	i.35 (	0.000		0.00
Unmitigated Noise			barrier a	attenu	uation)						
	.eq Peak Hou			eq Ev	ening	Leq	Vight	Ldn		CN	
Autos:	71		0.7		69.3		63.2	-	1.7		72.3
Medium Trucks:	67		64.2		56.4		65.6		1.8		71.
Heavy Trucks:	72	-	0.1		62.3		71.5		7.7		77.
Vehicle Noise:	75	.9 7	3.9		70.2		73.0	7	9.5		79.6
Centerline Distance	e to Noise Co	ontour (in feet)	1				I				
				70 d		65 0		60 dBA		55 a	
			dn:					1.169		2.5	19
		-	IFL:	25 25	-	54 5f		1,109		2,5	

	FHW	/A-RD-77-108 I	ligh	WAY	IOISE PE	REDICTIC	N MC	DEL			
Scenari Road Nam Road Segmer		Rd.				Project N Job Nu			MX		
	SPECIFIC IN	PUT DATA							L INPUT	s	
Highway Data					Site Con	ditions (F	lard =	: 10, So	oft = 15)		
Average Daily	Traffic (Adt): 2	9,955 vehicles						Autos:	15		
Peak Hour	Percentage:	7.71%			Me	dium Truc	:ks (2	Axles):	15		
Peak H	our Volume:	2,310 vehicles			He	avy Truck	's (3+	Axles):	15		
Vel	hicle Speed:	60 mph		F	Vehicle I	Nix					
Near/Far Lar	ne Distance:	120 feet		-		icleType		Day	Evening	Night	Daily
Site Data						AL	itos:	77.5%	14.0%	10.5%	92.009
Rar	rier Heiaht:	0.0 feet			Me	edium Tru	cks:	48.0%	2.0%	50.0%	3.00%
Barrier Type (0-W	all, 1-Berm):	0.0			ŀ	leavy Tru	cks:	48.0%	2.0%	50.0%	5.00%
Centerline Dis		110.0 feet			Noise Sc	ource Ele	vation	is (in fe	eet)		
Centerline Dist.		110.0 feet				Autos:	0.	.000			
Barrier Distance		0.0 feet			Mediur	n Trucks:	2	297			
Observer Height (J	,	5.0 feet			Heav	v Trucks:	8	.006	Grade Ad	ljustment	t: 0.0
	d Elevation:	0.0 feet		-				()	6		
	d Elevation:	0.0 feet		-	Lane Equ	uivalent L			reet)		
ŀ	Road Grade:	0.0%				Autos:		.331			
	Left View: Right View:	-90.0 degrees 90.0 degrees				n Trucks: y Trucks:		.235 .244			
FHWA Noise Mode	Calculations	1									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite	Road	Fres	nel	Barrier At	ten Bei	rm Atten
Autos:	73.22	0.19		-4.1	0	-1.20		-4.78	0.	000	0.00
Medium Trucks:	83.68	-14.68		-4.0	9	-1.20		-4.88	0.	000	0.00
Heavy Trucks:	87.33	-12.46		-4.0	9	-1.20		-5.14	0.	000	0.00
Unmitigated Noise			arrie		· · ·						
	Leq Peak Hou	1 1		Leq E	vening	Leq N	<u> </u>		Ldn		NEL
Autos:	68.		7.3		65.9		59.		68.		69.
Medium Trucks:	63.		0.9		53.1		62.		68.		68.
Heavy Trucks:	69.		6.7		58.9		68.		74.		74.
Vehicle Noise:	72.		0.5		66.9		69.	ь	76.	1	76.
Centerline Distanc	e to Noise Co	ntour (in feet)		70	dBA	65 dl	34		60 dBA	55	i dBA
		1	dn:		31	605			1.303		.808
		CN		-	37	618			1,303		.868
		0.1		20		510	-		.,	2,	

Tuesday, January 21, 2020

	FHWA-F	RD-77-108 HIG	HWAY	NOISE PR	REDICTIO	N MODEL		
Scenario: EAP Road Name: SR-7 Road Segment: n/o R						ame: JS 63 nber: 12374		
SITE SPECIF	IC INPU	Γ DATA			NO	ISE MODI	EL INPUTS	
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)	
Average Daily Traffic ()	Adt): 31,08	57 vehicles				Autos	: 15	
Peak Hour Percent	age: 7.1	71%		Me	dium Truck	s (2 Axles)	: 15	
Peak Hour Volu	ime: 2,39	94 vehicles		He	avy Trucks	(3+ Axles)	: 15	
Vehicle Sp	eed: 6	60 mph	-	Vehicle I	Miy			
Near/Far Lane Dista	nce: 12	20 feet	F		icleType	Dav	Evening	Night Daily
Site Data				Ven	Aut		•	10.5% 92.00%
	-	0 0 64		Me	edium Truc			50.0% 3.00%
Barrier Hei		0.0 feet			Heavy Truc			50.0% 5.00%
Barrier Type (0-Wall, 1-Be Centerline Dist. to Ba		0.0 feet						
Centerline Dist. to Obse		0.0 feet		Noise So		ations (in i	'eet)	
Barrier Distance to Obse		0.0 feet			Autos:	0.000		
Observer Height (Above F		5.0 feet			m Trucks:	2.297		
Pad Fleva	'	0.0 feet		Heav	y Trucks:	8.006	Grade Adju	stment: 0.0
Road Eleva		0.0 feet		Lane Eq	uivalent D	istance (in	feet)	
Road Gr	ade:	0.0%	-		Autos:	92.331		
Left V	'iew: -9	0.0 degrees		Mediu	m Trucks:	92.235		
Right V		0.0 degrees		Heav	y Trucks:	92.244		
FHWA Noise Model Calcu	lations							
VehicleType REM	EL Tra	ffic Flow D	listance	Finite	Road	Fresnel	Barrier Atter	n Berm Atten
	73.22	0.34	-4.1		-1.20	-4.78		
	83.68	-14.52	-4.0		-1.20	-4.88		
Heavy Trucks:	87.33	-12.31	-4.0	09	-1.20	-5.14	0.00	0.00
Unmitigated Noise Levels				<i></i>				
	ak Hour	Leq Day		vening	Leq Nig		Ldn	CNEL
Autos:	68.3	67.5		66.1		60.1	68.5	69.
Medium Trucks:	63.9	61.0		53.2		62.4	68.6	68.
Heavy Trucks:	69.7	66.9		59.1		68.3	74.5	74.
Vehicle Noise:	72.7	70.7		67.1		69.8	76.3	76.
Centerline Distance to No	ise Conto	ur (in feet)	70	dDA	65 -10	4	60 dBA	EE dDA
		Ldn.		dBA 88	65 dB 620	м	60 dBA 1.335	55 dBA 2.876
		CNEL:		:88 :94	633		1,335	2,876
		UNEL.	. 2		033		1,004	2,550

F	HWA-	RD-77-108 HI	GHV	NAY N	OISE PF	REDICTIO	N MO	DEL			
Scenario: EAP Road Name: SR-74						Project N Job Nur			МХ		
Road Segment: s/o Rive	r Rd.										
SITE SPECIFIC	INPU	T DATA							L INPUT	'S	
Highway Data				S	ite Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily Traffic (Adt)	): 30,4	96 vehicles						Autos:	15		
Peak Hour Percentage	e: 7.	.71%			Me	dium Truc	ks (2 A	Axles):	15		
Peak Hour Volume	e: 2,3	51 vehicles			He	avy Truck	s (3+ A	Axles):	15		
Vehicle Speed	1:	60 mph		L	ehicle l	Aix					
Near/Far Lane Distance	e: 1	20 feet		- F		cleType		Dav	Evening	Night	Daily
Site Data								77.5%			92.00
Barrier Height	¢.	0.0 feet			Me	edium True	cks:	48.0%	2.0%	50.0%	3.009
Barrier Type (0-Wall, 1-Berm		0.0			F	leavy Truc	cks:	48.0%	2.0%	50.0%	5.00
Centerline Dist. to Barrie		10.0 feet									
Centerline Dist, to Observe		10.0 feet		٨	loise So	urce Elev			eet)		
Barrier Distance to Observe		0.0 feet				Autos:		000			
Observer Height (Above Pad		5.0 feet				n Trucks:		297	0	E	
Pad Elevation		0.0 feet			Heav	y Trucks:	8.0	006	Grade Ad	ijustment	: 0.0
Road Elevation	n:	0.0 feet		L	ane Equ	ivalent D	istan	ce (in i	feet)		
Road Grade	ə:	0.0%				Autos:	92.	331			
Left View	v: -9	0.0 degrees			Mediur	n Trucks:	92.	235			
Right View	v: 9	0.0 degrees			Heav	y Trucks:	92.	244			
FHWA Noise Model Calculati				1							
VehicleType REMEL			Dista	ance	Finite		Fresn		Barrier At		m Atter
Autos: 73.		0.26		-4.10		-1.20		-4.78		000	0.00
Medium Trucks: 83.		-14.60		-4.09		-1.20		-4.88		000	0.00
Heavy Trucks: 87.	33	-12.38		-4.09		-1.20		-5.14	0.	000	0.00
Unmitigated Noise Levels (w			-							T	
VehicleType Leq Peak H		Leq Day		Leq Ev		Leq Ni			Ldn		NEL
Autos:	68.2	67			66.0		60.0		68.		69
Medium Trucks:	63.8	60			53.2		62.4		68.		68
Heavy Trucks:	69.6	66			59.0		68.2		74.		74
Vehicle Noise:	72.6	70	.6		67.0		69.7	·	76.	2	76
Centerline Distance to Noise	Conto	our (in feet)	-	=0	-	05.15					
			L	70 d		65 dE			0 dBA		dBA
		Ld		28		612			1,319		842
		CNE	L:	29	υ	625			1,347	2.	903

