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# **Keller Crossing Specific Plan**

## **NOISE IMPACT ANALYSIS**

### **COUNTY OF RIVERSIDE**

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## **LIST OF ABBREVIATED TERMS**

(1)	Reference
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
$L_{eq}$	Equivalent continuous (average) sound level
$L_{max}$	Maximum level measured over the time interval
mph	Miles per hour
PPV	Peak Particle Velocity
Project	Keller Crossing Specific Plan
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

## EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Keller Crossing Specific Plan development (“Project”). The Project site is located on the northwest corner of Winchester Road (SR-79) and Keller Road in the County of Riverside. The Project is to consist of a total of 356 single-family detached residential dwelling units, 80 attached senior housing units, a 6.5-acre sports park/active park, and 176,000 square feet of commercial retail uses. This noise study has been prepared to satisfy applicable County of Riverside noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

The results of this 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.

**TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS**

Analysis	Report Section	Significance Findings		
		Unmitigated	Mitigated	Mitigation Measure
Off-Site Traffic Noise	7	<i>Potentially Significant</i>	<i>Less Than Significant</i>	<i>NOI-1</i>
On-Site Traffic Noise	8	<i>Potentially Significant</i>	<i>Less Than Significant</i>	<i>NOI-2, NOI-3</i>
Operational Noise	10	<i>Less Than Significant</i>	-	-
Construction Noise	11	<i>Less Than Significant</i>	-	-
Construction Vibration		<i>Less Than Significant</i>	-	-

### OFF-SITE TRAFFIC NOISE ANALYSIS

Traffic generated by the operation of the proposed Project will influence the traffic noise levels in surrounding off-site areas. To quantify the traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 24 roadway segments surrounding the Project site were calculated based on the change in the average daily traffic (ADT) volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts found in *Keller Crossing Specific Plan Traffic Impact Analysis* prepared by Urban Crossroads, Inc. (2)

The results of this analysis show that one of the 24 study area roadway segments will experience a *potentially significant* off-site traffic noise level increase on Keller Road east of Leon Road (Segment #22). MM NOI-1 is identified below for existing and future noise-sensitive land uses adjacent to the potentially impacted off-site roadway segments:

#### **MM NOI-1: OFF-SITE TRAFFIC EXTERIOR NOISE MITIGATION**

To reduce the *potentially significant* Project-related off-site traffic noise level impacts at existing and future noise-sensitive land uses, rubberized asphalt is required as mitigation for Keller Road east of Leon Road (Segment #22) and Keller Road east of Pourroy Road to Winchester Road (SR-

79) as shown on Exhibit ES-A. With rubberized asphalt mitigation measure, the Project-related off-site traffic noise level increases would be reduced to *less than significant* impacts with mitigation.

## ON-SITE TRAFFIC NOISE ANALYSIS

An on-site exterior noise impact analysis has been completed to determine the traffic noise exposure and to identify potential necessary noise mitigation measures for the proposed Keller Crossing Specific Plan Project. It is expected that the primary source of noise impacts to the Project site will be traffic noise from Winchester Road (SR-79) and Keller Road. The on-site exterior noise analysis shows that unmitigated traffic noise levels will exceed County of Riverside 65 dBA CNEL exterior noise level standards for the noise sensitive residential land use and represent a *potentially significant* impact.

### MM NOI-2: ON-SITE TRAFFIC EXTERIOR NOISE MITIGATION

To reduce the *potentially significant* on-site traffic noise level impacts, the construction of 6-foot-high noise barriers is required for the outdoor living areas (backyards) of single-family residential uses in Planning Areas 1, 2 and 4 facing Keller Road. With the mitigation measures detailed in the Executive Summary and shown on Exhibit ES-A, the on-site exterior traffic noise levels would be reduced to *less than significant*.

The recommended noise control barriers shall be constructed so that the top of each wall extends to the recommended height above the pad elevation of the lot it is shielding. When the road is elevated above the pad elevation, the barrier shall extend to the recommended height above the highest point between the residential home and the road. The barrier shall provide a weight of at least 4 pounds per square foot of face area with no decorative cutouts or line-of-sight openings between shielded areas and the roadways, or a minimum transmission loss of 20 dBA. (3) The barrier must present a solid face from top to bottom. Unnecessary openings or decorative cutouts shall not be made. All gaps (except for weep holes) should be filled with grout or caulking.

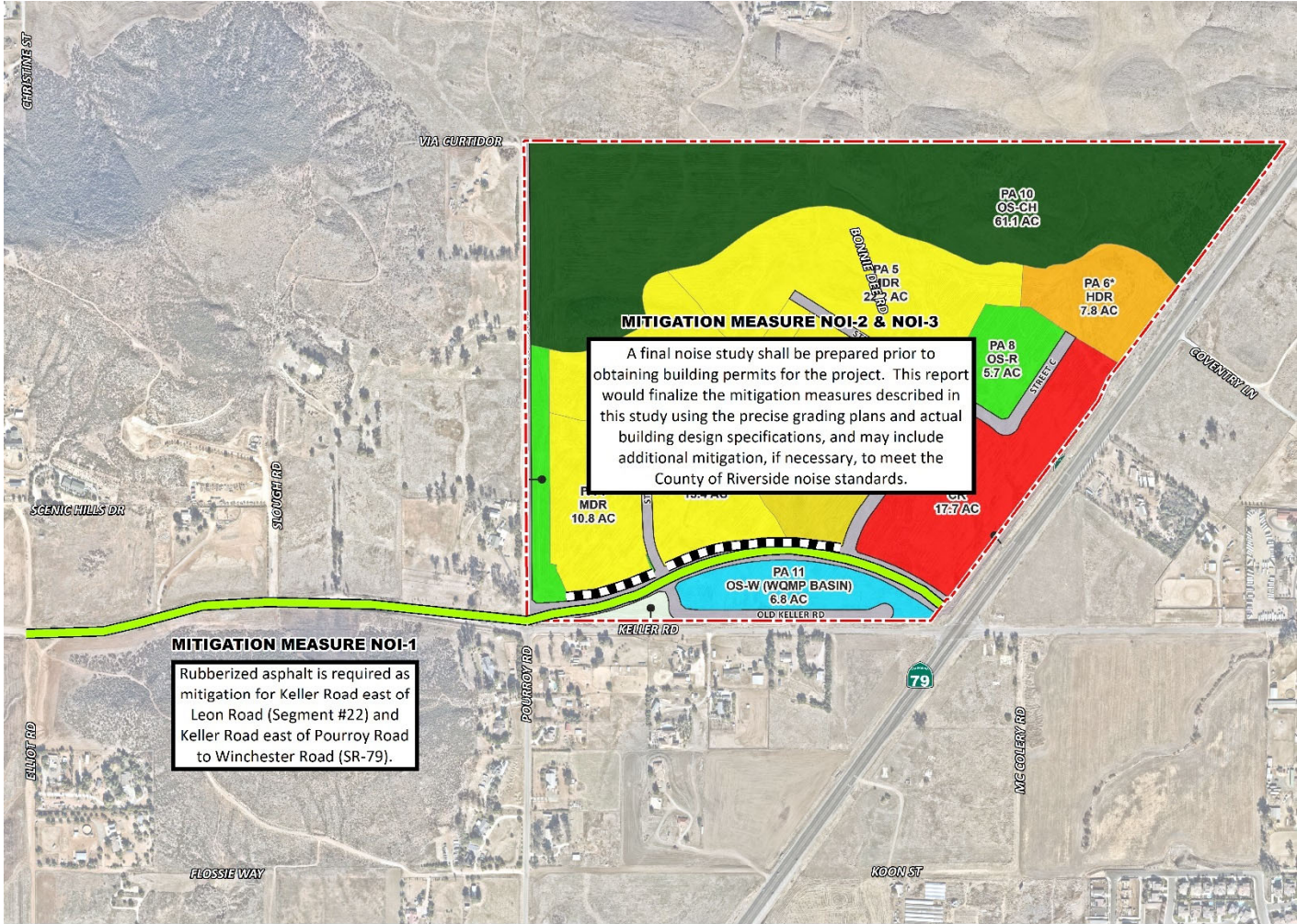
### MM NOI-3: ON-SITE TRAFFIC INTERIOR NOISE MITIGATION

To reduce the *potentially significant* on-site interior traffic noise level impacts, all land uses will require a windows-closed condition and a means of mechanical ventilation (e.g. air conditioning). In addition, the multi-family residential (VHDR) land uses in Planning Area 6 and the commercial land uses in Planning Area 7 facing Winchester Road (SR-79) will require upgraded windows and sliding glass doors with minimum STC ratings of 34. With the mitigation measures detailed in the Executive Summary and shown on Exhibit ES-A, the on-site interior traffic noise levels would be reduced to *less than significant*.



- Windows/Sliding Glass Doors: All residential units require windows and sliding glass doors that have well-fitted, well-weather-stripped assemblies, and the following sound transmission class (STC) ratings:
  1. Multi-family residential (VHDR) land uses in Planning Area 6 and the commercial land uses in Planning Area 7 facing Winchester Road (SR-79) require upgraded windows and sliding glass doors with minimum STC ratings of 34 (all windows/glass doors, all floors);

2. All other residential lots require windows and sliding glass doors with minimum sound transmission class (STC) ratings of 27.
- **Exterior Doors (Non-Glass):** All exterior doors shall be well weather-stripped and have well-sealed perimeter gaps around the doors to achieve the STC ratings recommended below: (4)
    1. Residential land uses in Planning Area 6 require upgraded doors with minimum STC ratings of 34 (all floors);
    2. All other residential lots require doors with minimum sound transmission class (STC) ratings of 27.
  - **Exterior Walls:** At any penetrations of exterior walls by pipes, ducts, or conduits, the space between the wall and pipes, ducts, or conduits shall be caulked or filled with mortar to form an airtight seal.
  - **Roof:** Roof sheathing of wood construction shall be per manufacturer's specification or caulked plywood of at least one-half inch thick. Ceilings shall be per manufacturer's specification or well-sealed gypsum board of at least one-half inch thick. Insulation with at least a rating of R-19 shall be used in the attic space.
  - **Ventilation:**
    1. Exterior vents of residential units in Planning Area 6 shall be oriented away from Winchester Road (SR-79). If such an orientation cannot be avoided, then an acoustical baffle shall be placed in the attic space behind the vents.
    2. Arrangements for any habitable room shall be such that any exterior door or window can be kept closed when the room is in use and still receive circulated air. A forced air circulation system (e.g. air conditioning) or active ventilation system (e.g. fresh air supply) shall be provided which satisfies the requirements of the Uniform Building Code.
  - **Future Noise Studies:** final noise studies shall be prepared for the future residential uses within Planning Area 1, 2, 4, 6 and 7 prior to obtaining building permits for the project. This report would finalize the mitigation measures described in this study using the precise grading plans and actual building design specifications, and may include additional mitigation, if necessary, to meet the interior noise level standards for residential (45 dBA CNEL) and commercial (50 dBA CNEL) land uses. These noise studies would utilize any recommendations identified in this study and use the precise grading plans and actual building design specifications to identify any additional mitigation, such as exterior noise barriers and/or building materials (e.g., sound transmission class ratings for windows and doors), if necessary, based on the site-specific noise impacts within these planning areas.

EXHIBIT ES-A: SUMMARY OF NOISE MITIGATION MEASURES



LEGEND:

-  Required 6-Foot High Wall
-  Rubberized Asphalt
-  Site Boundary

# 1 INTRODUCTION

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

## 1.1 SITE LOCATION

The proposed Project is located on the northwest corner of Winchester Road (SR-79) and Keller Road in the County of Riverside, as shown on Exhibit 1-A. The area surrounding the Project Site consists mostly of rural residential homes.

## 1.2 PROJECT DESCRIPTION

A preliminary land use plan for the proposed Project is shown on Exhibit 1-B. The Project is proposing to amend the Specific Plan with a mix of residential and commercial uses, as described below:

- Phase 1 (Opening Year of 2023) is anticipated to include the development of 195 single family detached residential dwelling units.
- Project Buildout (Buildout year of 2028) is anticipated to include a total of 356 single-family detached residential dwelling units, 80 attached senior housing units, a 5.7-acre sports park/active park, and 176,000 square feet of commercial retail uses. The commercial retail area is proposed to include a 50,000 square foot supermarket, 14,000 square foot pharmacy, 101,500 square feet of commercial retail uses, and 10,500 square feet of fast-food restaurant with drive-through window use. The commercial area land use assumptions are an estimation of the types of uses that could be developed within this area of the Specific Plan.