Tuesday, January 21, 2020

		VA-RD-77-108									
Scenario:							Vame: JS				
Road Name:						JOD INL	mber: 12	374			
Road Segment:	s/o Meado	NDFOOK AV.									
	ECIFIC IN	IPUT DATA						DEL INPU			
Highway Data				s	Site Con	ditions (		), Soft = 15)			
Average Daily Tra	ffic (Adt):	34,241 vehicles						tos: 15			
Peak Hour Pe	rcentage:	7.71%					cks (2 Axl	,			
Peak Hour	r Volume:	2,640 vehicles			Hea	avy Truc	ks (3+ Axl	es): 15			
Vehici	le Speed:	60 mph		V	/ehicle N	<i>li</i> y					
Near/Far Lane	Distance:	120 feet		-		cleType	Dá	ay Evenin	a Ni	ght	Daily
Site Data								.5% 14.0	· ·	~	92.00
Barria	r Heiaht:	0.0 feet			Me	dium Tr	ucks: 48	.0% 2.0	% 50	0.0%	3.009
Barrier Type (0-Wall,		0.0 reet			F	leavy Tr	icks: 48	.0% 2.0		0.0%	5.009
Centerline Dist. t	,	110.0 feet									
Centerline Dist. to (		110.0 feet		۸	loise So		vations (	,			
Barrier Distance to (		0.0 feet				Autos		-			
Observer Height (Ab		5.0 feet				n Trucks		-			
<b>U</b> 1	Elevation:	0.0 feet			Heav	y Trucks	: 8.00	6 Grade	Adjust	ment:	0.0
	Elevation:	0.0 feet		L	ane Equ	iivalent	Distance	(in feet)			
	ad Grade:	0.0%		-		Autos		,			
	eft View:	-90.0 degree	e		Mediur	n Trucks					
-	ight View:	90.0 degree				y Trucks		-			
	•	•	-				-				
FHWA Noise Model C	Calculation REMEL	s Traffic Flow	Dista		Finite	Dood	Fresnel	Barrier J	14on	Born	n Atter
VehicleType Autos:	73.22	0.77	Dista	-4.10		-1.20			4 <i>πen</i> 0.000	Bern	0.00
Medium Trucks:	83.68			-4.10		-1.20			0.000		0.00
Heavy Trucks:	87.33	-14.10		-4.09		-1.20			0.000		0.00
						-1.20	-0.	. 14	0.000		0.00
Unmitigated Noise Le			-								
<i>,</i>	q Peak Hou			.eq Ev	ening	Leq I	0	Ldn		CN	
Autos:	68		57.9		66.5		60.5	-	8.9		69.
Medium Trucks:	64		61.4		53.7		62.9	-	9.0		69.
Heavy Trucks:	70		57.3		59.5		68.7		4.9		74.
Vehicle Noise:	73	.1 1	71.1		67.5		70.2	7	6.7		76
Centerline Distance t	o Noise Co	ontour (in feet)									
				70 d	IBA	65 a	BA	60 dBA		55 a	<i>iBA</i>
			dn: IFI :	30		66 67		1,425 1,456		3,0 3,1	

	FHV	VA-RD-77-108	HIGH	WAY N	IOISE PR	EDICTIC					
Scenari Road Nam Road Segmei	e: Ethanac Ro	i.				Project N Job Nu			MX		
SITE	SPECIFIC IN	IPUT DATA				NC	DISE N	<b>IODE</b>	L INPUT	s	
Highway Data					Site Cond	ditions (I	Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	587 vehicles	6					Autos:	15		
Peak Hour	Percentage:	7.71%			Med	lium Truc	cks (2 A	Axles):	15		
Peak H	our Volume:	45 vehicles	3		Hea	avy Truck	(3+ A	Axles):	15		
Ve	hicle Speed:	40 mph		-	Vehicle N	11					
Near/Far La	ne Distance:	12 feet		-		lix cleType		Day	Evening	Night	Daily
Site Data					Vern			75.5%	•	10.5%	
					Mo	dium Tru		48.9%		48.9%	
	rier Height:	0.0 feet				leavy Tru		40.9%		40.97	
Barrier Type (0-W	. ,	0.0				eavy IIu	1043.	47.370	0 0.470	47.37	0 0.747
Centerline Dis		37.0 feet			Noise So	urce Ele	vation	s (in fe	eet)		
Centerline Dist.		37.0 feet				Autos:	0.0	000			
Barrier Distance		0.0 feet			Mediun	n Trucks:	2.2	297			
Observer Height (	,	5.0 feet			Heav	Trucks:	8.0	006	Grade Ad	justmer	nt: 0.0
	ad Elevation:	0.0 feet		H							
	ad Elevation:	0.0 feet			Lane Equ				reet)		
1	Road Grade:	0.0%				Autos:					
	Left View:	-90.0 degree				n Trucks:					
	Right View:	90.0 degree	es		Heav	v Trucks:	36.	634			
FHWA Noise Mode	el Calculation	s									
FHWA Noise Mode VehicleType	el Calculation REMEL	s Traffic Flow	Dis	tance	Finite	Road	Fresh	el	Barrier Att	en Be	erm Atten
			Dis	tance 1.8		Road -1.20		el -4.56		en Be	
VehicleType	REMEL	Traffic Flow	Dis		8			-	0.0		0.00
VehicleType Autos:	REMEL 66.51	Traffic Flow -14.88	Dis	1.8	8 3	-1.20		-4.56	0.0	000	0.00
VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL 66.51 77.72 82.99	Traffic Flow -14.88 -32.12 -36.08		1.8 1.9 1.9	8 3 2	-1.20 -1.20		-4.56 -4.87	0.0	000	0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise	REMEL 66.51 77.72 82.99	Traffic Flow -14.88 -32.12 -36.08 out Topo and	barrie	1.8 1.9 1.9 er atten	8 3 2	-1.20 -1.20		-4.56 -4.87	0.0	000 000 000	0.00
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	REMEL 66.51 77.72 82.99 E Levels (with	Traffic Flow           -14.88           -32.12           -36.08           out Topo and           Ir         Leq Day	barrie	1.8 1.9 1.9 er atten	8 3 2 nuation)	-1.20 -1.20 -1.20		-4.56 -4.87 -5.61	0.0 0.0 0.0	000	0.000 0.000 0.000 0.000 CNEL 53.3
VehicleType Autos: Medium Trucks: Heavy Trucks: <b>Unmitigated Noise</b> VehicleType	REMEL 66.51 77.72 82.99 e Levels (with Leq Peak Hou	Traffic Flow           -14.88           -32.12           -36.08           out Topo and           ir         Leq Day           .3	barrie	1.8 1.9 1.9 er atten	8 3 2 <b>nuation)</b> ivening	-1.20 -1.20 -1.20	light	-4.56 -4.87 -5.61	0.0 0.0 0.0	000 000 000 5	0.000 0.000 0.000 0.000 CNEL 53.3
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos:	REMEL 66.51 77.72 82.99 • Levels (with Leg Peak Hou 52	Traffic Flow           -14.88           -32.12           -36.08           out Topo and           Ir           Leq Day           .3	barrie	1.8 1.9 1.9 er atten	8 3 2 <i>vening</i> 50.1	-1.20 -1.20 -1.20	light 44.1	-4.56 -4.87 -5.61	0.0 0.0 0.0 0.0 52.5	000 000 000 5 0	0.000 0.000 0.000 0.000 CNEL 53.2 51.0
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks:	REMEL 66.51 77.72 82.99 2 Levels (with Leq Peak Hou 52 46	Traffic Flow           -14.88           -32.12           -36.08           out Topo and           rr           Leq Day           .3           .6	<i>barrie</i> 51.4 43.6	1.8 1.9 1.9 er atten	8 3 2 <i>vening</i> 50.1 36.1	-1.20 -1.20 -1.20	<i>light</i> 44.1 44.8	-4.56 -4.87 -5.61	0.0 0.0 0.0 <u>Ldn</u> 52.5	000 000 000 5 5 2	0.00 0.00 0.00 <u>CNEL</u> 53. 51. 51.
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL         66.51           77.72         82.99           e Levels (with         Leq Peak Hot           52         46           47         54	Traffic Flow           -14.88         -32.12         -36.08           out Topo and         Image: Composition of the second	barrie 51.4 43.6 44.7 52.8	1.8 1.9 1.9 <i>er atten</i> <i>Leq E</i>	8 3 2 <i>vening</i> 50.1 36.1 41.3 50.8	-1.20 -1.20 -1.20 <i>Leq N</i>	<i>light</i> 44.1 44.8 46.0 49.8	-4.56 -4.87 -5.61	0.0 0.0 0.0 52.5 51.0 52.2 56.1	000 000 000 5 0 2 7	0.00 0.00 0.00 CNEL 53. 51. 52. 57.
Autos: Medium Trucks: Heavy Trucks: Unmitigated Noiss VehicleType Autos: Medium Trucks: Heavy Trucks:	REMEL         66.51           77.72         82.99           e Levels (with         Leq Peak Hot           52         46           47         54	Traffic Flow           -14.88         -32.12           -36.08         -32.12           Out Topo and         Image: Composition of the second	barrie 51.4 43.6 44.7 52.8	1.8 1.9 1.9 Eer atten Leg E	8 3 2 <b>nuation)</b> vening 50.1 36.1 41.3 50.8 dBA	-1.20 -1.20 -1.20 Leq N	light 44.1 44.8 46.0 49.8 BA	-4.56 -4.87 -5.61	0.0 0.0 0.0 52.5 51.0 52.2 56.7	000 000 000 5 0 2 7	0.000 0.000 0.000 CNEL 53.: 51.1 52.: 57.1
VehicleType Autos: Medium Trucks: Heavy Trucks: Unmitigated Noise VehicleType Autos: Medium Trucks: Heavy Trucks: Vehicle Noise:	REMEL         66.51           77.72         82.99           e Levels (with         Leq Peak Hot           52         46           47         54	Traffic Flow           -14.88         -32.12           -36.08         -32.12           Out Topo and         Image: Composition of the second	barrie 51.4 43.6 44.7 52.8	1.8 1.9 1.9 Eer atten Leg E	8 3 2 <i>vening</i> 50.1 36.1 41.3 50.8	-1.20 -1.20 -1.20 <i>Leq N</i>	light 44.1 44.8 46.0 49.8 BA	-4.56 -4.87 -5.61	0.0 0.0 0.0 52.5 51.0 52.2 56.1	000 000 000 5 0 2 7	0.000 0.000 0.000 CNEL 53.: 51.0 52.: 57.0

Tuesday, January 21, 2020

	FHW	A-RD-77-108 HI	GHWAY	NOISE PI	REDICTIO	N MODEL			
Scenario Road Name Road Segmen		-				ame: JS 63 nber: 12374			
SITE S	PECIFIC INF	UT DATA			NO	ISE MOD	EL INPUT	s	
Highway Data				Site Con	ditions (H	lard = 10, S	oft = 15)		
Average Daily 1	raffic (Adt): 28	3,241 vehicles				Autos	: 15		
Peak Hour F	Percentage:	7.71%		Me	dium Truc	ks (2 Axles)	: 15		
Peak Ho	our Volume: 2	2,177 vehicles		He	avy Trucks	s (3+ Axles)	: 15		
Veh	icle Speed:	60 mph		Vehicle	Mix				
Near/Far Lan	e Distance:	48 feet			icleType	Dav	Evening	Night	Daily
Site Data				ven		tos: 77.5%	0	10.5%	
		0.0 feet		M	edium Truc			50.0%	3.00%
Barrier Type (0-Wa	rier Height:	0.0 reet			Heavy Truc	cks: 48.0%		50.0%	5.00%
Centerline Dis		64.0 feet							
Centerline Dist. t		64.0 feet		Noise So		ations (in t	feet)		
Barrier Distance t		0.0 feet			Autos:	0.000			
Observer Height (A		5.0 feet			m Trucks:	2.297			
0 1	d Flevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Ad	justment.	0.0
Roa	d Elevation:	0.0 feet		Lane Eq	uivalent D	istance (in	feet)		
F	load Grade:	0.0%			Autos:	59.540			
	Left View:	-90.0 degrees		Mediu	m Trucks:	59.391			
	Right View:	90.0 degrees		Heav	y Trucks:	59.406			
FHWA Noise Mode	l Calculations								
VehicleType			Distance		Road	Fresnel	Barrier Att		m Atten
Autos:	73.22	-0.07		.24	-1.20	-4.70		000	0.000
Medium Trucks:	83.68	-14.94		.22	-1.20	-4.88		000	0.000
Heavy Trucks:	87.33	-12.72	-1.	.23	-1.20	-5.31	0.0	000	0.00
Unmitigated Noise								1	
	Leq Peak Hour			Evening	Leq Ni		Ldn		VEL
Autos:	70.7		-	68.5		62.5	71.0		71.6
Medium Trucks:	66.3		-	55.7		64.9	71.1		71.1
		69	.3	61.6		70.8	76.9	-	76.9
Heavy Trucks:	72.2		-						
Vehicle Noise:	75.1	73	.2	69.5		72.2	78.7	7	78.9
	75.1	73	_						
Vehicle Noise:	75.1	73 ntour (in feet)	70	) dBA	65 dE	BA	60 dBA	55	dBA
Vehicle Noise:	75.1	73	70 n:		65 dE 525 537	24		55 2,	78.9 <i>dBA</i> 439 491

	FHW	A-RD-77-108	HIGH	NAY N	OISE PR	EDICTI	ом мо	DEL			
Scenario: EA Road Name: SR Road Segment: s/o	-74					Project Job Ni	Name: Imber:		MX		
SITE SPEC	IFIC INP	UT DATA				N	OISE N	<b>IODE</b>	L INPUT	s	
Highway Data				5	Site Cond	ditions (	Hard =	10, Sc	oft = 15)		
Average Daily Traffic	(Adt): 31	,643 vehicles						Autos:	15		
Peak Hour Perce	ntage:	7.71%			Med	lium Tru	cks (2 )	Axles):	15		
Peak Hour Vo	olume: 2	440 vehicles			Hea	avy Truc	ks (3+ /	Axles):	15		
Vehicle S	Speed:	60 mph			/ehicle N	liv					
Near/Far Lane Dis	tance:	48 feet		H		cleType	1	Day	Evening	Night	Daily
Site Data					10/11		utos:	77.5%			
	laight	0.0 feet			Me	dium Tr		48.0%			
Barrier H Barrier Type (0-Wall, 1-	•	0.0 teet				leavy Tr		48.0%			
Centerline Dist. to E		0.0 64.0 feet									
Centerline Dist. to Ob		64.0 feet		Λ	loise So				eet)		
Barrier Distance to Ob		0.0 feet				Autos		000			
Observer Height (Above		5.0 feet				n Trucks		297			
Pad Ele	,	0.0 feet			Heav	y Trucks	: 8.	006	Grade A	djustment	0.0
Road Ele		0.0 feet		L	ane Equ	ivalent	Distan	ce (in i	feet)		
Road	Grade:	0.0%				Autos	: 59.	540			
Lef	t View:	-90.0 degree	s		Mediun	n Trucks	: 59.	391			
Right	t View:	90.0 degree	s		Heav	y Trucks	59.	406			
FHWA Noise Model Cal											
		Traffic Flow	Dist	ance	Finite I		Fresr		Barrier At		m Atter
Autos:	73.22	0.42		-1.24		-1.20		-4.70		000	0.00
Medium Trucks:	83.68	-14.44		-1.22		-1.20		-4.88		000	0.00
Heavy Trucks:	87.33	-12.22		-1.23		-1.20		-5.31	0.	000	0.00
Unmitigated Noise Leve										1	
	Peak Hour			Leq Ev		Leq I			Ldn		VEL
Autos:	71.2		0.4		69.0		63.0		71	-	72
Medium Trucks:	66.8		64.0 69.8		56.2		65.4		71	-	71
Heavy Trucks:	72.7				62.0		71.3		77.		77
Vehicle Noise:	75.6		3.6		70.0		72.7	·	79	2	79
Centerline Distance to I	loise Con	tour (in feet)	-	70		05					10.4
			L	70 a		65 0			60 dBA		dBA
			.dn: IFI :	26 26		56			1,221		631
				-26	9	57	э		1.247	2.	687

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Scenario: EAC Road Name: SR-74 Road Segment: n/o Ethanac Rd. Project Name: JS 63 MX Job Number: 12374

Road Segment: N/6 Eth	anac	rtu.									
	SITE SPECIFIC INPUT DATA								l input	s	
Highway Data					Site Cor	ditions (F	Hard =	: 10, So	oft = 15)		
Average Daily Traffic (Ad	łt): 30	0,352 vehicle	s					Autos:	15		
Peak Hour Percentag	je:	7.71%			Me	dium Truc	:ks (2	Axles):	15		
Peak Hour Volun	ne: 2	2,340 vehicle	s		He	avy Truck	is (3+	Axles):	15		
Vehicle Spee	ed:	60 mph		-	Vehicle	Mix					
Near/Far Lane Distand	e:	48 feet				icleType		Day	Evening	Nigh	t Daily
Site Data						AL	itos:	77.5%	14.0%	10.5	92.00%
Barrier Heig	ht:	0.0 feet			М	edium Tru	cks:	48.0%	2.0%	50.0	% 3.00%
Barrier Type (0-Wall, 1-Berr		0.0				Heavy Tru	cks:	48.0%	2.0%	50.0	% 5.00%
Centerline Dist. to Barri	er:	59.0 feet		-	Noiso S	ource Ele	vation	e (in f	not)		
Centerline Dist. to Observ	er:	59.0 feet		-	110136 31	Autos:		000	een)		
Barrier Distance to Observ	er:	0.0 feet			Modiu	m Trucks:		297			
Observer Height (Above Pa	d):	5.0 feet				vy Trucks:	-	006	Grade Ad	liustma	nt: 0.0
Pad Elevation	on:	0.0 feet				,				jusuno	<i></i>
Road Elevation	on:	0.0 feet		L	Lane Eq	uivalent I	Distan	ce (in i	feet)		
Road Grad	le:	0.0%				Autos:	54	129			
Left Vie	W.	-90.0 degre	es		Mediu	m Trucks:	53	966			
Right Vie	W.	90.0 degre	es		Hear	y Trucks:	53	.982			
FHWA Noise Model Calcula	tions										
VehicleType REME	-	Traffic Flow	Di	stance	Finite	Road	Fres	nel	Barrier Att	en E	Berm Atten
Autos: 73	3.22	0.24		-0.6	2	-1.20		-4.69	0.0	000	0.000
	3.68	-14.62		-0.6	0	-1.20		-4.88	0.0	000	0.000
Heavy Trucks: 8	7.33	-12.40		-0.6	0	-1.20		-5.35	0.0	000	0.000
Unmitigated Noise Levels (			barri	ier atter	nuation)						
VehicleType Leq Peak				Leq E	vening	Leq N			Ldn		CNEL
Autos:	71.6	-	70.9		69.5		63.		71.	-	72.5
Medium Trucks:	67.3		64.4		56.6		65.		72.		72.0
Heavy Trucks:	73.1		70.3		62.5		71.		77.	-	77.9
Vehicle Noise:	76.1	1	74.1		70.4		73.	2	79.	7	79.8
Centerline Distance to Nois	e Cor	ntour (in feet	)								
					dBA	65 di 559			60 dBA		55 dBA
			Ldn:	2	60				1.205		2.596
			NEL:		65	571			1.231		2.651