EXHIBIT 1-A: LOCATION MAP

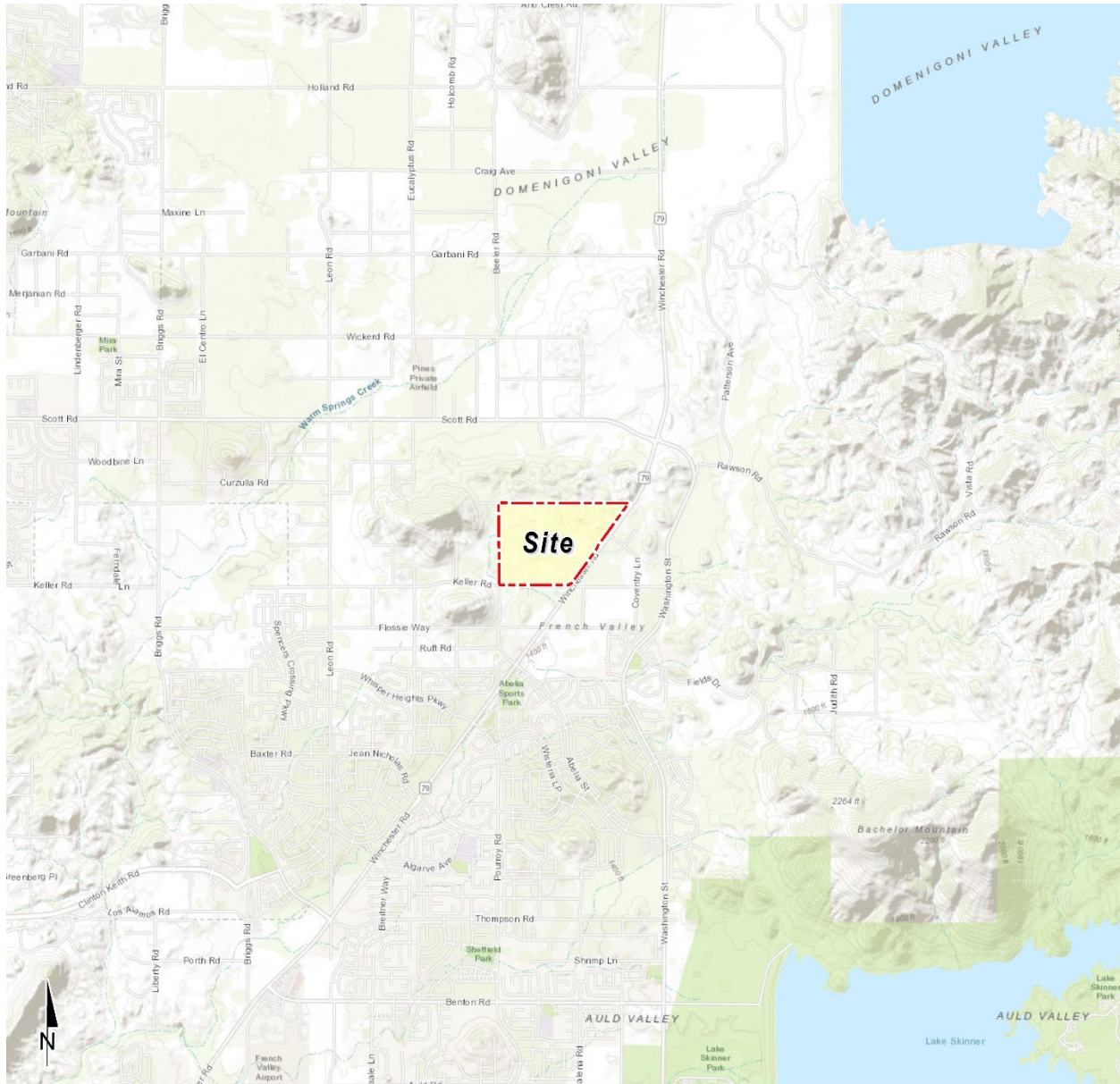
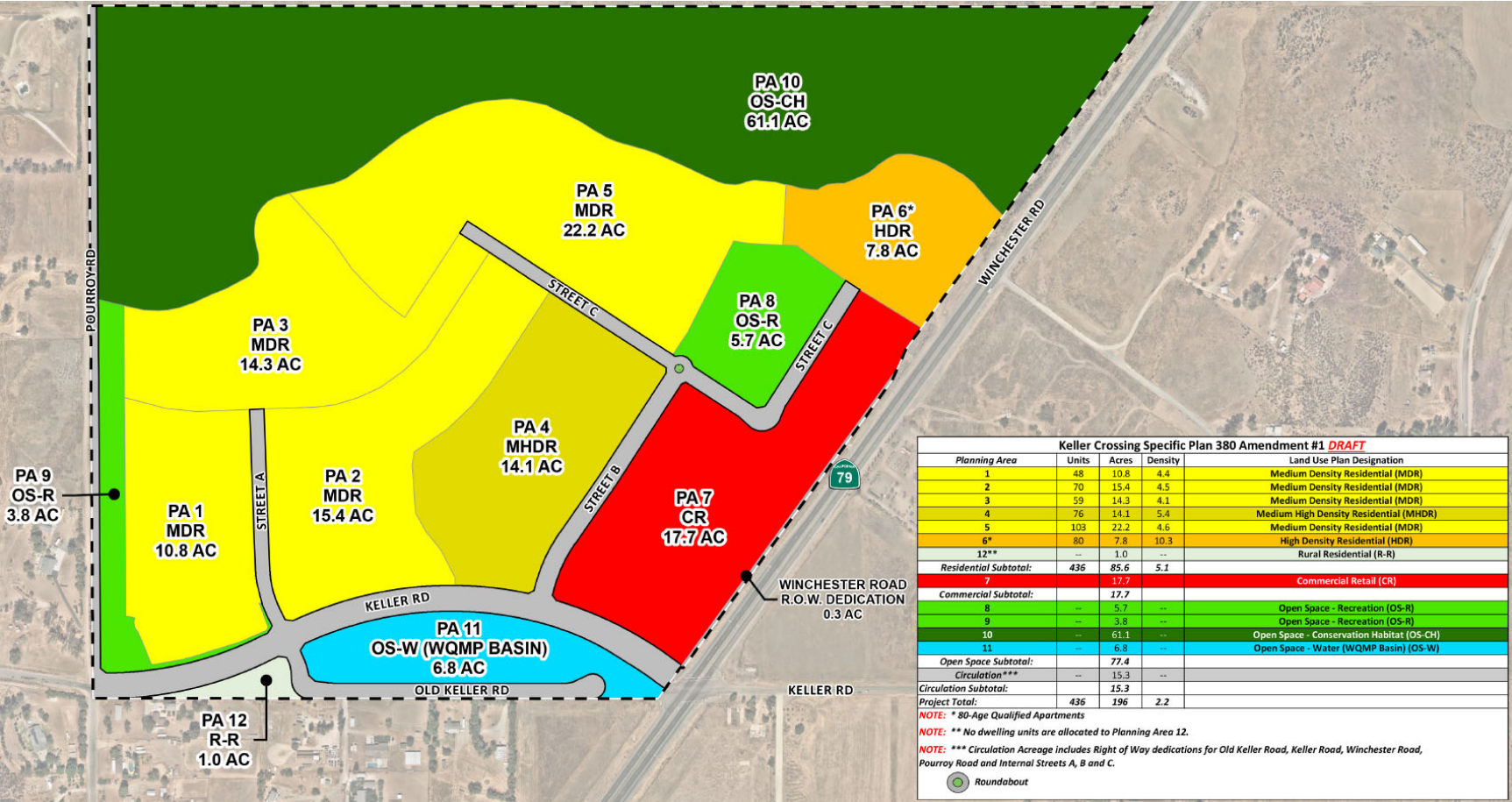




EXHIBIT 1-B: PRELIMINARY LAND USE PLAN



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## 2 FUNDAMENTALS

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

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

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

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

### 2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (5) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA

at approximately 1,000 feet, which can cause serious discomfort. (6) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

## 2.2 NOISE DESCRIPTORS

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

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

### 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. (7)

### **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. (5)

### **2.3.4 SHIELDING**

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

## **2.4 NOISE CONTROL**

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

## **2.5 NOISE BARRIER ATTENUATION**

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. (7) Noise barriers, however, do have limitations. For a noise barrier to work, it must block the line-of-sight path of sound from the noise source.

## 2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (8)

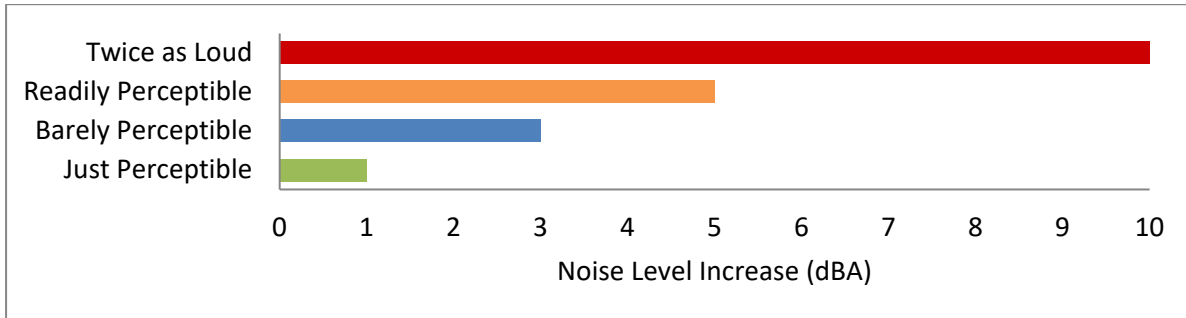
## 2.7 COMMUNITY RESPONSE TO NOISE

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 sixteen percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints may occur. Twenty to thirty percent of the population will not complain even in very severe noise environments. (9 pp. 8-6) Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Surveys have shown that community response to noise varies from no reaction to vigorous action for newly introduced noises averaging from 10 dB below existing to 25 dB above existing. (10) According to research originally published in the Noise Effects Handbook (9), the percentage of high annoyance ranges from approximately 0 percent at 45 dB or less, 10 percent are highly annoyed around 60 dB, and increases rapidly to approximately 70 percent being highly annoyed at approximately 85 dB or greater. Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA is considered barely perceptible, and changes of 5 dBA are considered readily perceptible. (7)

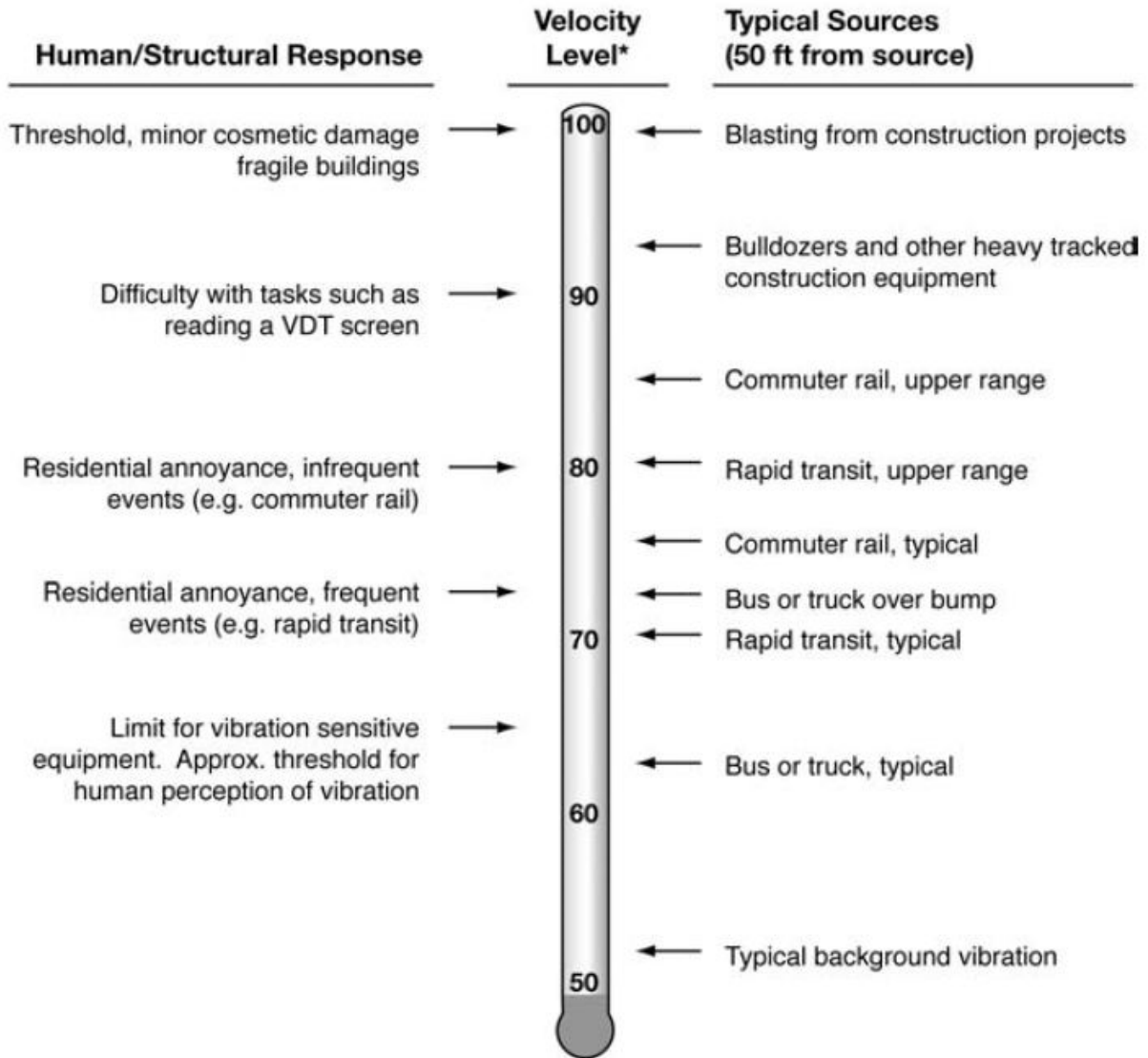
**EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION****2.8 VIBRATION**

Per the Federal Transit Administration (FTA) *Transit Noise Impact and Vibration Impact Assessment Manual* (10), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

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

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

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



\* RMS Vibration Velocity Level in VdB relative to  $10^{-6}$  inches/second

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



### 3 REGULATORY SETTING

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

#### 3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (11) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

##### 3.1.1 RESIDENTIAL CONSTRUCTION

The State of California's noise insulation standards for all residential units are codified in the California Code of Regulations (CCR), Title 24, Building Standards Administrative Code, Chapter 12, Section 1206. These noise standards are applied to new construction that contains dwelling units or sleeping units, such as residential and hotel or motel uses, in California for controlling interior noise levels resulting from exterior noise sources. For new buildings, the acceptable interior noise limit is 45 dBA CNEL in habitable rooms (12).

##### 3.1.2 NON-RESIDENTIAL CONSTRUCTION

The State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (13) These noise standards are applied to new construction in California for controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when non-residential structures are developed in areas where the exterior noise levels exceed 65 dBA CNEL, such as within a noise contour of an airport, freeway, railroad, and other noise source. If the development falls within an airport or freeway 65 dBA CNEL noise contour, buildings shall be constructed to provide an interior noise level environment attributable to exterior sources that does not exceed an hourly equivalent level of 50 dBA  $L_{eq}$  in occupied areas during any hour of operation.