	FHV	VA-RD-77-108	HIGH	WAY N		EDICT	ION MO	DEL			
Scenari Road Nam Road Segmer		Rd.					Name: . lumber:		MX		
SITE	SPECIFIC IN	PUT DATA				I	IOISE N	IODE	L INPUT	s	
Highway Data					Site Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt): 3	31.293 vehicles	;				,	Autos:	15		
	Percentage:	7.71%			Med	dium Tr	ucks (2 A	(xles):	15		
Peak H	our Volume:	2,413 vehicles	;		Hea	avy Tru	cks (3+ A	xles):	15		
Vei	hicle Speed:	60 mph			Vehicle N			-			
Near/Far Lai	ne Distance:	120 feet		-		l <b>ix</b> cleType		Day	Evening	Night	Daily
Site Data					veni			Day 77.5%	v	10.59	
					140			77.5% 48.0%		50.09	
	rier Height:	0.0 feet				leavy T		48.0% 48.0%		50.09	
Barrier Type (0-W	. ,	0.0			-	leavy I	IUCKS.	40.0%	2.0%	50.05	0 5.00%
Centerline Dis		110.0 feet		1	Noise So	urce E	levation	s (in fe	eet)		
Centerline Dist.		110.0 feet		Γ		Auto	s: 0.0	000			
Barrier Distance		0.0 feet			Mediur	n Truck	s: 2.1	297			
Observer Height (	,	5.0 feet			Heav	y Truck	s: 8.0	006	Grade Ad	justmei	nt: 0.0
	d Elevation:	0.0 feet			Lane Equ	iivələn	t Distan	o (in i	foot)		
	d Elevation: Road Grade:	0.0 feet 0.0%		F	Lane Lqu	Auto					
,	Left View:				Mediur						
	Right View:	-90.0 degree 90.0 degree				y Truck					
FHWA Noise Mode	l Calculations	5									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresn	el	Barrier Att	en Be	erm Atten
Autos:	73.22	0.38		-4.1	0	-1.20		-4.78	0.0	000	0.000
Medium Trucks:	83.68	-14.49		-4.0	9	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	87.33	-12.27		-4.0	9	-1.20		-5.14	0.0	000	0.000
Unmitigated Noise											
,1	Leq Peak Hou	1 1		Leq E	ivening	Leq	Night		Ldn		CNEL
Autos:	68.		67.5		66.1		60.1		68.6	-	69.2
Medium Trucks:	63.		61.1		53.3		62.5		68.6		68.7
Heavy Trucks:	69.	-	6.9		59.1		68.3		74.5	-	74.5
Vehicle Noise:	72.		70.7		67.1		69.8		76.3	3	76.4
Centerline Distance	e to Noise Co	ontour (in feet)		70 -	dBA	65	dBA	4	60 dBA	5	5 dBA
			Ldn:	28			ива 23		1.342		2.891
			JEL:	29			23 36		1,342		2,091
		Cr	* <b>L</b> L.	28		0			1,071		.,

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	FHWA	-RD-77-108 HIG	HWAY I	NOISE PF	REDICTION		DEL			
Scenario Road Name Road Segment					Project Na Job Num			МХ		
SITE S	PECIFIC INP	UT DATA			NO	ISE M	ODEI		s	
Highway Data				Site Con	ditions (Ha	ard = 1	10, So	ft = 15)		
Average Daily T	raffic (Adt): 31	937 vehicles				A	utos:	15		
Peak Hour F	Percentage:	7.71%		Me	dium Truck	is (2 A	xles):	15		
Peak Ho	ur Volume: 2	462 vehicles		He	avy Trucks	(3+ A	xles):	15		
Veh	icle Speed:	60 mph	-	Vehicle I	Niv					
Near/Far Lan	e Distance:	120 feet	-		icleType		Dav	Evening	Night	Daily
Site Data				VCIII	Aut		77.5%	14.0%	10.5%	
		0.0 feet		Me	dium Truc		18.0%	2.0%	50.0%	
Barrier Type (0-Wa	ier Height:	0.0		ŀ	leavy Truc	ks: 4	18.0%	2.0%	50.0%	
Centerline Dist		110.0 feet	_							
Centerline Dist. to		110.0 feet	_	Noise So	ource Elev			et)		
Barrier Distance to		0.0 feet			Autos:	0.0				
Observer Height (A		5.0 feet			n Trucks:	2.2				
U 1	d Flevation:	0.0 feet		Heav	y Trucks:	8.0	06	Grade Adj	ustmen	: 0.0
Road	d Elevation:	0.0 feet		Lane Equ	uivalent D	istanc	e (in f	eet)		
R	oad Grade:	0.0%			Autos:	92.3	31			
	Left View:	-90.0 degrees		Mediur	n Trucks:	92.2	35			
	Right View:	90.0 degrees		Heav	y Trucks:	92.2	44			
FHWA Noise Model	Calculations									
VehicleType	REMEL 7	raffic Flow Di	istance	Finite	Road	Fresne	el I	Barrier Atte	en Bei	rm Atten
Autos:	73.22	0.46	-4.1	-	-1.20		4.78		000	0.000
Medium Trucks:	83.68	-14.40	-4.0	-	-1.20		4.88		000	0.000
Heavy Trucks:	87.33	-12.18	-4.0	-	-1.20	-	5.14	0.0	000	0.000
Unmitigated Noise				<u> </u>						
	eq Peak Hour	Leq Day	Leq E	vening	Leq Nig			Ldn	-	NEL
Autos:	68.4	67.6		66.2		60.2		68.6		69.3
Medium Trucks:	64.0	61.1		53.4		62.6		68.7		68.8
Heavy Trucks: Vehicle Noise:	69.8	67.0		59.2		68.4 69.9		74.6	-	74.6
	72.8	70.8		67.2		69.9		76.4	•	76.5
Centerline Distance	e to Noise Con	tour (in feet)	70	dBA	65 dB	<u> </u>	6	0 dBA	FF	dBA
		Ldn:		ава 93	631	м		1.360		931
		CNEL:		93 99	645			1,360		931 994
		GIVEL.	2		040			1,000	2.	554

F	HWA-RD-7	77-108 HIC	GHWAY	NOISE PF	REDICTION				
Scenario: EAC					Project Na				
Road Name: SR-74 Road Segment: s/o River					JOD NUM	ber: 1237	4		
Road Segment: \$/6 River	Ra.								
SITE SPECIFIC	INPUT D	ATA					EL INPUT	s	
Highway Data				Site Con	ditions (Ha		,		
Average Daily Traffic (Adt)	: 31,226 v	/ehicles				Auto			
Peak Hour Percentage	: 7.71%	•			dium Truck		,		
Peak Hour Volume	,			He	avy Trucks	(3+ Axles	s): 15		
Vehicle Speed				Vehicle I	Nix				
Near/Far Lane Distance	: 120 f	eet		Vehi	icleType	Day	Evening	Night	Daily
Site Data					Aut	os: 77.5	5% 14.0%	10.5%	92.00
Barrier Height	: 00	feet		Me	edium Truc	ks: 48.0	0% 2.0%	50.0%	3.00
Barrier Type (0-Wall, 1-Berm)				F	leavy Truc	ks: 48.0	0% 2.0%	50.0%	5.009
Centerline Dist. to Barrier		feet		Noise C		- 41	6		
Centerline Dist. to Observer				Noise Sc	ource Eleva		teet)		
Barrier Distance to Observer	. 0.0	feet			Autos:	0.000			
Observer Height (Above Pad)	: 5.0	feet			n Trucks:	2.297 8.006	Grade Ad	liustmont	
Pad Elevation	: 0.0	feet		Heav	y Trucks:	8.006	Grade Ad	ijusimeni	. 0.0
Road Elevation	: 0.0	feet		Lane Equ	uivalent Di	istance (i	n feet)		
Road Grade	: 0.09	%			Autos:	92.331			
Left View	-90.0	degrees		Mediur	n Trucks:	92.235			
Right View	90.0	degrees		Heav	y Trucks:	92.244			
FHWA Noise Model Calculati									
VehicleType REMEL	Traffic		Distance			Fresnel	Barrier At		m Atter
Autos: 73.		0.37	-4.1		-1.20	-4.7	• •	000	0.00
Medium Trucks: 83.		-14.50	-4.0		-1.20	-4.8	• •	000	0.00
Heavy Trucks: 87.	- 33	-12.28	-4.0	09	-1.20	-5.1	4 0.	000	0.00
Unmitigated Noise Levels (w		o and bar	rier atte	nuation)					
VehicleType Leq Peak H		eq Day		Evening	Leq Nig		Ldn		NEL
Autos:	68.3	67.		66.1		60.1	68.		69
	63.9	61.		53.3		62.5	68.		68
	69.8	66.		59.1		68.3	74.		74
	72.7	70.	7	67.1		69.8	76.	3	76
Centerline Distance to Noise	Contour (	in feet)	70	10.4	ac 10				10.4
		1 -1-		dBA	65 dB	4	60 dBA		dBA
		Ldr		289	622		1,340		887
		CNEL	. 2	295	635		1,369	- 2,	949

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	510										_
Scenario:						Project N			1X		
Road Name:		the second second				JOD NU	mber: 12	374			
Road Segment:	s/o meadow	Drook AV.									
	ECIFIC IN	PUT DATA							. INPUTS	5	
Highway Data				5	Site Con	ditions (l	Hard = 10	), Soi	ft = 15)		
Average Daily Tra	affic (Adt): 3	4,694 vehicles					AL	itos:	15		
Peak Hour Pe	ercentage:	7.71%			Mee	dium Truc	cks (2 Ax	les):	15		
Peak Hou	r Volume:	2,675 vehicles			Hea	avy Truck	is (3+ Ax	les):	15		
Vehic	le Speed:	60 mph			/ehicle N	liv					
Near/Far Lane	Distance:	120 feet		Ľ		cleType	D	av	Evening	Night	Daily
Site Data								7.5%	14.0%	10.5%	
	v Hoight	0.0 feet			Me	dium Tru		3.0%	2.0%	50.0%	
Barrier Type (0-Wall	er Height:	0.0 teet				leavy Tru		3.0%	2.0%	50.0%	
Centerline Dist.	, ,	110.0 feet									
Centerline Dist. to		110.0 feet		٨	loise So	urce Ele			et)		
Barrier Distance to		0.0 feet				Autos:		-			
Observer Height (Ab		5.0 feet				n Trucks:					
0 (	Flevation:	0.0 feet			Heav	y Trucks:	8.00	6	Grade Adj	ustment.	: 0.0
	Elevation:	0.0 feet		L	ane Equ	ivalent l	Distance	(in fe	et)		
	ad Grade:	0.0%				Autos					
	Left View:	-90.0 degrees			Mediur	n Trucks:					
	liaht View:	90.0 degrees				y Trucks:		-			
N.	igin view.	50.0 degrees			mour	<i>y maono</i> .	02.21				
FHWA Noise Model (	Calculations										
VehicleType	REMEL	Traffic Flow	Dista	nce	Finite		Fresnel	E	Barrier Atte	en Ber	m Atten
Autos:	73.22	0.82		-4.10		-1.20		.78	0.0		0.00
Medium Trucks:	83.68	-14.04		-4.09		-1.20		.88	0.0	00	0.00
Heavy Trucks:	87.33	-11.82		-4.09	)	-1.20	-5	.14	0.0	00	0.00
Unmitigated Noise L	evels (with	out Topo and b	arrier	atten	uation)						
VehicleType Le	eq Peak Hou	r Leq Day	L	eq Ev	ening	Leq N	ight		Ldn	CI	NEL
Autos:	68.	7 68	3.0		66.6		60.5		69.0		69.
Medium Trucks:	64.	3 6 <sup>.</sup>	.5		53.7		62.9		69.1		69.
Heavy Trucks:	70.	2 67	.4		59.6		68.8		74.9		75.
Vehicle Noise:	73.	2 7	.2		67.5		70.3		76.7		76.
Centerline Distance	to Noise Co	ntour (in feet)									
				70 d		65 d			) dBA		dBA
		1.	in:	31	0	66	7	1	.437	3,	097

	FHV	VA-RD-77-108 I	IIGH	WAY	IOISE PR	EDICTIC		DEL			
Scenari Road Nam Road Segmei	e: Ethanac Rd	l.				Project I Job Nu			MX		
SITE	SPECIFIC IN	PUT DATA				NO	DISE	MODE		s	
Highway Data				;	Site Cond	ditions (l	Hard =	10, Se	oft = 15)		
Average Daily	Traffic (Adt):	167 vehicles						Autos:	15		
Peak Hour	Percentage:	7.71%			Med	dium True	cks (2	Axles):	15		
Peak H	our Volume:	13 vehicles			Hea	avy Truck	ks (3+	Axles):	15		
Ve	hicle Speed:	40 mph			Vehicle N	liv					
Near/Far La	ne Distance:	12 feet		-		cleType	1	Day	Evening	Night	Daily
Site Data					Vern		utos:	75.5%	~	10.5	
					Me	dium Tri		48.9%		48.9	
	rier Height:	0.0 feet 0.0				leavy Tru		47.3%		47.3	
Barrier Type (0-W Centerline Dis	. ,	0.0 37.0 feet						-			
Centerline Dist.		37.0 feet		1	Noise So	urce Ele	vation	s (in f	eet)		
Barrier Distance		0.0 feet				Autos:	: 0.	000			
Observer Height (		5.0 feet			Mediun	n Trucks:	: 2	297			
0,1	ad Elevation:	0.0 feet			Heav	V Trucks:	: 8	006	Grade Ad	justme	nt: 0.0
	ad Elevation: ad Elevation:	0.0 feet		1	Lane Equ	ivalent l	Distan	ce (in	feet)		
	Road Grade:	0.0%		-	Lano Lya	Autos		.851			
,	Left View:	-90.0 degrees			Modium	n Trucks:		610			
	Right View:	90.0 degrees				V Trucks:		634			
	rugin view.	50.0 degree.	,		mour	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
FHWA Noise Mode	el Calculation:	5									
VehicleType	REMEL	Traffic Flow	Dist	tance	Finite I	Road	Fres	nel	Barrier Att	en B	erm Atten
Autos:	66.51	-20.34		1.8	-	-1.20		-4.56	0.0	000	0.00
Medium Trucks:	77.72	-37.58		1.9	3	-1.20		-4.87	0.0	000	0.000
Heavy Trucks:	82.99	-41.54		1.9	2	-1.20		-5.61	0.0	000	0.00
Unmitigated Noise	e Levels (with	out Topo and b	arrie	r atten	uation)						
	Leg Peak Hou				vening	Leg N	light		Ldn		CNEL
Autos:	46	.9 4	6.0		44.7		38.	6	47.1	1	47.
Medium Trucks:	40	.9 3	8.1		30.6		39.	3	45.5	5	45.0
Heavy Trucks:	42	.2 3	9.3		35.9		40.	5	46.7	7	46.
Vehicle Noise:	48	.9 4	7.4		45.3		44.	3	51.3	3	51.
Centerline Distand	e to Noise Co	ntour (in feet)									
				70 0	dBA	65 d	BA	(	60 dBA	Ę	5 dBA
		L	dn:	2	2	4			10		21
		CN	EL:	2	2	5			10		22

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	FHWA	-RD-77-108 HIG	HWAY I	NOISE PR	REDICTIO	N MODEL		
Road Name	o: EAPC e: SR-74 ht: n/o Theda St.					ame: JS 63 nber: 12374		
SITE S	SPECIFIC INPU	JT DATA			NO	ISE MODE	EL INPUTS	
Highway Data				Site Con	ditions (H	ard = 10, S	oft = 15)	
Average Daily	Traffic (Adt): 28,	430 vehicles				Autos	: 15	
Peak Hour	Percentage: 7	7.71%		Med	dium Truci	ks (2 Axles)	: 15	
Peak H	our Volume: 2,	192 vehicles		Hea	avy Trucks	s (3+ Axles)	: 15	
Vel	nicle Speed:	60 mph	-	Vehicle N	Aiv			
Near/Far Lar	ne Distance:	48 feet	ŀ		cleType	Dav	Evening	Night Daily
Site Data				10/10	Au		0	10.5% 92.00%
	rier Heiaht:	0.0 feet		Me	dium Truc			50.0% 3.00%
Barrier Type (0-W		0.0		H	leavy Truc	ks: 48.0%	6 2.0%	50.0% 5.00%
Centerline Dis		64.0 feet	_					
Centerline Dist. 1		64.0 feet	-	Noise So		ations (in f	'eet)	
Barrier Distance t	o Observer:	0.0 feet			Autos:	0.000		
Observer Height ()	Above Pad):	5.0 feet			n Trucks:	2.297	Grado Adiu	stment: 0,0
Pa	d Elevation:	0.0 feet		Heav	y Trucks:	8.006	Grade Auju	sumerit. 0.0
Roa	d Elevation:	0.0 feet		Lane Equ	ıivalent D	istance (in	feet)	
F	Road Grade:	0.0%			Autos:	59.540		
	Left View:	90.0 degrees		Mediun	n Trucks:	59.391		
	Right View:	90.0 degrees		Heav	y Trucks:	59.406		
FHWA Noise Mode								
VehicleType			istance	Finite		Fresnel	Barrier Atter	
Autos:	73.22	-0.04	-1.2		-1.20	-4.70		
Medium Trucks:	83.68	-14.91	-1.2	-	-1.20	-4.88		
Heavy Trucks:	87.33	-12.69	-1.2		-1.20	-5.31	0.00	00.00
Unmitigated Noise								
	Leq Peak Hour	Leq Day		vening	Leq Ni		Ldn	CNEL
Autos: Medium Trucks:	70.7 66.4	70.0 63.5		68.6 55.7		62.5 64.9	71.0 71.1	71.0
Heavy Trucks:	72.2	69.4		55.7 61.6		64.9 70.8	71.1	71.
Vehicle Noise:	75.2	73.2		69.5		70.8	76.9	78.9
Centerline Distanc				50.0				10.
Centernine Distanc	e to moise com	our (in ieel)	70	dBA	65 dB	A	60 dBA	55 dBA
		Ldn:		45	528		1.137	2,449
		CNEL:		50	539		1,161	2,502
								,