### 3.2 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 the County of Riverside from excessive exposure to noise. (14) 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 policies 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 9-minute  $L_{eq}$  between 10:00 p.m. and 7:00 a.m.;*
  - b. 65 dBA 9-minute  $L_{eq}$  between 7:00 a.m. and 10:00 p.m.*
- N 13.1 Minimize the impacts of construction noise on adjacent uses within acceptable standards.*
- N 13.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse impacts on surrounding areas.*
- N 13.3 Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3) by requiring the developer to submit a construction-related noise mitigation plan to the [County] for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:*
  - i. Temporary noise attenuation fences;*
  - ii. Preferential location and equipment; and*
  - iii. Use of current noise suppression technology and equipment.*
- N 14.1 Enforce the California Building Standards that sets standards for building construction to mitigate interior noise levels to the tolerable 45 CNEL limit. These standards are utilized in conjunction with the Uniform Building Code by the County's Building Department to*

*ensure that noise protection is provided to the public. Some design features may include extra-dense insulation, double-paned windows, and dense construction materials.*

*N 16.3 Prohibit exposure of residential dwellings to perceptible ground vibration from passing trains as perceived at the ground or second floor. Perceptible motion shall be presumed to be a motion velocity of 0.01 inches/second over a range of 1 to 100 Hz.*

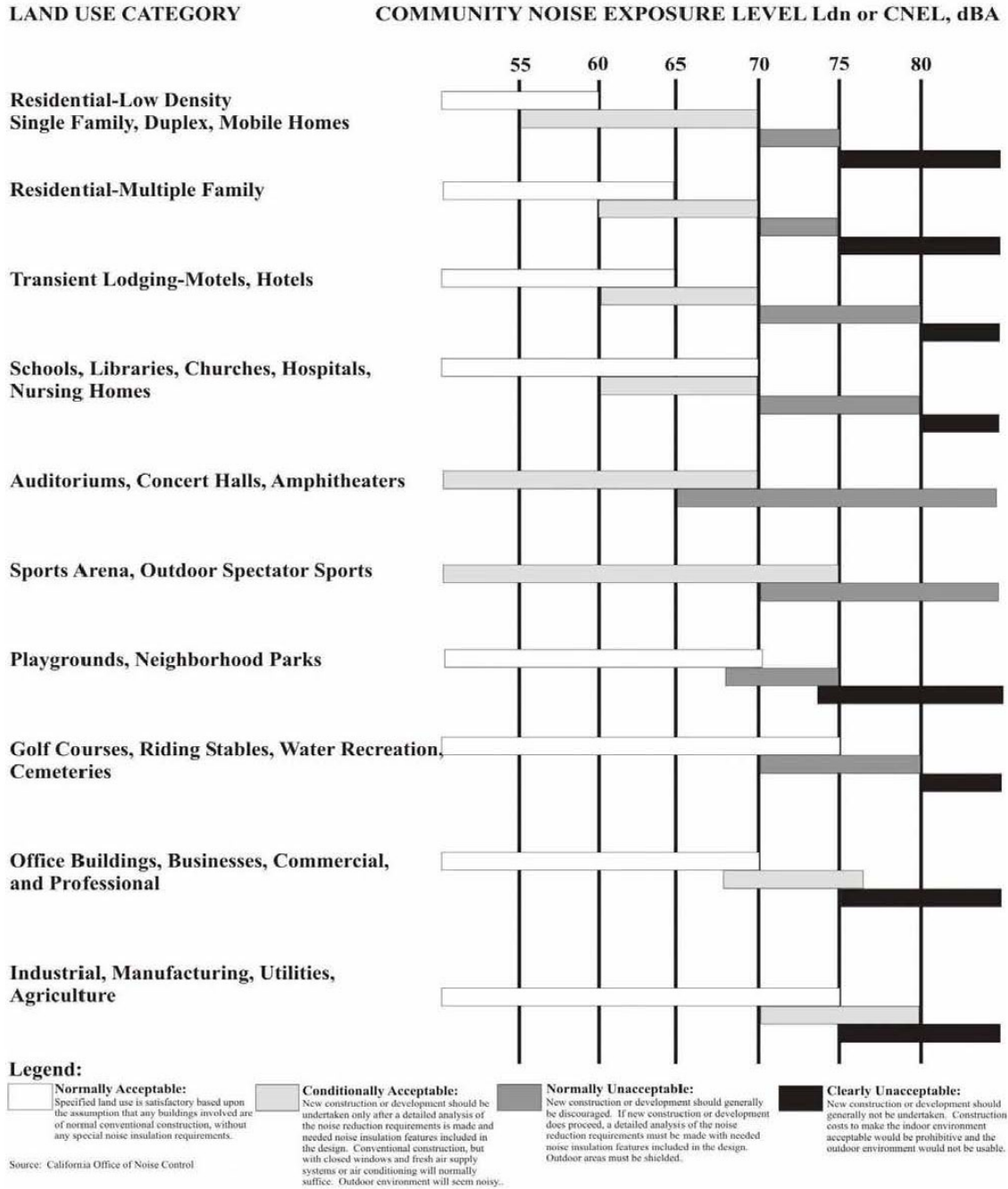
To ensure noise-sensitive land uses are protected from high levels of noise (N 1.1), Table N-1 of the Noise Element identifies guidelines to evaluate proposed developments based on exterior and interior noise level limits for land uses and requires a noise analysis to determine needed mitigation measures 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 exterior noise attenuation measures for sensitive land use exposed to transportation related noise levels higher than 65 dBA CNEL. In addition, the County of Riverside had adopted an interior noise level limit of 45 dBA CNEL (N 14.1).

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  $L_{eq}$  for daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA  $L_{eq}$  during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. To prevent high levels of construction noise from impacting noise-sensitive land uses, policies N 13.1 through 13.3 identify construction noise mitigation requirements for new development located near existing noise-sensitive land uses. Policy 16.3 establishes the vibration perception threshold for rail-related vibration levels, used in this analysis as a threshold for determining potential vibration impacts due to Project construction. (14)

### **3.2.1 LAND USE COMPATIBILITY GUIDELINES**

The noise criteria identified in the County of Riverside Noise Element (Table N-1) are guidelines to evaluate the land use compatibility of transportation related noise. The compatibility criteria, shown on Exhibit 3-A, provides the County with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels. The *Land Use Compatibility for Community Noise Exposure* matrix describes categories of compatibility and not specific noise standards. The Project's single-family residential land use within Planning Areas 1 to 5 is considered *normally acceptable* with exterior noise levels below 60 dBA CNEL, *conditionally acceptable* with exterior noise levels of up to 70 dBA CNEL, and *normally unacceptable* with exterior noise levels of up to 75 dBA CNEL. The Project's multi-family residential land use within Planning Area 6 is considered *normally acceptable* with exterior noise levels below 65 dBA CNEL, *conditionally acceptable* with exterior noise levels of up to 70 dBA CNEL and *normally unacceptable* with exterior noise levels of up to 75 dBA CNEL. The Project's commercial retail land use is considered *normally acceptable* with exterior noise levels below 70 dBA CNEL, *conditionally acceptable* with exterior noise levels up to 77 dBA CNEL and *clearly unacceptable* with exterior noise levels above up to 75 dBA CNEL.

**EXHIBIT 3-A: LAND USE COMPATIBILITY FOR COMMUNITY NOISE EXPOSURE**



Source: County of Riverside General Plan Noise Element, Table N-1.

### 3.2.2 COUNTY OF RIVERSIDE STATIONARY NOISE STANDARDS

The County of Riverside has set hourly average  $L_{eq}$  exterior noise limits to control the stationary-source associated with the development of the proposed Keller Crossing Specific Plan. The County considers noise generated using motor vehicles to be a stationary noise source when operated on private property such as at a loading dock. These facility-related noises, as projected to any portion of any surrounding property containing a *habitable dwelling, hospital, school, library or nursing home*, must not exceed the following worst-case noise levels. Policy N 4.1 of the County of Riverside General Plan Noise Element sets a stationary-source average  $L_{eq}$  exterior noise limit not to be exceeded for a cumulative period of more than ten minutes in any hour of 65 dBA  $L_{eq}$  for daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA  $L_{eq}$  during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. (14)

The County of Riverside Municipal Code Section 9.52.040 *General sound level standards* identify lower, more restrictive exterior noise level standards, which for the purpose of this report, are used to evaluate potential Project-related operational noise level limits instead of the higher the General Plan exterior noise level standards previously identified. The County of Riverside Municipal Code identifies exterior noise level limits of 55 dBA  $L_{eq}$  during the daytime hours of 7:00 a.m. to 10:00 p.m., and 45 dBA  $L_{eq}$  during the noise-sensitive nighttime hours of 10:00 p.m. to 7:00 a.m. for noise-sensitive uses. (15) The County of Riverside Municipal Code Noise Section is included in Appendix 3.1.

Based on several discussions with the County of Riverside Department of Environmental Health (DEH), Office of Industrial Hygiene (OIH), it is important to recognize that the County of Riverside Municipal Code noise level standards, incorrectly identify maximum noise level ( $L_{max}$ ) standards that should instead reflect the average  $L_{eq}$  noise levels. Moreover, the County of Riverside DEH OIH's April 15<sup>th</sup>, 2015 *Requirements for determining and mitigating, non-transportation noise source impacts to residential properties* also identifies operational (stationary-source) noise level limits using the  $L_{eq}$  metric, consistent with the direction of the County of Riverside General Plan guidelines and standards provided in the Noise Element. Therefore, this report has been prepared consistent with direction of the County of Riverside DEH OIH guidelines and standards using the average  $L_{eq}$  noise level metric for stationary-source (operational) noise level evaluation.

### 3.3 CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the County of Riverside has established limits to the hours of operation. Section 9.52.020 of the County's Noise Regulation ordinance indicates that noise associated with any private construction activity located within one-quarter of a mile from an inhabited dwelling is considered exempt between the hours of 6:00 a.m. and 6:00 p.m., during the months of June through September, and 7:00 a.m. and 6:00 p.m., during the months of October through May. (15) Neither the County's General Plan nor Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) *Transit Noise and Vibration*

*Impact Assessment Manual* is used for analysis of daytime construction impacts, as discussed below.

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA  $L_{eq}$  as a reasonable threshold for noise sensitive residential land use. (10 p. 179)

### **3.4 CONSTRUCTION VIBRATION STANDARDS**

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. Occasionally large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity.

The County of Riverside does not have vibration standards for temporary construction, but the County's General Plan Noise Element does contain the human reaction to typical vibration levels. Vibration levels with peak particle velocity of 0.0787 inches per second are considered readily perceptible and above 0.1968 in/sec are considered annoying to people in buildings. Further, County of Riverside General Plan Policy N 16.3 identifies a motion velocity perception threshold for vibration due to passing trains of 0.01 inches per second (in/sec) over the range of one to 100 Hz, which is used in this noise study to assess potential impacts due to Project construction vibration levels. (14)

## 4 SIGNIFICANCE CRITERIA

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

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

### 4.1 NOISE LEVEL INCREASES (THRESHOLD A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach *recognizes that there is no single noise increase that renders the noise impact significant*. (16) 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) (17) 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 ( $L_{eq}$ ).

The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and

their perceived acceptance are consistent with guidance provided by both the Federal Highway Administration (7 p. 9) and Caltrans (18 p. 2\_48).

#### **4.2 VIBRATION (THRESHOLD B)**

As described in Section 3.5, the vibration impacts originating from the construction of the Keller Crossing Specific Plan, vibration-generating activities are appropriately evaluated the thresholds of significance outlined in the County of Riverside General Plan. (14) These guidelines identify a motion velocity perception threshold for vibration due to passing trains of 0.01 inches per second (in/sec) over the range of one to 100 Hz, which is used in this noise study to assess potential impacts due to Project construction vibration levels.

#### **4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)**

CEQA Noise Threshold C applies when there are nearby public and private airports and/or air strips and focuses on land use compatibility of the Project to nearby airports and airstrips. The Project site is not located within two miles of an airport or airstrip. The closest major airport is the French Valley Airport located roughly 3.5 miles southwest of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Appendix G to the CEQA Guidelines, Noise Threshold C.



#### 4.4 SIGNIFICANCE CRITERIA SUMMARY

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

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

Analysis	Condition(s)	Significance Criteria	
		Daytime	Nighttime
Off-Site Traffic <sup>1</sup>	If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
	If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
	If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
On-Site Traffic <sup>2</sup>	Exterior Noise Level Criteria	65 dBA CNEL	
	Interior Noise Level Standard	45 dBA CNEL	
Operational	Exterior Noise Level Standards <sup>3</sup>	55 dBA L <sub>eq</sub>	45 dBA L <sub>eq</sub>
	If ambient is < 60 dBA Leq <sup>1</sup>	≥ 5 dBA L <sub>eq</sub> Project increase	
	If ambient is 60 - 65 dBA Leq <sup>1</sup>	≥ 3 dBA L <sub>eq</sub> Project increase	
	If ambient is > 65 dBA Leq <sup>1</sup>	≥ 1.5 dBA L <sub>eq</sub> Project increase	
Construction	Noise Level Threshold <sup>4</sup>	80 dBA L <sub>eq</sub>	
	Vibration Level Threshold <sup>5</sup>	0.01 in/sec RMS	

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

<sup>2</sup> County of Riverside General Plan Noise Element.

<sup>3</sup> County of Riverside General Plan Municipal Code, Section 9.52.040.

<sup>4</sup> Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

<sup>5</sup> County of Riverside General Plan Noise Element, Policy N 16.3.

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

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## 5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at five locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, February 10, 2021. Appendix 5.1 includes study area photos.

### 5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (19)

### 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.* (5) 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.* (10)

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. (10) 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 equivalent or the hourly energy average 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.

**TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS**

Location <sup>1</sup>	Description	Energy Average Noise Level (dBA $L_{eq}$ ) <sup>2</sup>	
		Daytime	Nighttime
L1	Located east of SR-79 and south of Elmhurst Lane	46.8	38.0
L2	Located at the southeast corner of Keller Road and Keller Flat Court	56.5	51.9
L3	Located at the northeast corner of Keller Road and Pourroy Road	64.5	60.7
L4	Located West Pourroy Road near 33975 Pourroy Road	55.9	54.2
L5	Located at the northwest corner of the Project site near the end of Pourroy Road.	49.7	41.3

<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.