F	HWA-RD	-77-108 H	IGHWAY	NOISE PR	REDICTIO	N MOE	DEL			
Scenario: EAPC					Project N	ame: J	S 63 I	/XN		
Road Name: SR-74					Job Nur	nber: 1	2374			
Road Segment: s/o Theo	la St.									
SITE SPECIFIC	INPUT	DATA						L INPUT	S	
Highway Data				Site Con	ditions (H	lard = 1	10, So	ft = 15)		
Average Daily Traffic (Adt)	): 31,853	vehicles				A	lutos:	15		
Peak Hour Percentage	e: 7.71	%		Me	dium Truc	ks (2 A	xles):	15		
Peak Hour Volume	e: 2,456	vehicles		He	avy Truck	s (3+ A	xles):	15		
Vehicle Speed	<i>l:</i> 60	mph		Vehicle I	Mix					
Near/Far Lane Distance	e: 48	feet			icleType		Day	Evening	Night	Daily
Site Data							77.5%	•		92.00
Barrier Height		0 feet		M	edium Truc	cks: 4	18.0%	2.0%	50.0%	
Barrier Type (0-Wall, 1-Berm				ŀ	leavy Truc	cks: 4	18.0%	2.0%	50.0%	5.00
Centerline Dist. to Barrie		0 feet								
Centerline Dist. to Observe		0 feet		Noise So	ource Elev			et)		
Barrier Distance to Observe		0 feet			Autos:	0.0				
Observer Height (Above Pad		0 feet			m Trucks:	2.2				
Pad Elevation		0 feet		Heav	y Trucks:	8.0	06	Grade Ad	justment	: 0.0
Road Elevation		0 feet		Lane Eq	uivalent D	listanc	e (in f	eet)		
Road Grade		0%			Autos:	59.5		,		
Left View		0 degrees		Mediu	m Trucks:	59.3	91			
Right View		0 degrees		Heav	y Trucks:	59.4				
FHWA Noise Model Calculati	ons									
VehicleType REMEL	Traffi	c Flow	Distance	e Finite	Road	Fresne	el i	Barrier At	en Ber	m Atter
Autos: 73.	22	0.45	-1	.24	-1.20	-	4.70	0.	000	0.00
Medium Trucks: 83.	68	-14.41		.22	-1.20		4.88	0.	000	0.00
Heavy Trucks: 87.	33	-12.20	-1	.23	-1.20	-	5.31	0.	000	0.00
Unmitigated Noise Levels (w				,					Т	
VehicleType Leq Peak H		Leq Day		Evening	Leq Ni			Ldn		VEL
Autos:	71.2	70		69.1		63.0		71.		72
Medium Trucks:	66.8	64		56.2		65.4		71.	-	71.
Heavy Trucks:	72.7	69		62.1		71.3		77.		77
Vehicle Noise:	75.7	73	.7	70.0		72.8		79.	2	79
Centerline Distance to Noise	Contour	(in feet)							6-	10.4
				0 dBA	65 dE			0 dBA		dBA
		La		264	569			1,226		642
		CNE	-1 ·	270	582			1.253	2	699

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL Project Name: JS 63 MX Job Number: 12374 Scenario: EAPC Road Name: SR-74 Road Segment: n/o Ethanac Rd. SITE SPECIFIC INPUT DATA NOISE MODEL INPUTS Site Conditions (Hard = 10, Soft = 15) Autos: 15 Highway Data Average Daily Traffic (Adt): 30,562 vehicles Peak Hour Percentage: 7.71% Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): Peak Hour Volume: 2,356 vehicles 15 Vehicle Speed: 60 mph Vehicle Mix 
 Utele Mix
 Day
 Evening
 Night
 Daily

 VehicleType
 Day
 Evening
 Night
 Daily

 Autos:
 77.5%
 14.0%
 10.5%
 92.00%

 Medium Trucks:
 48.0%
 2.0%
 50.0%
 3.00%

 Heavy Trucks:
 48.0%
 2.0%
 50.0%
 5.00%
 Near/Far Lane Distance: 48 feet Site Data Barrier Height: Barrier Type (0-Wall, 1-Berm): 0.0 feet 0.0 59.0 feet 59.0 feet Centerline Dist. to Barrier: Centerline Dist. to Observer: Noise Source Elevations (in feet) Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Barrier Distance to Observer: Observer Height (Above Pad): 0.0 feet 5.0 feet Grade Adjustment: 0.0 Pad Elevation: 0.0 feet Lane Equivalent Distance (in feet) Road Elevation: 0.0 feet Autos: 54.129 Medium Trucks: 53.966 Road Grade: 0.0% -90.0 degrees Left View: Right View: 90.0 degrees Heavy Trucks: 53.982 
 FHWA Noise Model Calculations

 VehicleType
 REMEL
 Traffic Flow
 Distance
 Finite Road
 Fresnel
 Barrier Atten
 Berrn Atten

 Autos:
 73.22
 0.27
 -0.62
 -1.20
 -4.69
 0.000
 0.000

Medium Trucks:	83.68	-14.59	-0.60	-1.20	-4.88 0.0	00 0.000
Heavy Trucks:	87.33	-12.37	-0.60	-1.20	-5.35 0.0	000.00
Unmitigated Nois	e Levels (withou	t Topo and barr	ier attenuation)			
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.9	69.5	63.5	71.9	72.6
Medium Trucks:	67.3	64.4	56.7	65.9	72.0	72.1
Heavy Trucks:	73.1	70.3	62.5	71.7	77.9	77.9
Vehicle Noise:	76.1	74.1	70.5	73.2	79.7	79.8
Centerline Distan	ce to Noise Con	tour (in feet)				
			70 dBA	65 dBA	60 dBA	55 dBA
		Ldn:	261	562	1,210	2,608
		CNEL:	266	574	1,236	2,664

	FHV	/A-RD-77-108 H	IGHW			REDICT					
Road Nam	o: EAPC e: SR-74 nt: s/o Ethanac	Rd.					t Name: . lumber:		мх		
SITE	SPECIFIC IN	PUT DATA				I	NOISE N	/ODE	L INPUT	S	
Highway Data				5	Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt): 3	1,503 vehicles						Autos:	15		
Peak Hour	Percentage:	7.71%			Me	dium Ti	rucks (2 A	Axles):	15		
Peak H	our Volume:	2,429 vehicles			He	avy Tru	icks (3+ A	Axles):	15		
Ve	hicle Speed:	60 mph									
Near/Far Lai	ne Distance:	120 feet		-	Vehicle I	icleType		Davi	Evening	Night	Daily
Site Data		-			veni			Day	~	· ·	
								77.5% 48.0%		10.5% 50.0%	
	rier Height:	0.0 feet						48.0% 48.0%		50.0%	
Barrier Type (0-W	. ,	0.0			F	leavy 1	rucks:	48.0%	2.0%	50.0%	5.00%
Centerline Dis		110.0 feet		1	Noise So	ource E	levation	s (in fe	eet)		
Centerline Dist.		110.0 feet				Auto	os: 0.0	000			
Barrier Distance		0.0 feet			Mediur	n Truck	(s: 2.2	297			
Observer Height (	,	5.0 feet			Heav	v Truck	(s: 8.0	006	Grade Ad	iustment	: 0.0
	ad Elevation:	0.0 feet									
	ad Elevation:	0.0 feet		1	Lane Equ		t Distand		eet)		
F	Road Grade:	0.0%				Auto					
	Left View:	-90.0 degrees				n Truck					
	Right View:	90.0 degrees			Heav	y Truck	(s: 92.)	244			
FHWA Noise Mode	el Calculations	6									
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresh		Barrier Att		m Atten
Autos:	73.22	0.41		-4.10	0	-1.20		-4.78	0.0	000	0.000
Medium Trucks:	83.68	-14.46		-4.09	9	-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	87.33	-12.24		-4.09	9	-1.20		-5.14	0.0	000	0.000
Unmitigated Noise											
,1	Leq Peak Hou	1 1		.eq Ev	vening	Leq	Night		Ldn	-	NEL
Autos:	68.		7.6		66.1		60.1		68.6		69.2
Medium Trucks:	63.		1.1		53.3		62.5		68.7		68.7
Heavy Trucks:	69.		6.9		59.2		68.4		74.5		74.6
Vehicle Noise:	72.	.7 7	0.8		67.1		69.9	)	76.3	3	76.5
Centerline Distance	e to Noise Co	ntour (in feet)	-					1			
			_ L_	70 c			dBA		0 dBA		dBA
			dn:	29			26		1,348		904
		CN	=L:	29	97	6	39		1,377	2,	966

Tuesday, January 21, 2020

Tuesday, January 21, 2020

Tuesday, January 21, 2020

0.000

FHWA-RD-	77-108 HIGHWA	NOISE PREDICTION MOI	DEL
Scenario: EAPC Road Name: SR-74 Road Segment: n/o River Rd.		Project Name: Job Number: 1	
SITE SPECIFIC INPUT D	ATA	NOISE	ODEL INPUTS
Highway Data		Site Conditions (Hard =	
Average Daily Traffic (Adt): 32,147 Peak Hour Percentage: 7.71% Peak Hour Volume: 2.479		Medium Trucks (2 A Heavy Trucks (3+ A	
Vehicle Speed: 60			(xies). 15
Near/Far Lane Distance: 120 1		Vehicle Mix VehicleType	Day Evening Night Daily
Site Data			77.5% 14.0% 10.5% 92.00
Barrier Height: 0.0	feet	Medium Trucks:	48.0% 2.0% 50.0% 3.00%
Barrier Type (0-Wall, 1-Berm): 0.0	leet	Heavy Trucks:	48.0% 2.0% 50.0% 5.00%
Centerline Dist. to Barrier: 110.0	feet	Noise Source Elevations	s (in feet)
Centerline Dist. to Observer: 110.0	feet		000
Barrier Distance to Observer: 0.0	feet		297
	feet feet		006 Grade Adjustment: 0.0
	feet	Lane Equivalent Distance	ce (in feet)
Road Grade: 0.0		Autos: 92.3	1 /
0.0	degrees	Medium Trucks: 92.2	
	degrees	Heavy Trucks: 92.2	
FHWA Noise Model Calculations			
VehicleType REMEL Traffic	Flow Distanc	Finite Road Fresn	el Barrier Atten Berm Atter
Autos: 73.22	0.49 -4	10 -1.20	-4.78 0.000 0.00
Medium Trucks: 83.68	-14.37 -4	09 -1.20	-4.88 0.000 0.00
Heavy Trucks: 87.33	-12.16 -4	09 -1.20	-5.14 0.000 0.00
Unmitigated Noise Levels (without Top	o and barrier att	enuation)	
		Evening Leq Night	Ldn CNEL
Autos: 68.4	67.6	66.2 60.2	
Medium Trucks: 64.0	61.2	53.4 62.6	
Heavy Trucks: 69.9	67.0	59.2 68.5	
Vehicle Noise: 72.8	70.9	67.2 69.9	76.4 76
Centerline Distance to Noise Contour (			
		dBA 65 dBA	60 dBA 55 dBA
	Ldn:	294 634	1,366 2,943
	CNEL:	301 648	1,396 3,007

F	HWA-RD-77-10	8 HIGH	WAY NO	DISE PR	EDICTIO	N MOE	DEL			
Scenario: EAPC Road Name: SR-74					Project Na Job Nun			ЛХ		
Road Segment: s/o River	Rd.				300 Muli	iber. I	2314			
SITE SPECIFIC	INPUT DATA							L INPUT	s	
Highway Data			S	ite Cond	ditions (H	ard =	10, So	ft = 15)		
Average Daily Traffic (Adt)	31,436 vehicl	es				A	utos:	15		
Peak Hour Percentage	7.71%			Med	lium Truck	ks (2 A	xles):	15		
Peak Hour Volume	2,424 vehicl	es		Hea	avy Trucks	; (3+ A	xles):	15		
Vehicle Speed.	60 mph		V	ehicle N	liv					
Near/Far Lane Distance	: 120 feet		-		cleType		Dav	Evening	Night	Daily
Site Data					Aut		77.5%			92.009
Barrier Height	: 0.0 feet			Me	dium Truc	ks:	18.0%	2.0%	50.0%	3.009
Barrier Type (0-Wall, 1-Berm)				н	leavy Truc	ks: 4	18.0%	2.0%	50.0%	5.009
Centerline Dist. to Barrier			_		-					
Centerline Dist. to Observer			N	oise So	urce Elev			et)		
Barrier Distance to Observer					Autos:	0.0				
Observer Height (Above Pad)					n Trucks:	2.2		0		
Pad Elevation				Heavy	Y Trucks:	8.0	06	Grade Ad	justment	0.0
Road Elevation	: 0.0 feet		L	ane Equ	ivalent D	istanc	e (in f	eet)		
Road Grade	0.0%				Autos:	92.3	31			
Left View	-90.0 degr	ees		Mediun	n Trucks:	92.2	35			
Right View	90.0 degr	ees		Heavy	y Trucks:	92.2	44			
FHWA Noise Model Calculation			- 1							
VehicleType REMEL	Traffic Flow		tance	Finite I		Fresn		Barrier Att		m Atten
Autos: 73.2		-	-4.10		-1.20		4.78		000	0.00
Medium Trucks: 83.6			-4.09		-1.20		4.88		000	0.00
Heavy Trucks: 87.3	-12.2	5	-4.09		-1.20		5.14	0.0	000	0.00
Unmitigated Noise Levels (wi		d barrie	r attenu	ation)						
VehicleType Leq Peak H			Leq Eve		Leq Ni			Ldn		VEL
	68.3	67.5		66.1		60.1		68.		69.
	63.9	61.1		53.3		62.5		68.		68.
	69.8	66.9		59.1		68.4		74.		74.
	72.7	70.8		67.1		69.8		76.3	3	76.
Centerline Distance to Noise	Contour (in fee	et)	70.0							10.4
		Lata	70 dl		65 dB			0 dBA		dBA
		Ldn: CNFL:	290		625			1,346		900
	(	JIVEL:	296	)	638			1,375	Ζ,	962

Tuesday, January 21, 2020

	FHV	VA-RD-77-108 I	HIGHWA	NOI	ISE PRE	DICTIO	N MÖDEL			
	: EAPC						ame: JS 6			
Road Name						Job Nun	nber: 1237	4		
Road Segmen	t: s/o Meadov	vbrook Av.								
	PECIFIC IN	PUT DATA						EL INPUTS	5	
Highway Data				Sit	e Condi	tions (H	ard = 10, 3	,		
Average Daily	, ,						Auto			
Peak Hour I		7.71%					ks (2 Axles	· ·		
	our Volume:	2,689 vehicles			Heav	y Trucks	s (3+ Axles	): 15		
	nicle Speed:	60 mph		Ve	hicle Mi	x				
Near/Far Lar	e Distance:	120 feet			Vehici	eType	Day	Evening	Night	Daily
Site Data						Au	tos: 77.5	% 14.0%	10.5%	92.00
Bar	rier Height:	0.0 feet			Med	lium Truc	ks: 48.0	% 2.0%	50.0%	3.00
Barrier Type (0-Wa	all, 1-Berm):	0.0			He	avy Truc	ks: 48.0	% 2.0%	50.0%	5.00
Centerline Dis	t. to Barrier:	110.0 feet		No	ise Sou	rce Elev	ations (in	feet)		
Centerline Dist. t		110.0 feet				Autos:	0.000	,		
Barrier Distance t	o Observer:	0.0 feet			Medium		2.297			
Observer Height (/	Above Pad):	5.0 feet				Trucks:	8.006	Grade Adj	ustment:	0.0
Pa	d Elevation:	0.0 feet			,			,		
	d Elevation:	0.0 feet		La	ne Equi		istance (ii	1 feet)		
F	Road Grade:	0.0%				Autos:	92.331			
	Left View:	-90.0 degree:		1	Medium		92.235			
	Right View:	90.0 degree	S		Heavy	Trucks:	92.244			
FHWA Noise Mode	I Calculation:	s								
VehicleType	REMEL	Traffic Flow	Distan	ce	Finite R	oad	Fresnel	Barrier Atte	en Berr	n Atter
Autos:	73.22	0.85		4.10		-1.20	-4.7	8 0.0	00	0.0
Medium Trucks:	83.68	-14.02		4.09		-1.20	-4.8	9 0.0	00	0.0
Heavy Trucks:	87.33	-11.80		4.09		-1.20	-5.1	4 0.0	00	0.0
Unmitigated Noise			oarrier a	ttenua	tion)					
	Leq Peak Hou			q Ever		Leq Ni		Ldn		IEL
Autos:	68		8.0		66.6		60.6	69.0		69
Medium Trucks:	64		1.5		53.7		63.0	69.1		69
Heavy Trucks:	70		7.4		59.6		68.8	75.0		75
Vehicle Noise:	73	.2 7	1.2		67.6		70.3	76.8		76
Centerline Distanc	e to Noise Co	ontour (in feet)								
				70 dBi	A	65 dB	A	60 dBA		dBA
		1	.dn:	311		670		1.443	3.1	08
			FI :	318		684		1.474		75