Table 5-1 provides the equivalent noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each of the daytime and nighttime hours.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



**LEGEND:**

 Measurement Locations

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## 6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with the County of Riverside *Land Use Compatibility for Community Noise Exposure* guidelines outline on Exhibit 3-A, all transportation related noise levels are presented in terms of the 24-hour CNEL's.

### 6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (20) 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. (21) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (22)

This 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. (23)

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

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 24 off-site study area roadway segments, the distance from the centerline to adjacent receiving land use based on the functional roadway classifications per the County of Riverside General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study are presented on Table 6-2 are based on the *Keller Crossing Specific Plan Traffic Impact Analysis* prepared by Urban Crossroads, Inc. for the following traffic scenarios:

1. Existing (2021) Conditions Without Project
2. Existing (2021) Conditions With Project (Project Buildout)
3. Existing plus Ambient Growth plus Cumulative (EAC) (2028) Without Project
4. Existing plus Ambient Growth plus Cumulative (EAC) (2028) With Project (Project Buildout)
5. Horizon Year (2040) Without Project
6. Horizon Year (2040) With Project (Project Buildout)

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Receiving Land Use <sup>1</sup>	Classification <sup>2</sup>	Centerline Distance to Receiving Land Use <sup>3</sup>	Vehicle Speed (mph)
1	Menifee Rd.	n/o Scott Rd.	Sensitive	Arterial	64'	50
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	Major	50'	45
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	Major	50'	45
4	Leon Rd.	s/o Scott Rd.	Sensitive	Major	59'	55
5	Leon Rd.	s/o Keller Rd.	Sensitive	Major	59'	50
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	Major	59'	50
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	Major	59'	50
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	Major	59'	45
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	Expressway	110'	65
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	Expressway	110'	65
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	Expressway	110'	60
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	Expressway	110'	60
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	Expressway	110'	60
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	Expressway	110'	60
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	Expressway	110'	60
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	Expressway	110'	60
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	Expressway	110'	60
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	Expressway	110'	60
19	Scott Rd.	w/o Menifee Rd.	Sensitive	Urban Arterial	76'	55
20	Scott Rd.	e/o Menifee Rd.	Sensitive	Urban Arterial	76'	55
21	Scott Rd.	w/o Leon Rd.	Sensitive	Urban Arterial	76'	55
22	Keller Rd.	e/o Leon Rd.	Sensitive	Secondary	50'	50
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	Urban Arterial	67'	50
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	Urban Arterial	67'	55

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

<sup>2</sup> Keller Crossing Traffic Impact Analysis, Urban Crossroads, Inc.

<sup>3</sup> Based upon the right-of-way distances for each roadway classification provided in the General Plan Circulation Element.



TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes <sup>1</sup>					
			Existing (2020)		EAC (2028)		HY 2040	
			Without Project	With Project Buildout	Without Project	With Project Buildout	Without Project	With Project Buildout
1	Menifee Rd.	n/o Scott Rd.	11,004	11,414	26,493	26,903	29,143	29,597
2	Whitewood Rd.	n/o Clinton Keith Rd.	25,689	25,909	38,321	38,541	42,154	42,374
3	Whitewood Rd.	s/o Clinton Keith Rd.	19,354	19,442	25,754	25,842	28,329	28,417
4	Leon Rd.	s/o Scott Rd.	5,684	7,668	19,941	21,925	21,935	23,919
5	Leon Rd.	s/o Keller Rd.	5,717	6,845	16,854	17,982	18,540	19,668
6	Leon Rd.	n/o Jean Nicholas Rd.	8,343	9,471	23,075	24,203	25,383	26,511
7	Leon Rd.	s/o Jean Nicholas Rd.	10,836	11,964	23,979	25,107	26,377	27,505
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	23,272	23,776	38,298	38,802	38,802	39,306
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	39,930	40,748	63,638	64,456	64,456	65,274
10	Winchester Rd. (SR-79)	n/o Scott Rd.	39,829	40,649	84,062	84,882	92,468	93,288
11	Winchester Rd. (SR-79)	s/o Scott Rd.	27,623	28,443	56,659	57,479	62,468	63,288
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	28,955	31,009	61,426	63,480	67,568	69,622
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	27,865	29,509	58,737	60,381	64,611	66,255
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	38,881	40,303	72,002	73,424	79,202	80,624
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	53,515	54,717	99,864	101,066	109,851	111,053
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	48,296	49,328	81,807	82,839	89,988	91,020
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	51,852	52,570	72,948	73,666	80,243	80,961
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	54,693	55,191	75,284	75,782	82,813	83,311
19	Scott Rd.	w/o Menifee Rd.	23,611	24,745	52,935	54,069	58,228	59,362
20	Scott Rd.	e/o Menifee Rd.	23,729	25,397	63,118	64,786	69,430	71,098
21	Scott Rd.	w/o Leon Rd.	11,477	13,417	54,555	56,495	60,010	61,950
22	Keller Rd.	e/o Leon Rd.	1,197	4,309	4,499	7,611	4,949	8,061
23	Clinton Keith Rd.	w/o Whitewood Rd.	35,285	36,105	63,135	63,955	69,449	70,269
24	Clinton Keith Rd.	e/o Whitewood Rd.	27,091	28,219	53,559	54,687	58,915	60,043

<sup>1</sup> Keller Crossing Traffic Analysis, Urban Crossroads, Inc.

The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. In addition, the off-site traffic noise analysis maintains a peak hour to average daily traffic (peak-to-daily) relationship of approximately 8.08%. The *County of Riverside General Plan Noise Element (14)* 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.

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits and Table 6-4 presents the traffic flow distributions (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks, and heavy trucks for input into the FHWA noise prediction model.

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

Vehicle Type	Time of Day Splits <sup>1</sup>			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
<b>Riverside County (Expressway, Arterial, Major)</b>				
Autos	75.55%	14.02%	10.43%	100.00%
Medium Trucks	48.00%	2.00%	50.00%	100.00%
Heavy Trucks	48.00%	2.00%	50.00%	100.00%
<b>Riverside County (Secondary, Collector)</b>				
Autos	75.55%	13.96%	10.49%	100.00%
Medium Trucks	48.92%	2.17%	48.91%	100.00%
Heavy Trucks	47.30%	5.40%	47.30%	100.00%

<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: TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)**

Roadway	Total % Traffic Flow			Total
	Autos	Medium Trucks	Heavy Trucks	
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.

### 6.1.2 ON-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-5 presents the on-site roadway parameters including the ADT volumes used for this study. The on-site roadway parameters are based on the County of Riverside General Plan Circulation Element roadway classifications and consistent with the County of Riverside office of Industrial Hygiene *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures*. (23)

The maximum two-way traffic volumes at a level of service C, shown on Table 6-5, were obtained from Figure C-3 of the 2008 County of Riverside General Plan Circulation Element (24) and reflect future long-range traffic conditions needed to assess the on-site traffic noise environment and to identify the appropriate noise mitigation measures that address the worst-case future noise conditions. Consistent with the County of Riverside Office of Industrial Hygiene noise study requirements, hard site conditions were used to analyze the potential on-site traffic noise impacts for the Project study area. (23) Hard site conditions account for the sound propagation loss over a reflective surface between the source and the receiver.

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

Location	Roadway Segment	Classification <sup>1</sup>	Lanes	Average Daily Traffic Volume <sup>2</sup>	Speed Limit (mph) <sup>2</sup>	Site Conditions <sup>2</sup>
PA 1, PA 2, PA 4	Keller Rd.	Secondary	4	20,700	40	Hard
PA 6	Winchester Pkwy. (SR-79)	Expressway	8	65,400	40	Hard

<sup>1</sup> Road classifications based upon the County of Riverside General Plan Circulation Element.

<sup>2</sup> County of Riverside Office of Industrial Hygiene Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures.

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## 7 OFF-SITE TRAFFIC NOISE ANALYSIS

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

### 7.1 NOISE CONTOURS

Noise contours were used to assess the Project's incremental 24-hour dBA CNEL traffic-related noise impacts at receiving land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA CNEL noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate traffic 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 24 study area roadway segments analyzed from the without Project to the with Project conditions in each of the following conditions:

1. Existing (2021) Without Project
2. Existing (2021) With Project (Project Buildout)
3. Existing plus Ambient Growth plus Cumulative (EAC) (2028) Without Project
4. Existing plus Ambient Growth plus Cumulative (EAC) (2028) With Project (Project Buildout)
5. Horizon Year (2040) Without Project
6. Horizon Year (2040) With Project (Project Buildout)

Appendix 7.1 includes a summary of the dBA CNEL traffic noise level contours for each of the traffic scenarios.

TABLE 7-1: EXISTING (2021) WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Nearest Receiving Land Use (dBA) <sup>2</sup>	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Menifee Rd.	n/o Scott Rd.	Sensitive	69.1	RW	119	257
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	78.2	176	380	818
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	77.0	146	314	677
4	Leon Rd.	s/o Scott Rd.	Sensitive	67.5	RW	87	188
5	Leon Rd.	s/o Keller Rd.	Sensitive	71.1	70	150	323
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	72.7	90	193	416
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	73.9	107	230	495
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	76.4	157	337	726
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	78.1	384	828	1,783
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	78.1	383	826	1,780
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	75.9	272	585	1,261
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	76.1	280	604	1,302
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	75.9	273	589	1,269
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	77.4	341	735	1,584
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	78.8	422	910	1,960
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	78.3	394	850	1,831
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	78.6	414	891	1,919
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	78.9	429	923	1,989
19	Scott Rd.	w/o Menifee Rd.	Sensitive	76.8	214	462	995
20	Scott Rd.	e/o Menifee Rd.	Sensitive	76.8	215	464	999
21	Scott Rd.	w/o Leon Rd.	Sensitive	73.6	133	286	615
22	Keller Rd.	e/o Leon Rd.	Sensitive	60.7	RW	RW	56
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	78.9	263	567	1,222
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	78.5	248	534	1,151

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

<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.

TABLE 7-2: EXISTING (2021) WITH PROJECT (PROJECT BUILDOUT) CONTOURS

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Nearest Receiving Land Use (dBA) <sup>2</sup>	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Menifee Rd.	n/o Scott Rd.	Sensitive	69.2	RW	122	264
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	78.2	177	382	822
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	77.0	146	315	679
4	Leon Rd.	s/o Scott Rd.	Sensitive	68.8	RW	106	229
5	Leon Rd.	s/o Keller Rd.	Sensitive	71.9	79	169	365
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	73.3	98	210	453
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	74.3	114	246	529
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	76.4	159	342	737
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	78.2	389	839	1,807
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	78.2	389	838	1,804
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	76.0	277	597	1,286
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	76.4	294	632	1,362
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	76.2	284	612	1,318
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	77.5	350	753	1,623
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	78.9	429	923	1,990
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	78.4	400	862	1,857
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	78.7	417	899	1,937
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	78.9	431	929	2,001
19	Scott Rd.	w/o Menifee Rd.	Sensitive	77.0	221	477	1,027
20	Scott Rd.	e/o Menifee Rd.	Sensitive	77.1	225	485	1,045
21	Scott Rd.	w/o Leon Rd.	Sensitive	74.3	147	317	683
22	Keller Rd.	e/o Leon Rd.	Sensitive	66.3	RW	61	131
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	79.0	267	576	1,241
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	78.7	255	549	1,183

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

<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.

TABLE 7-3: EAC (2028) WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Nearest Receiving Land Use (dBA) <sup>2</sup>	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Menifee Rd.	n/o Scott Rd.	Sensitive	72.9	100	215	462
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	79.9	230	495	1,067
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	78.2	176	380	819
4	Leon Rd.	s/o Scott Rd.	Sensitive	73.0	93	201	433
5	Leon Rd.	s/o Keller Rd.	Sensitive	75.8	143	309	665
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	77.1	177	380	820
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	77.3	181	390	841
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	78.5	218	470	1,013
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	80.2	524	1,129	2,433
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	81.4	631	1,359	2,929
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	79.0	439	945	2,036
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.4	463	997	2,149
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.2	449	968	2,086
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	80.1	515	1,109	2,389
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	81.5	640	1,379	2,971
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	80.6	560	1,207	2,601
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	80.1	519	1,119	2,410
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	80.2	530	1,142	2,461
19	Scott Rd.	w/o Menifee Rd.	Sensitive	80.3	367	792	1,705
20	Scott Rd.	e/o Menifee Rd.	Sensitive	81.0	413	890	1,918
21	Scott Rd.	w/o Leon Rd.	Sensitive	80.4	375	808	1,740
22	Keller Rd.	e/o Leon Rd.	Sensitive	66.5	RW	63	135
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	81.4	388	836	1,801
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	81.5	391	842	1,813

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

<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.



TABLE 7-4: EAC (2028) WITH PROJECT (PROJECT BUILDOUT) CONTOURS

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Nearest Receiving Land Use (dBA) <sup>2</sup>	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Menifee Rd.	n/o Scott Rd.	Sensitive	72.9	101	217	467
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	80.0	231	497	1,072
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	78.2	177	381	821
4	Leon Rd.	s/o Scott Rd.	Sensitive	73.4	99	214	461
5	Leon Rd.	s/o Keller Rd.	Sensitive	76.1	150	322	694
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	77.3	182	393	846
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	77.5	187	402	867
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	78.6	220	474	1,021
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	80.2	529	1,139	2,454
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	81.4	635	1,368	2,948
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	79.1	443	954	2,056
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.5	473	1,020	2,197
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.3	458	986	2,125
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	80.1	521	1,123	2,420
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	81.5	645	1,390	2,995
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	80.7	565	1,218	2,623
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	80.2	523	1,126	2,426
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	80.3	533	1,147	2,472
19	Scott Rd.	w/o Menifee Rd.	Sensitive	80.4	373	803	1,730
20	Scott Rd.	e/o Menifee Rd.	Sensitive	81.1	420	906	1,951
21	Scott Rd.	w/o Leon Rd.	Sensitive	80.5	384	827	1,781
22	Keller Rd.	e/o Leon Rd.	Sensitive	68.8	RW	89	192
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	81.5	391	843	1,817
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	81.6	396	853	1,838

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

<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.

TABLE 7-5: HORIZON YEAR (2040) WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Nearest Receiving Land Use (dBA) <sup>2</sup>	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Menifee Rd.	n/o Scott Rd.	Sensitive	73.3	106	229	493
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	80.4	245	528	1,138
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	78.6	188	405	873
4	Leon Rd.	s/o Scott Rd.	Sensitive	73.4	99	214	461
5	Leon Rd.	s/o Keller Rd.	Sensitive	76.2	153	329	708
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	77.6	188	405	873
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	77.7	193	416	896
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	78.6	220	474	1,021
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	80.2	529	1,139	2,454
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	81.8	672	1,449	3,121
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	79.4	468	1,009	2,173
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.8	493	1,063	2,290
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.6	479	1,032	2,223
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	80.5	548	1,182	2,546
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	81.9	682	1,470	3,166
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	81.0	597	1,287	2,772
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	80.5	553	1,192	2,568
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	80.7	565	1,217	2,623
19	Scott Rd.	w/o Menifee Rd.	Sensitive	80.7	391	843	1,817
20	Scott Rd.	e/o Menifee Rd.	Sensitive	81.4	440	948	2,043
21	Scott Rd.	w/o Leon Rd.	Sensitive	80.8	399	861	1,854
22	Keller Rd.	e/o Leon Rd.	Sensitive	66.9	RW	67	144
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	81.9	414	891	1,920
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	81.9	416	897	1,932

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

<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.

TABLE 7-6: HORIZON YEAR (2040) WITH PROJECT (PROJECT BUILDOUT) CONTOURS

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Nearest Receiving Land Use (dBA) <sup>2</sup>	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Menifee Rd.	n/o Scott Rd.	Sensitive	73.4	107	231	498
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	80.4	246	530	1,141
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	78.6	188	406	875
4	Leon Rd.	s/o Scott Rd.	Sensitive	73.8	105	227	489
5	Leon Rd.	s/o Keller Rd.	Sensitive	76.4	159	342	737
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	77.7	194	417	899
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	77.9	199	428	921
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	78.6	222	478	1,030
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	80.3	533	1,148	2,474
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	81.8	676	1,457	3,139
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	79.5	472	1,018	2,192
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.9	503	1,084	2,336
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.7	487	1,049	2,260
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	80.5	555	1,196	2,576
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	81.9	687	1,480	3,189
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	81.1	602	1,296	2,793
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	80.6	557	1,199	2,583
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	80.7	567	1,222	2,633
19	Scott Rd.	w/o Menifee Rd.	Sensitive	80.8	397	854	1,841
20	Scott Rd.	e/o Menifee Rd.	Sensitive	81.5	447	964	2,076
21	Scott Rd.	w/o Leon Rd.	Sensitive	80.9	408	879	1,894
22	Keller Rd.	e/o Leon Rd.	Sensitive	69.0	RW	93	200
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	81.9	417	898	1,935
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	82.0	422	908	1,957

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

<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.

## 7.2 EXISTING (2021) PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the existing traffic scenarios identified in the *Keller Crossing Specific Plan 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 conditions when the Project is built and fully occupied. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels range from 60.7 to 78.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions range from 66.3 to 79.0 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases range from 0.0 to 5.6 dBA CNEL on the study area roadway segments.

Based on the significance criteria for off-site traffic noise presented in Table 4-1, existing noise sensitive uses on the following study area roadway segment is shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project traffic under Existing with Project conditions.

- Keller Road east of Leon Road (Segment #22).

Section 7.5 describes the off-site traffic noise mitigation measures considered in this analysis. All other roadway segments would not experience noise level increases under Existing with Project conditions that would exceed the established thresholds of significance.

## 7.3 EXISTING PLUS AMBIENT GROWTH PLUS CUMULATIVE (EAC) (2028) PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-4 presents the EAC (2028) without Project conditions CNEL noise levels. The EAC (2028) without Project exterior noise levels range from 66.5 to 81.5 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-5 shows the EAC (2028) with Project conditions range from 68.8 to 81.6 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases range from 0.0 to 2.3 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, existing noise sensitive uses on the following study area roadway segment is shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project traffic under EAC (2028) with Project conditions.

- Keller Road east of Leon Road (Segment #22).

## 7.4 HORIZON YEAR (2040) PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the Horizon Year 2040 without Project conditions CNEL noise levels. The Horizon Year 2040 without Project exterior noise levels range from 66.9 to 81.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography.

Table 7-6 shows the Horizon Year 2040 with Project conditions range from 69.0 to 82.0 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 2.1 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, existing noise sensitive uses on the following study area roadway segment is shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project traffic under Horizon Year with Project conditions.

- Keller Road east of Leon Road (Segment #22).

TABLE 7-7: EXISTING (2021) PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Noise-Sensitive Land Use?	Incremental Noise Level Increase Threshold <sup>3</sup>	
				No Project	With Project	Project Addition		Limit	Exceeded?
1	Menifee Rd.	n/o Scott Rd.	Sensitive	69.1	69.2	0.1	Yes	1.5	No
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	78.2	78.2	0.0	Yes	1.5	No
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	77.0	77.0	0.0	Yes	1.5	No
4	Leon Rd.	s/o Scott Rd.	Sensitive	67.5	68.8	1.3	Yes	1.5	No
5	Leon Rd.	s/o Keller Rd.	Sensitive	71.1	71.9	0.8	Yes	1.5	No
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	72.7	73.3	0.6	Yes	1.5	No
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	73.9	74.3	0.4	Yes	1.5	No
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	76.4	76.4	0.0	Yes	1.5	No
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	78.1	78.2	0.1	Yes	1.5	No
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	78.1	78.2	0.1	Yes	1.5	No
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	75.9	76.0	0.1	Yes	1.5	No
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	76.1	76.4	0.3	Yes	1.5	No
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	75.9	76.2	0.3	Yes	1.5	No
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	77.4	77.5	0.1	Yes	1.5	No
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	78.8	78.9	0.1	Yes	1.5	No
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	78.3	78.4	0.1	No	3.0	No
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	78.6	78.7	0.1	Yes	1.5	No
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	78.9	78.9	0.0	Yes	1.5	No
19	Scott Rd.	w/o Menifee Rd.	Sensitive	76.8	77.0	0.2	Yes	1.5	No
20	Scott Rd.	e/o Menifee Rd.	Sensitive	76.8	77.1	0.3	Yes	1.5	No
21	Scott Rd.	w/o Leon Rd.	Sensitive	73.6	74.3	0.7	Yes	1.5	No
22	Keller Rd.	e/o Leon Rd.	Sensitive	60.7	66.3	5.6	Yes	3.0	Yes
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	78.9	79.0	0.1	Yes	1.5	No
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	78.5	78.7	0.2	Yes	1.5	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.<sup>2</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>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-2)?

TABLE 7-8: EAC PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Noise-Sensitive Land Use?	Incremental Noise Level Increase Threshold <sup>3</sup>	
				No Project	With Project	Project Addition		Limit	Exceeded?
1	Menifee Rd.	n/o Scott Rd.	Sensitive	72.9	72.9	0.0	Yes	1.5	No
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	79.9	80.0	0.1	Yes	1.5	No
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	78.2	78.2	0.0	Yes	1.5	No
4	Leon Rd.	s/o Scott Rd.	Sensitive	73.0	73.4	0.4	Yes	1.5	No
5	Leon Rd.	s/o Keller Rd.	Sensitive	75.8	76.1	0.3	Yes	1.5	No
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	77.1	77.3	0.2	Yes	1.5	No
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	77.3	77.5	0.2	Yes	1.5	No
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	78.5	78.6	0.1	Yes	1.5	No
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	80.2	80.2	0.0	Yes	1.5	No
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	81.4	81.4	0.0	Yes	1.5	No
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	79.0	79.1	0.1	Yes	1.5	No
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.4	79.5	0.1	Yes	1.5	No
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.2	79.3	0.1	Yes	1.5	No
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	80.1	80.1	0.0	Yes	1.5	No
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	81.5	81.5	0.0	Yes	1.5	No
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	80.6	80.7	0.1	No	3.0	No
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	80.1	80.2	0.1	Yes	1.5	No
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	80.2	80.3	0.1	Yes	1.5	No
19	Scott Rd.	w/o Menifee Rd.	Sensitive	80.3	80.4	0.1	Yes	1.5	No
20	Scott Rd.	e/o Menifee Rd.	Sensitive	81.0	81.1	0.1	Yes	1.5	No
21	Scott Rd.	w/o Leon Rd.	Sensitive	80.4	80.5	0.1	Yes	1.5	No
22	Keller Rd.	e/o Leon Rd.	Sensitive	66.5	68.8	2.3	Yes	1.5	Yes
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	81.4	81.5	0.1	Yes	1.5	No
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	81.5	81.6	0.1	Yes	1.5	No

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

<sup>2</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>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-2)?

TABLE 7-9: HORIZON YEAR (2040) PROJECCT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use <sup>1</sup>	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Noise-Sensitive Land Use?	Incremental Noise Level Increase Threshold <sup>3</sup>	
				No Project	With Project	Project Addition		Limit	Exceeded?
1	Menifee Rd.	n/o Scott Rd.	Sensitive	73.3	73.4	0.1	Yes	1.5	No
2	Whitewood Rd.	n/o Clinton Keith Rd.	Sensitive	80.4	80.4	0.0	Yes	1.5	No
3	Whitewood Rd.	s/o Clinton Keith Rd.	Sensitive	78.6	78.6	0.0	Yes	1.5	No
4	Leon Rd.	s/o Scott Rd.	Sensitive	73.4	73.8	0.4	Yes	1.5	No
5	Leon Rd.	s/o Keller Rd.	Sensitive	76.2	76.4	0.2	Yes	1.5	No
6	Leon Rd.	n/o Jean Nicholas Rd.	Sensitive	77.6	77.7	0.1	Yes	1.5	No
7	Leon Rd.	s/o Jean Nicholas Rd.	Sensitive	77.7	77.9	0.2	Yes	1.5	No
8	Winchester Rd. (SR-79)	n/o Domenigoni Pkwy.	Sensitive	78.6	78.6	0.0	Yes	1.5	No
9	Winchester Rd. (SR-79)	s/o Domenigoni Pkwy.	Sensitive	80.2	80.3	0.1	Yes	1.5	No
10	Winchester Rd. (SR-79)	n/o Scott Rd.	Sensitive	81.8	81.8	0.0	Yes	1.5	No
11	Winchester Rd. (SR-79)	s/o Scott Rd.	Sensitive	79.4	79.5	0.1	Yes	1.5	No
12	Winchester Rd. (SR-79)	n/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.8	79.9	0.1	Yes	1.5	No
13	Winchester Rd. (SR-79)	s/o Whisper Heights Pkwy./Pourroy Rd.	Sensitive	79.6	79.7	0.1	Yes	1.5	No
14	Winchester Rd. (SR-79)	n/o Thompson Rd.	Sensitive	80.5	80.5	0.0	Yes	1.5	No
15	Winchester Rd. (SR-79)	s/o Thompson Rd.	Sensitive	81.9	81.9	0.0	Yes	1.5	No
16	Winchester Rd. (SR-79)	n/o Via Mira Mosa/Auld Rd.	Non-Sensitive	81.0	81.1	0.1	No	3.0	No
17	Winchester Rd. (SR-79)	n/o La Alba Dr./Sparkman Wy.	Sensitive	80.5	80.6	0.1	Yes	1.5	No
18	Winchester Rd. (SR-79)	s/o La Alba Dr./Sparkman Wy.	Sensitive	80.7	80.7	0.0	Yes	1.5	No
19	Scott Rd.	w/o Menifee Rd.	Sensitive	80.7	80.8	0.1	Yes	1.5	No
20	Scott Rd.	e/o Menifee Rd.	Sensitive	81.4	81.5	0.1	Yes	1.5	No
21	Scott Rd.	w/o Leon Rd.	Sensitive	80.8	80.9	0.1	Yes	1.5	No
22	Keller Rd.	e/o Leon Rd.	Sensitive	66.9	69.0	2.1	Yes	1.5	Yes
23	Clinton Keith Rd.	w/o Whitewood Rd.	Sensitive	81.9	81.9	0.0	Yes	1.5	No
24	Clinton Keith Rd.	e/o Whitewood Rd.	Sensitive	81.9	82.0	0.1	Yes	1.5	No

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

<sup>2</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>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-2)?



## 7.5 OFF-SITE TRAFFIC NOISE MITIGATION

To reduce the *potentially significant* Project traffic noise level increases on the study area roadway segment, potential noise mitigation measures are considered in this analysis. Potential mitigation measures discussed below include rubberized asphalt hot mix pavement and off-site noise barriers for the existing residential uses adjacent to impacted roadway segments.

### 7.5.1 RUBBERIZED ASPHALT

Due to the potential noise attenuation benefits, rubberized asphalt is considered as a mitigation measure for the Project-related roadway improvements associated with Project construction. To reduce traffic noise levels at the noise source, Caltrans research has shown that rubberized asphalt can provide noise attenuation of approximately 4 dBA for automobile traffic noise levels. (25) Changing the pavement type of a roadway has been shown to reduce the amount of tire/pavement noise produced at the source under both near-term and long-term conditions. Traffic noise is generated primarily by the interaction of the tires and pavement, the engine, and exhaust systems. For automobiles noise, as much as 75 to 90-percent of traffic noise is generated by the interaction of the tires and pavement, especially when traveling at higher and constant speeds. (5) According to research conducted by Caltrans (25) and the Canadian Ministry of Transportation and Highways (26) a 4 dBA reduction in tire/pavement noise is attainable using rubberized asphalt under typical operating conditions.