	FHV	VA-RD-77-108 HIG	HWAY I	NOISE PF	REDICTIO	N MOI	DEL			
Road Nan	io: EAPC ne: Ethanac Rd nt: w/o SR-74	I.			Project N Job Nur			MX		
SITE	SPECIFIC IN	IPUT DATA			NC	ISE N	IODE	L INPUT	s	
Highway Data				Site Con	ditions (H	lard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	587 vehicles					Autos:	15		
Peak Hour	Percentage:	7.71%		Me	dium Truc	ks (2 A	xles):	15		
Peak I	our Volume:	45 vehicles		He	avy Truck	s (3+ A	xles):	15		
Ve	hicle Speed:	40 mph	-	Vehicle I	<i>a</i>					
Near/Far La	ne Distance:	12 feet	ŀ		icleType		Day	Evening	Night	Daily
Site Data				ven			75.5%	•	10.5%	
					Au dium Tru		48.9%		48.9%	
	rrier Height:	0.0 feet			leavy Tru		40.9% 47.3%		40.9%	
Barrier Type (0-V	. ,	0.0		r	leavy IIu	UKS.	47.370	0.4%	47.3%	0.74%
	st. to Barrier:	37.0 feet		Noise Sc	ource Elev	vations	s (in fe	eet)		
Centerline Dist.		37.0 feet			Autos:	0.0	000			
Barrier Distance		0.0 feet		Mediur	n Trucks:	2.2	97			
Observer Height	· /	5.0 feet		Heav	v Trucks:	8.0	006	Grade Ad	justmen	t: 0.0
-	ad Elevation:	0.0 feet	-							
	ad Elevation:	0.0 feet	-	Lane Eq	uivalent E			leet)		
	Road Grade:	0.0%			Autos:	36.8				
	Left View:	-90.0 degrees			n Trucks:	36.6				
	Right View:	90.0 degrees		Heav	y Trucks:	36.6	534			
FHWA Noise Mod	el Calculation:	s								
VehicleType	REMEL	Traffic Flow D	listance	Finite	Road	Fresn		Barrier Att	en Be	rm Atten
Autos:	66.51	-14.88	1.8		-1.20		-4.56		000	0.00
Medium Trucks:	77.72	-32.12	1.9	93	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	82.99	-36.08	1.9	92	-1.20		-5.61	0.0	000	0.00
Unmitigated Nois				,						
VehicleType	Leq Peak Hou		,	vening	Leq N	<u> </u>		Ldn		NEL
Autos:	52			50.1		44.1		52.		53.2
Medium Trucks:	46			36.1		44.8		51.0		51.
Heavy Trucks:	47	-		41.3		46.0		52.3		52.
Vehicle Noise:	54	.3 52.8	3	50.8		49.8		56.	7	57.
Centerline Distan	ce to Noise Co	ontour (in feet)	-							
				dBA	65 dE	BA	6	60 dBA	55	5 dBA
		Ldn.		5	10			22		48
		CNEL	: :	5	11			23		50

Tuesday, January 21, 2020

APPENDIX 9.1:

**REFERENCE NOISE SOURCE PHOTOS** 





# JN:12374 Reference Noise Source Photos



Main Track\_1 34, 2' 4.520000"117, 22' 7.970000"



Main Track\_2 34, 2' 4.520000"117, 22' 7.970000"



Main Track\_3 34, 2' 4.520000"117, 22' 7.970000"



Main Track\_4 34, 1' 25.140000"117, 22' 7.370000"



Main Track\_5 34, 1' 24.690000"117, 22' 7.420000"



Main Track\_6 34, 1' 24.940000"117, 22' 7.180000"

# JN:12374 Reference Noise Source Photos



Parking Lot\_1 34, 1' 22.710000"117, 22' 15.110000"



Parking Lot\_2 34, 1' 23.130000"117, 22' 15.090000"



Parking Lot\_3 34, 1' 23.250000"117, 22' 14.810000"



Parking Lot\_4 34, 1' 23.400000"117, 22' 14.650000"



Parking Lot\_5 34, 1' 22.510000"117, 22' 15.580000"



Veteran Track\_1 34, 1' 29.150000"117, 22' 9.540000"

# JN:12374 Reference Noise Source Photos



Veteran Track\_2 34, 1' 29.180000"117, 22' 9.650000"



Veteran Track\_3 34, 1' 29.170000"117, 22' 9.650000"



Veteran Track\_4 34, 1' 29.150000"117, 22' 9.650000"



Veteran Track\_5 34, 1' 29.110000"117, 22' 9.680000"



APPENDIX 9.2:

CADNAA NOISE MODEL





# 12374

CadnaA Noise Prediction Model

12374\_02.cna

Date:

06.02.20

Analyst: B. Lawson

**Receiver Noise Levels** 

Name	М.	ID		Level Lr		Lir	mit. Valı	ue		Land	l Use	Height	:	C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1		R1	54.7	54.7	61.3	55.0	45.0	0.0				1781.00	а	6245498.07	2218602.73	1781.00
R2		R2	50.0	50.0	56.7	55.0	45.0	0.0				1724.00	а	6246395.88	2219241.56	1724.00
R3		R3	48.0	48.0	54.7	55.0	45.0	0.0				1635.00	а	6248096.54	2218474.47	1635.00
R4		R4	49.8	49.8	56.5	55.0	45.0	0.0				1657.00	а	6248085.44	2216533.33	1657.00
R5		R5	52.1	52.1	58.8	55.0	45.0	0.0				1675.00	а	6247632.49	2215899.56	1675.00
R6		R6	53.3	53.3	60.0	55.0	45.0	0.0				1713.00	а	6247032.45	2215276.73	1713.00

## Point Source(s)

Name	M.	ID	R	esult. PW	'L		Lw/L	i	0	Correction	ı	Sound	d Reduction	Attenuation	Ор	erating Ti	me	К0	Freq.	Direct.	Height	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night					х	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		(ft)	(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245770.08	2215547.71	1750.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245770.95	2215488.82	1749.92
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245885.50	2216405.75	1752.72
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245888.36	2216553.39	1751.87
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245875.03	2216658.17	1751.66

## Area Source(s)

Name	M.	ID	R	esult. PW	/L	R	esult. PW	L''		Lw/L	i		Correctio	n	Soun	d Reduction	Attenuation	Ор	erating T	ime	ко	Freq.	Direct.	M	oving Pt. S	Src
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night					Number	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night
AREASOURCE		MAIN01	117.8	117.8	117.8	70.7	70.7	70.7	Lw	117.8		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		MAIN02	117.8	117.8	117.8	71.1	71.1	71.1	Lw	117.8		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING01	105.1	105.1	105.1	58.5	58.5	58.5	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING02	105.1	105.1	105.1	72.0	72.0	72.0	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING03	105.1	105.1	105.1	68.9	68.9	68.9	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING04	105.1	105.1	105.1	66.4	66.4	66.4	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING05	105.1	105.1	105.1	76.8	76.8	76.8	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		VETERAN01	113.5	113.5	113.5	67.8	67.8	67.8	Lw	113.5		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		VETERAN02	113.5	113.5	113.5	73.9	73.9	73.9	Lw	113.5		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		VETERAN03	113.5	113.5	113.5	68.4	68.4	68.4	Lw	113.5		0.0	0.0	0.0							0.0	500	(none)			



APPENDIX 9.3:

MSCHP CADNAA NOISE MODEL





## 12374

CadnaA Noise Prediction Model

12374\_03\_MSHCP.cna

Date:

07.02.20

Analyst: B. Lawson

Receiver Noise Levels

necciv	<b>C</b> .	110150														
Name	M.	ID		Level Lr		Lir	nit. Valı	ue		Land	l Use	Height	t	C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Y	Z
			(dBA) (dBA) (dBA)			(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
MSCHP_1		MSCHP_1	0,0,0,0,		65.0	0.0	0.0				1830.00	а	6245262.82	2218075.55	1830.00	
MSCHP_2		MSCHP_2	63.0	63.0	69.7	65.0	0.0	0.0				2000.00	а	6244700.72	2217662.76	2000.00
MSCHP_3		MSCHP_3	60.1	60.1	66.8	65.0	0.0	0.0				1900.00	а	6244683.37	2216693.33	1900.00
MSCHP_4		MSCHP_4	61.2	61.2	67.9	65.0	0.0	0.0				1805.00	а	6244676.10	2215649.22	1805.00
MSCHP_5		MSCHP_5	62.2	62.2	68.8	65.0	0.0	0.0				1855.00	а	6245306.26	2215341.83	1855.00

### Point Source(s)

		<u>``</u>																						
Name	М.	ID	R	esult. PW	'L		Lw / L	i	0	Correction	1	Soun	d Reduction	Attenuation	Op	erating Ti	me	ко	Freq.	Direct.	Height	C	oordinates	
			Day	Evening	Night	Туре	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night					x	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft <sup>2</sup> )		(min)	(min)	(min)	(dB)	(Hz)		(ft)	(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9			0.0							0.0	500	(none)	15.00 r	6245770.08	2215547.71	1750.00	
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245770.95	2215488.82	1749.92
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245885.50	2216405.75	1752.72
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245888.36	2216553.39	1751.87
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		0.0	0.0	0.0							0.0	500	(none)	15.00 r	6245875.03	2216658.17	1751.66

## Area Source(s)

Name	M.	ID	R	esult. PW	/L	Re	esult. PW	L''		Lw/L	i		Correctio	n	Sound	d Reduction	Attenuation	Op	erating T	ime	К0	Freq.	Direct.	M	oving Pt. S	Src
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night					Number	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night
AREASOURCE		MAIN01	117.8	117.8	117.8	70.7	70.7	70.7	Lw	117.8		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		MAIN02	117.8	117.8	117.8	71.1	71.1	71.1	Lw	117.8		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING01	105.1	105.1	105.1	58.5	58.5	58.5	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING02	105.1	105.1	105.1	72.0	72.0	72.0	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING03	105.1	105.1	105.1	68.9	68.9	68.9	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING04	105.1	105.1	105.1	66.4	66.4	66.4	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		PARKING05	105.1	105.1	105.1	76.8	76.8	76.8	Lw	105.1		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		VETERAN01	113.5	113.5	113.5	67.8	67.8	67.8	Lw	113.5		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		VETERAN02	113.5	113.5	113.5	73.9	73.9	73.9	Lw	113.5		0.0	0.0	0.0							0.0	500	(none)			
AREASOURCE		VETERAN03	113.5	113.5	113.5	68.4	68.4	68.4	Lw	113.5		0.0	0.0	0.0							0.0	500	(none)			