To reduce the off-site traffic noise impacts at adjacent existing noise-sensitive land uses, rubberized asphalt mitigation is required for roadway Segments #22 and Keller Road east of Pourroy Road to Winchester Road (SR-79), as shown on Exhibit ES-A. The use of rubberized asphalt mitigation by the Project would serve to reduce the noise level increases at neighboring noise-sensitive land uses and is, therefore, included as an off-site traffic noise mitigation measure. The required rubberized asphalt mitigation measure, MM NOI-1, is outlined in the Executive Summary of this report.

### 7.5.2 OFF-SITE NOISE BARRIERS

Since existing and future noise-sensitive receiving land uses are located adjacent to the impacted roadway segments in the Project study area, off-site noise barriers were considered in this analysis as a potential traffic noise mitigation measure to reduce the impacts. Off-site noise barriers are estimated to provide a *readily perceptible* 5 dBA reduction which, according to the FHWA, is *simple* to attain when blocking the line-of-sight from the noise source to the receiver. (7) In addition, according to FHWA guidance, outdoor living areas are generally limited to outdoor living areas of frequent human use (e.g., backyards of single-family homes). Therefore, front and side yards of residential homes adjacent to off-site roadway segments do not represent noise sensitive areas of frequent human use that require exterior noise mitigation. (7)

Exterior noise mitigation in the form of noise barriers is not anticipated to provide the FHWA attainable reduction of 5 dBA required to reduce the off-site traffic noise level increases and would also require potential openings for driveway access to individual residential lots fronting the road. As such, off-site noise barriers would not be feasible and would not lower the off-site

traffic noise levels below a level of significance, and therefore, noise barriers are not proposed as mitigation for the Project. Off-site traffic noise mitigation using rubberized asphalt is anticipated to provide a greater reduction in off-site traffic noise levels with the Project than off-site noise barriers since the rubberized asphalt would mitigate the noise levels at the source (i.e., tire and pavement noise).

### **7.5.3 OFF-SITE TRAFFIC NOISE LEVEL COMPLIANCE**

With the minimum 4 dBA CNEL noise reduction provided by the rubberized asphalt mitigation, outlined below for MM NOI-1, Project-related off-site traffic noise level increases would be reduced to *less than significant* levels.

#### **MM NOI-1: OFF-SITE TRAFFIC EXTERIOR NOISE MITIGATION**

To reduce the *potentially significant* Project-related off-site traffic noise level impacts at existing and future noise-sensitive land uses, rubberized asphalt is required as mitigation for Keller Road east of Leon Road (Segment #22) as shown on Exhibit ES-A. With rubberized asphalt mitigation measure, the Project-related off-site traffic noise level increases would be reduced to *less than significant* impacts with mitigation.

## 8 ON-SITE TRAFFIC NOISE ANALYSIS

An on-site exterior noise impact analysis has been completed to determine the noise exposure levels that would result from adjacent transportation noise sources in the Project study area, and to identify potential noise mitigation measures that would achieve acceptable Project exterior and interior noise levels. The primary source of transportation noise affecting the Project site is anticipated to be from Winchester Road (SR-79) and Keller Road. The Project would also be exposed to nominal traffic noise from the Project's internal roads. However, due to the distance, topography and low traffic volume/speed, traffic noise from these roads will not make a substantive contribution to ambient noise conditions.

### 8.1 EXTERIOR NOISE ANALYSIS

Using the FHWA traffic noise prediction model and the parameters outlined in Tables 6-3 to 6-5, the expected future exterior noise levels for the on-site Project land uses were estimated. Table 8-1 presents a summary of future on-site exterior traffic noise levels. The on-site traffic noise analysis calculations are provided in Appendix 8.1. All future residential uses will require detailed analysis as a component of noise studies that evaluate the implementing projects within each planning area. These final noise studies would utilize any recommendations identified in this study in combination with precise grading plans and actual building design specifications to identify any additional noise abatement measures, such as exterior noise barriers and/or building materials (e.g., sound transmission class ratings for windows and doors), if necessary. The final noise study requirements are detailed in the Executive Summary.

**TABLE 8-1: UNMITIGATED EXTERIOR NOISE LEVELS**

Planning Area	Land Use <sup>1</sup>	Noise-Sensitive Land Use?	Unmitigated Exterior Noise Level (dBA CNEL) <sup>2</sup>	Land Use Compatibility <sup>3</sup>
PA 1	Single-Family Residential (MDR)	Yes	69.4	<i>Conditionally Acceptable</i>
PA 2	Single-Family Residential (MDR)	Yes	68.5	<i>Conditionally Acceptable</i>
PA 4	Single-Family Residential (MHDR)	Yes	68.5	<i>Conditionally Acceptable</i>
PA 6	Multi-Family Residential (VHDR)	Yes	74.6	<i>Normally Unacceptable</i>
PA 7	Commercial Retail (CR)	No	76.3	<i>Conditionally Acceptable</i>

<sup>1</sup> Project land uses as shown on Exhibit 1-A.

<sup>2</sup> Exterior on-site traffic noise level calculations are included in Appendix 8.1.

<sup>3</sup> Based on the General Plan land use compatibility guidelines as shown on Exhibit 3-A.

#### 8.1.1 SINGLE-FAMILY RESIDENTIAL LAND USE (MDR/MHDR)

The on-site exterior traffic noise analysis indicates that the noise sensitive outdoor living areas (backyards) for single-family residential land uses Planning Areas 1, 2 and 4 will experience unmitigated exterior noise levels from Keller Road ranging from 68.5 to 69.4 dBA CNEL. Based on County of Riverside *Land Use Compatibility for Community Noise Exposure* shown on Exhibit 3-A, the single-family land uses within Planning Areas 1, 2 and 4 are considered as *conditionally*

*acceptable* with unmitigated exterior noise levels of less than 70 dBA CNEL. For *conditionally acceptable* exterior noise levels, *new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.*

In addition, to satisfy the County of Riverside 65 dBA CNEL exterior noise level standards for the noise sensitive residential land use, the construction of 6-foot-high noise barriers is required for the outdoor living areas (backyards) of single-family residential uses in Planning Areas 1, 2 and 4 facing Keller Road. With the recommended noise barriers shown on Exhibit ES-A, Table 8-2 shows that the mitigated future exterior noise levels at the outdoor living areas (backyards) of single-family residential uses in Planning Areas 1, 2 and 4 will range from 62.6 to 63.4 dBA CNEL. This noise analysis shows that the recommended 6-foot-high noise barriers will satisfy the County of Riverside 65 dBA CNEL exterior noise level standards for single-family residential use.

**TABLE 8-2: MITIGATED FUTURE EXTERIOR NOISE LEVELS**

Planning Area	Land Use <sup>1</sup>	Noise-Sensitive Land Use?	Mitigated Exterior Noise Level (dBA CNEL) <sup>2</sup>	Barrier Height (Feet)
PA 1	Single-Family Residential (MDR)	Yes	63.4	6'
PA 2	Single-Family Residential (MDR)	Yes	62.6	6'
PA 4	Single-Family Residential (MHDR)	Yes	62.6	6'
PA 6	Multi-Family Residential (VHDR)	Yes	-. <sup>3</sup>	-. <sup>3</sup>
PA 7	Commercial Retail (CR)	No	-. <sup>4</sup>	-. <sup>4</sup>

<sup>1</sup> Project land uses as shown on Exhibit 1-A.

<sup>2</sup> Exterior on-site traffic noise level calculations are included in Appendix 8.1.

<sup>3</sup> Exterior noise mitigation is generally limited to single-family private outdoor living areas (backyards).

<sup>4</sup> Non-noise sensitive land use. No exterior noise mitigation is required.

### 8.1.2 MULTI-FAMILY RESIDENTIAL (VHDR)

No exterior noise mitigation is required to satisfy the County of Riverside *Land Use Compatibility for Community Noise Exposure* guidelines for multi-family residential uses. Exterior noise mitigation is generally limited to the noise sensitive private outdoor living areas (backyards) for single-family residential land use. As shown on Table 8-1, the planned multi-family residential land use within Planning Area 6 near Winchester Road (SR-79) will experience *normally unacceptable* exterior noise levels of 74.6 dBA CNEL. For *normally unacceptable* exterior noise levels, the *Land Use Compatibility for Community Noise Exposure* guidelines indicate that *new construction or development should generally be discouraged. If new construction or development does proceed, a detail analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.*

To demonstrate that the Project satisfies these guidelines, additional interior noise analysis is provided in this noise study to satisfy the General Plan Noise Element interior noise level standards. Section 8.2 presents the interior noise analysis results for the planned multi-family residential land uses (VHDR).

### 8.1.3 COMMERCIAL RETAIL (CR)

The County of Riverside does not identify any exterior noise level limits for the commercial retail uses. Therefore, analysis of the commercial retail land use is limited to the interior noise level significance criteria outlined in California Green Building Standards Code Section 5.507 previously described in Section 3.1. The results of the on-site exterior traffic noise analysis shown on Table 8-1 indicates that the planned commercial retail uses adjacent to Winchester Road (SR-79) may experience unmitigated exterior noise levels estimated at 76.3 dBA CNEL, which represent *conditionally unacceptable* land use requiring interior noise analysis. To demonstrate that the Project satisfies these requirements, additional interior noise analysis is provided in this noise study to satisfy the California Green Building Standards Code Section 5.507 interior noise level standards. Section 8.2 presents the interior noise analysis results for the planned Commercial Retail land uses.

### 8.1.4 EXTERIOR TRAFFIC NOISE LEVEL COMPLIANCE

Table 8-1 shows that unmitigated on-site traffic noise levels exceed County of Riverside 65 dBA CNEL exterior noise level standards for the noise sensitive residential land use and represent a *potentially significant* impact.

#### MM NOI-2: ON-SITE TRAFFIC EXTERIOR NOISE MITIGATION

To reduce the *potentially significant* on-site traffic noise level impacts, the construction of 6-foot-high noise barriers is required for the outdoor living areas (backyards) of single-family residential uses in Planning Areas 1, 2 and 4 facing Keller Road. With the mitigation measures detailed in the Executive Summary and shown on Exhibit ES-A, the on-site exterior traffic noise levels would be reduced to *less than significant*.

## 8.2 INTERIOR NOISE ANALYSIS

To ensure that the interior noise levels comply with the interior noise level standards, future exterior noise levels were calculated at the estimated at the first and second floor building façade locations for planned residential home locations and at the building façade where the planned commercial retail land uses are located.

### 8.2.1 NOISE REDUCTION METHODOLOGY

The interior noise level is the difference between the predicted exterior noise level at the building facade and the noise reduction of the structure. Typical building construction will provide a Noise Reduction (NR) of approximately 12 dBA with "windows open" and a minimum 25 dBA noise reduction with "windows closed." (7) (27) However, sound leaks, cracks and openings within the window assembly can greatly diminish its effectiveness in reducing noise. Several methods are used to improve interior noise reduction, including: [1] weather-stripped solid core exterior doors; [2] upgraded dual glazed windows; [3] mechanical ventilation/air conditioning; and [4] exterior wall/roof assemblies free of cut outs or openings.

### 8.2.2 INTERIOR NOISE LEVEL ASSESSMENT

To provide the necessary interior noise level reduction, Tables 8-3 and 8-4 indicate that Project land uses adjacent to Winchester Road (SR-79) and Keller Road will require a windows-closed condition and a means of mechanical ventilation (e.g. air conditioning). Tables 8-3 and 8-4 show that the future unmitigated noise levels at the first and second floor building façade are expected to range from 62.3 to 76.0 dBA CNEL. The interior noise assessment shows that the single-family residential (MDR) uses within Planning Areas 1, 2 and 4 can be satisfied using standard windows with a minimum STC rating of 27. However, to satisfy the interior noise level standard of 45 dBA CNEL for the multi-family residential (VHDR) land uses in Planning Area 6 facing Winchester Road (SR-79), upgraded windows and sliding glass doors with minimum STC ratings of 34 are required. To satisfy the interior noise level standard of 50 dBA CNEL for commercial land uses in Planning Area 7, upgraded windows and sliding glass doors with minimum STC rating of 34 are required.

### 8.2.3 INTERIOR TRAFFIC NOISE LEVEL COMPLIANCE

Tables 8-3 and 8-4 shows that unmitigated on-site interior traffic noise levels will exceed the County of Riverside 45 dBA CNEL interior noise level standard for residential development, and the 50 dBA CNEL interior noise level threshold for commercial uses and represent a *potentially significant* impact.

#### MM NOI-3: ON-SITE TRAFFIC INTERIOR NOISE MITIGATION

To reduce the *potentially significant* on-site interior traffic noise level impacts, all land uses will require a windows-closed condition and a means of mechanical ventilation (e.g. air conditioning). In addition, the multi-family residential (VHDR) land uses in Planning Area 6 and the commercial land uses in Planning Area 7 facing Winchester Road (SR-79) will require upgraded windows and sliding glass doors with minimum STC ratings of 34. With the mitigation measures detailed in the Executive Summary and shown on Exhibit ES-A, the on-site interior traffic noise levels would be reduced to *less than significant*.

In addition, a final noise study shall be prepared prior to obtaining building permits for the project. This report would finalize the mitigation measures described in this study using the precise grading plans and actual building design specifications, and may include additional mitigation, if necessary, to meet the interior noise level standards for residential (45 dBA CNEL) and commercial (50 dBA CNEL) land uses.

**TABLE 8-3: FIRST FLOOR INTERIOR NOISE LEVELS (CNEL)**

Planning Area	Land Use <sup>1</sup>	Noise-Sensitive Land Use?	Noise Level at Façade <sup>2</sup>	Required Interior Noise Reduction <sup>3</sup>	Estimated Interior Noise Reduction <sup>4</sup>	Upgraded Windows <sup>5</sup>	Interior Noise Level <sup>6</sup>	Threshold <sup>7</sup>	Threshold Exceeded?
PA 1	Single-Family Residential (MDR)	Yes	63.0	18.0	25.0	No	38.0	45	No
PA 2	Single-Family Residential (MDR)	Yes	62.3	17.3	25.0	No	37.3	45	No
PA 4	Single-Family Residential (MHDR)	Yes	62.3	17.3	25.0	No	37.3	45	No
PA 6	Multi-Family Residential (VHDR)	Yes	74.3	29.3	32.0	Yes	42.3	45	No
PA 7	Commercial Retail (CR)	No	76.0	26.0	32.0	Yes	44.0	50	No

<sup>1</sup> Project land uses as shown on Exhibit 1-A.

<sup>2</sup> Exterior noise level at the façade with a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning). See Appendix 8.1.

<sup>3</sup> Noise reduction to satisfy the interior noise level threshold.

<sup>4</sup> A minimum of 25 dBA noise reduction is assumed with standard building construction and approximately 2 dBA less than the STC rating for upgraded windows.

<sup>5</sup> Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?

<sup>6</sup> Estimated interior noise level with minimum STC rating for all windows.

<sup>7</sup> Interior noise level threshold: 45 dBA CNEL for residential use (California Code of Regulations, Title 24, Building Standards Administrative Code), and 50 dBA CNEL for commercial uses (Based on the California Green Building Standards Code, Section 5.507.4.2).

**TABLE 8-4: SECOND FLOOR INTERIOR NOISE LEVELS (CNEL)**

Planning Area	Land Use <sup>1</sup>	Noise-Sensitive Land Use?	Noise Level at Façade <sup>2</sup>	Required Interior Noise Reduction <sup>3</sup>	Estimated Interior Noise Reduction <sup>4</sup>	Upgraded Windows <sup>5</sup>	Interior Noise Level <sup>6</sup>	Threshold <sup>7</sup>	Threshold Exceeded?
PA 1	Single-Family Residential (MDR)	Yes	68.8	23.8	25.0	No	43.8	45	No
PA 2	Single-Family Residential (MDR)	Yes	68.0	23.0	25.0	No	43.0	45	No
PA 4	Single-Family Residential (MHDR)	Yes	68.0	23.0	25.0	No	43.0	45	No
PA 6	Multi-Family Residential (VHDR)	Yes	74.3	29.3	32.0	No	42.3	45	No
PA 7	Commercial Retail (CR)	No	76.0	26.0	32.0	No	44.0	50	No

<sup>1</sup> Project land uses as shown on Exhibit 1-A.

<sup>2</sup> Exterior noise level at the façade with a windows closed condition requiring a means of mechanical ventilation (e.g. air conditioning). See Appendix 8.1.

<sup>3</sup> Noise reduction to satisfy the interior noise level threshold.

<sup>4</sup> A minimum of 25 dBA noise reduction is assumed with standard building construction and approximately 2 dBA less than the STC rating for upgraded windows.

<sup>5</sup> Does the required interior noise reduction trigger upgraded windows with a minimum STC rating of greater than 27?

<sup>6</sup> Estimated interior noise level with minimum STC rating for all windows.

<sup>7</sup> Interior noise level threshold: 45 dBA CNEL for residential use (California Code of Regulations, Title 24, Building Standards Administrative Code), and 50 dBA CNEL for commercial uses (Based on the California Green Building Standards Code, Section 5.507.4.2).



## 9 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 9-A, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, outpatient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, five receiver locations in the vicinity of the Project site were identified. All distances are measured from the Project site boundary to the outdoor living areas (e.g., private backyards) or at the building façade, whichever is closer to the Project site. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

- R1: Location R1 represents the existing noise sensitive residence at 33245 Ashford Lane, approximately 881 feet north of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R1 is placed at the residential building façade. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing noise sensitive residence at 33900 Winchester Road, approximately 327 feet east of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R2 is placed at the residential building façade. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 32265 Keller Road, approximately 171 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R3 is placed at the residential building façade. A 24-hour noise measurement near this location, L2, is used to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive residence at 32025 Keller Road, approximately 145 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R4 is placed at the residential building

façade. A 24-hour noise measurement near this location, L3, is used to describe the existing ambient noise environment.

- R5: Location R5 represents the existing noise sensitive residence at 33975 Pourroy Road, approximately 141 feet west of the Project site. R5 is placed at the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement near this location, L5, is used to describe the existing ambient noise environment.

**EXHIBIT 9-A: RECEIVER LOCATIONS**



**LEGEND:**

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

## **10 OPERATIONAL NOISE IMPACTS**

This section analyzes the potential stationary-source (i.e., on-site) operational noise impacts at the nearest receiver locations, identified in Section 9, resulting from the operation of the proposed Keller Crossing Specific Plan Project. Exhibit 10-A identifies the noise source locations used to assess the equivalent  $L_{eq}$  operational noise levels consistent with the County of Riverside General Plan Noise Element Policy N 4.1.

### **10.1 OPERATIONAL NOISE SOURCES**

The on-site Project-related noise sources are expected to include a combination of commercial retail land use noise source activities. This includes delivery truck movements, loading dock activities, roof-top air conditioning units, drive-thru speakerphones, parking lot vehicle movements and other noise activities unique to the individual land uses and tenants. It is expected that the operational noise source activities will primarily be limited to the commercial retail land uses located within Planning Area 5. The residential planning areas within the Keller Crossing Specific Plan is considered a noise-sensitive receiving land use. Therefore, no potential operational noise impacts for the residential land use are analyzed in the noise study. To describe the estimated commercial retail land use noise source activities, a reference sound power level of 103.4 dBA  $L_w$  is used.

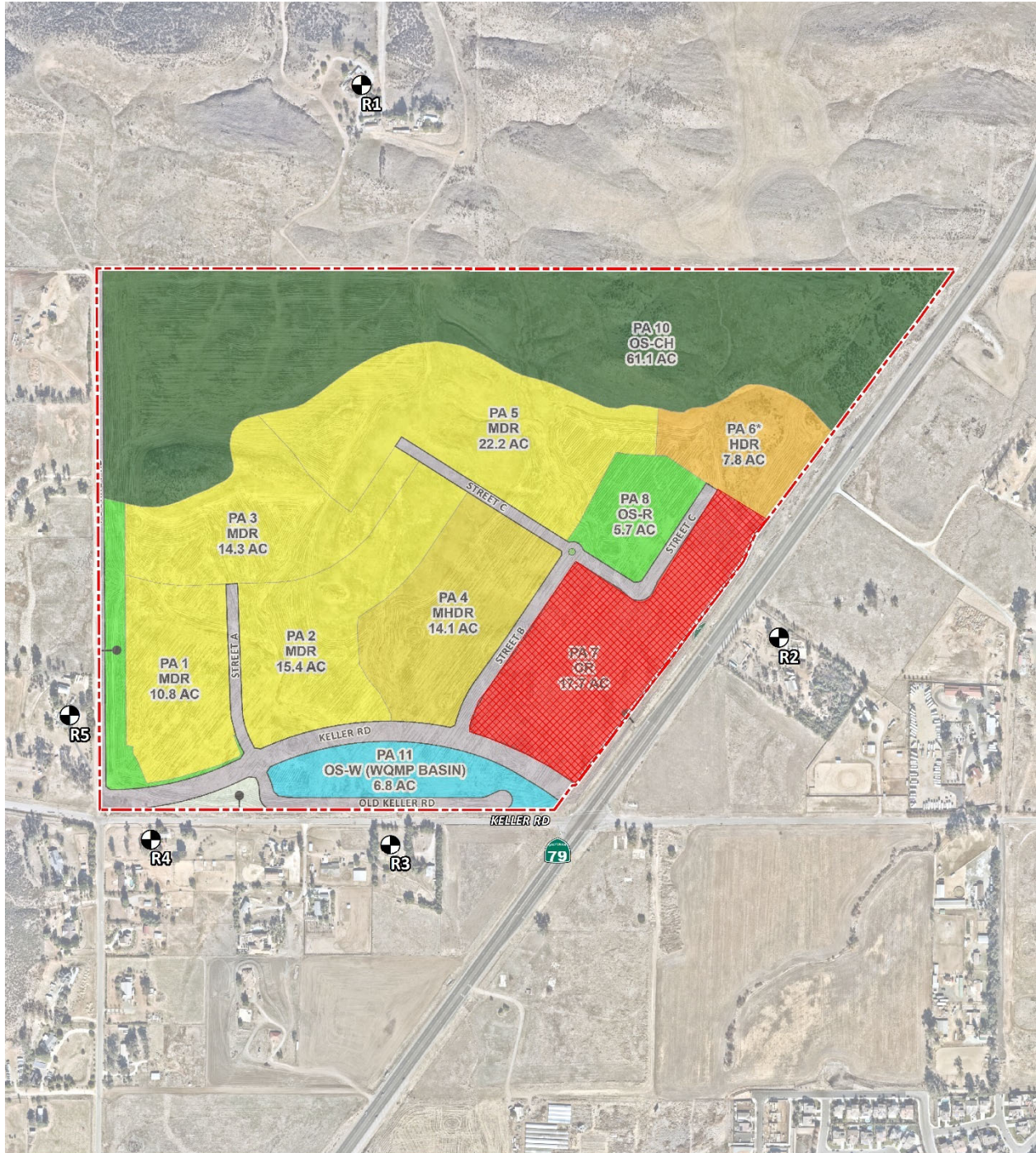
### **10.2 CADNAA NOISE PREDICTION MODEL**

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels.




Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level ( $L_w$ ) to describe individual noise sources. While sound pressure levels (e.g.,  $L_{eq}$ ) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels ( $L_w$ ) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.



EXHIBIT 10-A: OPERATIONAL NOISE SOURCE LOCATIONS



**LEGEND:**

-  Operational Noise Source Activity
-  Receiver Locations
-  Site Boundary

The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the noise analysis to account for mixed ground representing a combination of hard and soft surfaces. Appendix 10.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

### 10.3 PROJECT OPERATIONAL NOISE LEVELS

Using the reference sound power levels to represent the proposed Project operations that include delivery truck movements, loading dock activities, roof-top air conditioning units, drive-thru speakerphones, parking lot vehicle movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site that would be experienced at each of the sensitive receiver locations. Table 10-1 shows the Project operational noise levels at the off-site receiver locations are expected to range from 34.4 to 41.1 dBA  $L_{eq}$ .

**TABLE 10-1: PROJECT OPERATIONAL NOISE LEVELS**

Receiver Location <sup>1</sup>	Project Operational Noise Levels (dBA Leq) <sup>2</sup>	Noise Level Standards (dBA Leq) <sup>3</sup>		Noise Level Standards Exceeded? <sup>4</sup>	
		Daytime	Nighttime	Daytime	Nighttime
R1	31.4	55.0	45.0	No	No
R2	41.1	55.0	45.0	No	No
R3	40.1	55.0	45.0	No	No
R4	34.2	55.0	45.0	No	No
R5	33.1	55.0	45.0	No	No

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

<sup>2</sup> Proposed Project operational noise levels calculations are included in Appendix 10.1.

<sup>3</sup> County of Riverside Municipal Code, Section 9.52.040. (Appendix 3.1).

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

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

### 10.4 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the County of Riverside exterior noise level standards at the nearest noise-sensitive receiver locations. Based on the CadnaA noise prediction model results that account for the noise attenuation due to distance from the noise source activities, Table 10-1 shows the operational noise levels associated with the Keller Crossing Specific Plan Project will satisfy the County of Riverside 55 dBA  $L_{eq}$  daytime and 45 dBA  $L_{eq}$  nighttime exterior noise level standards at the nearest receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearest noise-sensitive receiver locations.

## 10.5 PROJECT OPERATIONAL NOISE LEVEL INCREASES

To describe the Project operational noise level increases, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearest 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. (5) Instead, they must be logarithmically added using the following base equation:

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

Where “SPL1,” “SPL2,” etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 10-2 and 10-3, respectively. Table 10-2 shows that the Project will not generate a measurable daytime operational noise level increase at the nearest receiver locations. Table 10-3 shows that the Project will generate a nighttime operational noise level increases ranging from 0.0 to 4.8 dBA  $L_{eq}$  at the nearest receiver locations.

Based on the significance criteria presented in Table 4-1, the Project-related operational noise level increases will satisfy the operational noise level increase criteria at the nearest sensitive receiver locations and the impact will be *less than significant*.

**TABLE 10-2: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES**

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?
R1	31.4	L1	46.8	46.9	0.1	5.0	No
R2	41.1	L2	56.5	56.6	0.1	5.0	No
R3	40.1	L3	64.5	64.5	0.0	3.0	No
R4	34.2	L4	55.9	55.9	0.0	5.0	No
R5	33.1	L5	49.7	49.8	0.1	5.0	No

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

<sup>2</sup> Total Project daytime operational noise levels as shown on Table 10-1.

<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 increase criteria as shown on Table 4-1.

**TABLE 10-3: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES**

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?
R1	31.4	L5	41.3	41.7	0.4	5.0	No
R2	41.1	L1	38.0	42.8	4.8	5.0	No
R3	40.1	L2	51.9	52.2	0.3	5.0	No
R4	34.2	L3	60.7	60.7	0.0	3.0	No
R5	33.1	L5	41.3	41.9	0.6	5.0	No

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

<sup>2</sup> Total Project nighttime operational noise levels as shown on Table 10-1.

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

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

<sup>5</sup> 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 increase criteria as shown on Table 4-1.



## **11 CONSTRUCTION IMPACTS**

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 11-A shows the construction noise source locations in relation to the nearby sensitive receiver locations previously described in Section 9.

### **11.1 CONSTRUCTION NOISE LEVELS**

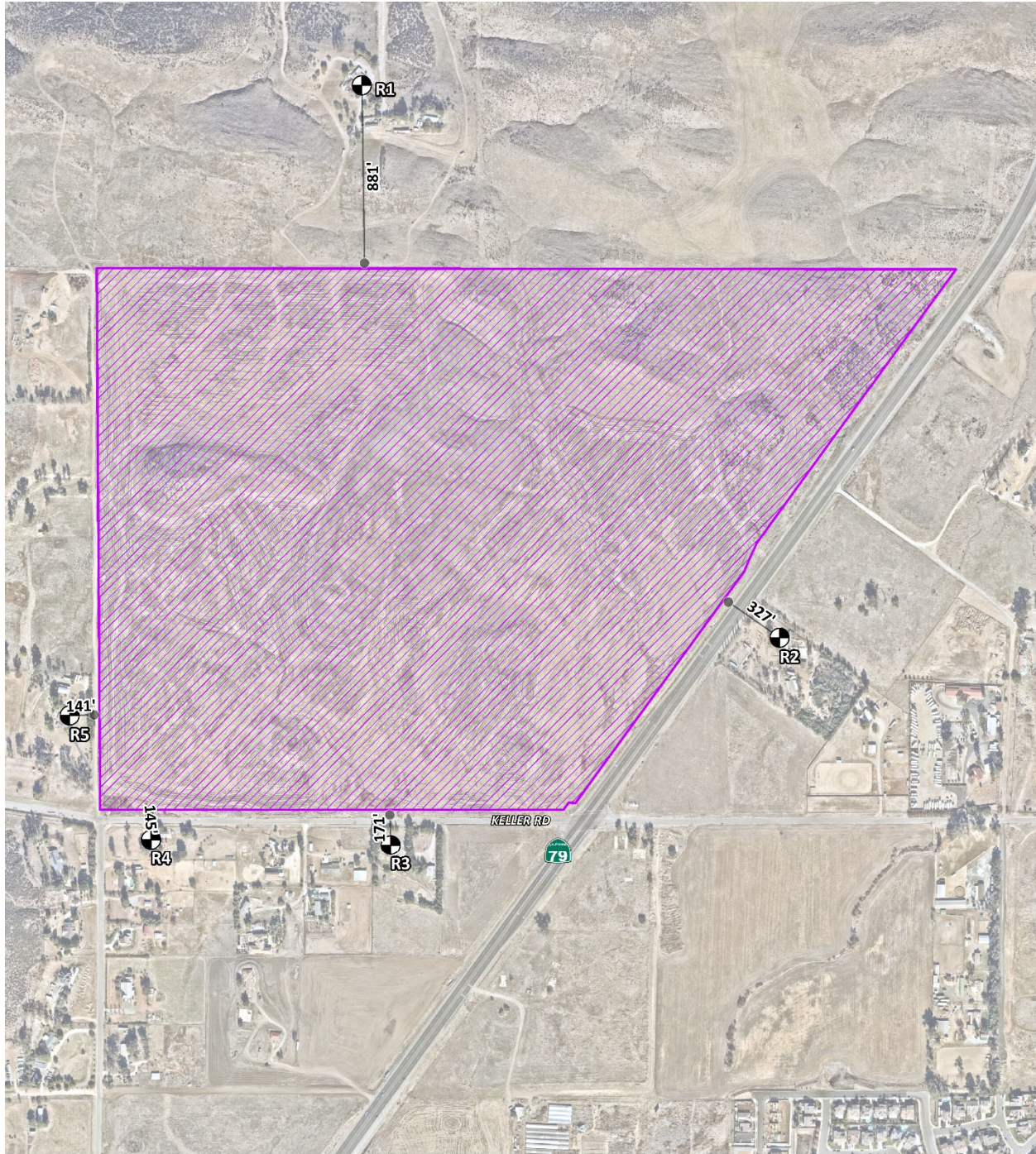
Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high levels. The number and mix of construction equipment are expected to occur in the following stages:

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

### **11.2 CONSTRUCTION REFERENCE NOISE LEVELS**

To describe peak construction noise activities, this construction noise analysis was prepared using reference noise level measurements published in the Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA). (28). The DEFRA database provides the most recent and comprehensive source of reference construction noise levels. Table 11-1 provides a summary of the DEFRA construction reference noise level measurements expressed in hourly average dBA Leq using the estimated FHWA Roadway Construction Noise Model (RCNM) usage factors (29) to describe the typical construction activities for each stage of Project construction.

EXHIBIT 11-A: TYPICAL CONSTRUCTION NOISE SOURCE LOCATIONS



**LEGEND:**

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

**TABLE 11-1: CONSTRUCTION REFERENCE NOISE LEVELS**

Construction Stage	Reference Construction Activity <sup>1</sup>	Reference Noise Level @ 50 Feet (dBA L <sub>eq</sub> ) <sup>1</sup>	Highest Reference Noise Level (dBA L <sub>eq</sub> )
Site Preparation	Crawler Tractors	77	77
	Hauling Trucks	71	
	Rubber Tired Dozers	71	
Grading	Graders	79	79
	Excavators	64	
	Compactors	67	
Building Construction	Cranes	67	72
	Tractors	72	
	Welders	65	
Paving	Pavers	70	70
	Paving Equipment	69	
	Rollers	69	
Architectural Coating	Cranes	67	67
	Air Compressors	67	
	Generator Sets	67	

<sup>1</sup> Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA) expressed in hourly average L<sub>eq</sub> based on estimated usage factors from the FHWA Roadway Construction Noise Model (RCNM).

### 11.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location. As shown on Table 11-2, the construction noise levels are expected to range from 57.8 to 74.6 dBA L<sub>eq</sub>, and the highest construction levels are expected to range from 69.8 to 74.6 dBA L<sub>eq</sub> at the nearby receiver locations. Appendix 11.1 includes the detailed CadnaA construction noise model inputs.

The construction noise analysis presents a conservative approach with the highest noise-level-producing equipment for each stage of Project construction operating at the closest point from primary construction activity to the nearby sensitive receiver locations. This scenario is unlikely to occur during typical construction activities and likely overstates the construction noise levels which will be experienced at each receiver location.

**TABLE 11-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY**

Receiver Location <sup>1</sup>	Construction Noise Levels (dBA L <sub>eq</sub> )					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels <sup>2</sup>
R1	67.8	69.8	62.8	60.8	57.8	69.8
R2	71.0	73.0	66.0	64.0	61.0	73.0
R3	72.6	74.6	67.6	65.6	62.6	74.6
R4	72.0	74.0	67.0	65.0	62.0	74.0
R5	72.4	74.4	67.4	65.4	62.4	74.4

<sup>1</sup> Noise receiver locations are shown on Exhibit 11-A.

<sup>2</sup> Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 11.1.

## 11.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L<sub>eq</sub> is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L<sub>eq</sub> significance threshold during Project construction activities as shown on Table 11-3. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

**TABLE 11-3: CONSTRUCTION NOISE LEVEL COMPLIANCE**

Receiver Location <sup>1</sup>	Construction Noise Levels (dBA L <sub>eq</sub> )		
	Highest Construction Noise Levels <sup>2</sup>	Threshold <sup>3</sup>	Threshold Exceeded? <sup>4</sup>
R1	69.8	80	No
R2	73.0	80	No
R3	74.6	80	No
R4	74.0	80	No
R5	74.4	80	No

<sup>1</sup> Noise receiver locations are shown on Exhibit 11-A.

<sup>2</sup> Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 11-2.

<sup>3</sup> Construction noise level thresholds as shown on Table 4-1.

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

### 11.5 CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. Ground-borne vibration levels resulting from typical construction activities occurring within the Project site were estimated by data published by the Federal Transit Administration (FTA). (10) However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 11-4. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation:  $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

**TABLE 11-4: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT**

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

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

Using the vibration source level of construction equipment provided on Table 11-4 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 11-5 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 141 to 881 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.005 in/sec RMS and will remain below the County of Riverside threshold of 0.01 in/sec RMS at all receiver locations, as shown on Table 11-5. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.



**TABLE 11-5: PROJECT CONSTRUCTION VIBRATION LEVELS**

Receiver <sup>1</sup>	Distance to Const. Activity (Feet)	Receiver Levels (in/sec) RMS <sup>2</sup>					Threshold (in/sec) RMS <sup>4</sup>	Threshold Exceeded? <sup>5</sup>
		Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer	Peak Vibration		
R1	881'	0.000	0.000	0.000	0.000	0.000	0.01	No
R2	327'	0.000	0.001	0.001	0.001	0.001	0.01	No
R3	171'	0.000	0.001	0.003	0.004	0.004	0.01	No
R4	145'	0.000	0.002	0.004	0.005	0.005	0.01	No
R5	141'	0.000	0.002	0.004	0.005	0.005	0.01	No

<sup>1</sup> Receiver locations are shown on Exhibit 11-A.

<sup>2</sup> Based on the Vibration Source Levels of Construction Equipment included on Table 11-4. Vibration levels in PPV are converted to RMS velocity using a 0.71 conversion factor identified in the Caltrans Transportation and Construction Vibration Guidance Manual, September 2013.

<sup>3</sup> Source: County of Riverside General Plan Noise Element, Policy N 16.3.

<sup>4</sup> Does the vibration level exceed the maximum acceptable vibration threshold?

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

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7. **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.
8. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
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11. **Office of Planning and Research.** *State of California General Plan Guidelines.* October 2017.
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18. **California Department of Transportation.** *Technical Noise Supplement.* November 2009.
19. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*
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22. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
23. **County of Riverside, Office of Industrial Hygiene.** *Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures.* April 2015.
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## 13 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Keller Crossing Specific Plan Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 584-3148.

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### EDUCATION

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

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

### PROFESSIONAL REGISTRATIONS

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

### PROFESSIONAL AFFILIATIONS

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

### PROFESSIONAL CERTIFICATIONS

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

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**APPENDIX 3.1:**

**COUNTY OF RIVERSIDE MUNICIPAL CODE**

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## Chapter 9.52 - NOISE REGULATION

### Sections:

#### 9.52.010 - 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 declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish county-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.

(Ord. 847 § 1, 2006)

#### 9.52.020 - Exemptions.

Sound emanating from the following sources is exempt from the provisions of this chapter:

- 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-I (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 of a mile or more from an inhabited dwelling;
- I. Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that:

1. Construction does not occur between the hours of six p.m. and six a.m. during the months of June through September, and
  2. Construction does not occur between the hours of six p.m. and seven 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 seven a.m. and eight p.m.;
- K. Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;
- L. 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.

(Ord. 847 § 2, 2006)

#### 9.52.030 - Definitions.

As used in this chapter, the following terms shall have the following meanings:

"Audio equipment" means a television, stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.

"Decibel (dB)" means 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 ( $L_{max}$ )" means the maximum sound level measured on a sound level meter.

"Governmental agency" means 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.

"Land use permit" means a discretionary permit issued by Riverside County pursuant to Riverside County Ordinance No. 348.

"Motor vehicle" means a vehicle that is self-propelled.

"Motor vehicle sound system" means a stereo, radio, tape player, compact disc player, mp3 player, I-POD or other similar device.

"Noise" means any loud, discordant or disagreeable sound.

"Occupied property" means property upon which is located a residence, business or industrial or manufacturing use.

"Off-highway vehicle" means a motor vehicle designed to travel over any terrain.

"Public or private school" means an institution conducting academic instruction at the preschool, elementary school, junior high school, high school, or college level.

"Public property" means property owned by a governmental agency or held open to the public, including, but not limited to, parks, streets, sidewalks, and alleys.

"Sensitive receptor" means 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.

"Sound-amplifying equipment" means a loudspeaker, microphone, megaphone or other similar device.

"Sound level meter" means 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.

(Ord. 847 § 3, 2006)

9.52.040 - 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.

TABLE 1

Sound Level Standards (Db L<sub>max</sub>)

GENERAL PLAN FOUNDATION COMPONENT	GENERAL PLAN LAND USE DESIGNATION	GENERAL PLAN LAND USE DESIGNATION NAME	DENSITY	MAXIMUM DECIBEL LEVEL

				7 am—10 pm	10 pm—7 am
Community Development	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 Residential	2—5	55	45
	MHDR	Medium High Density Residential	5—8	55	45
	HDR	High Density Residential	8—14	55	45
	VHDR	Very High Density Residential	14—20	55	45
	H'TDR	Highest Density Residential	20+	55	45
	CR	Retail Commercial		65	55



	CO	Office Commercial		65	55
	CT	Tourist Commercial		65	55
	CC	Community Center		65	55
	LI	Light Industrial		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-Commercial		65	55
		Specific Plan-Light Industrial		75	55
		Specific Plan-Heavy Industrial		75	75
Rural Community	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
Rural	RR	Rural Residential	5 AC	45	45
	RM	Rural Mountainous	10 AC	45	45
	RD	Rural Desert	10 AC	45	45
Agriculture	AG	Agriculture	10 AC	45	45
Open Space	C	Conservation		45	45
	CH	Conservation Habitat		45	45
	REC	Recreation		45	45
	RUR	Rural	20 AC	45	45
	W	Watershed		45	45
	MR	Mineral Resources		75	45

(Ord. 847 § 4, 2006)

9.52.050 - Sound level measurement methodology.

Sound level measurements may be made anywhere within the boundaries of an occupied property. The actual location of a sound level measurement shall be at the discretion of the enforcement officials identified in Section 9.52.080 of this chapter. 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.

(Ord. 847 § 5, 2006)

#### 9.52.060 - Special sound sources standards.

The general sound level standards set forth in Section 9.52.040 of this chapter 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 constitutes separate violations of this chapter:

##### A. Motor Vehicles.

###### 1. Off-Highway Vehicles.

- a. 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.
- b. No person shall operate an off-highway vehicle unless the noise emitted by the vehicle is not more than ninety-six (96) dBA if the vehicle was manufactured on or after January 1, 1986 or is not more than one hundred one (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 ten p.m. and eight 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 ten p.m. and eight 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 ten p.m. and eight 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 ten p.m. and eight 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.

(Ord. 847 § 6, 2006)

#### 9.52.070 - Exceptions.

Exceptions may be requested from the standards set forth in Section 9.52.040 or 9.52.060 of this chapter 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 18.26c 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 decisionmaking 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 decisionmaking 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.
- C. Appeals. The director of building and safety's decision on an 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 decisionmaking 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 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 eighty (180) days from the effective date of this chapter, no person creating any sound prohibited by this chapter shall be considered in violation of this chapter 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.

#### 9.52.080 - Enforcement.

The Riverside County sheriff and code enforcement shall have the primary responsibility for enforcing this chapter; provided, however, the sheriff and code enforcement may be assisted by the public health department. Violations shall be prosecuted as described in Section 9.52.100 of this chapter, but nothing in this chapter 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.

(Ord. 847.1 § 1, 2007; Ord. 847 § 8, 2006)

#### 9.52.090 - Duty to cooperate.

No person shall refuse to cooperate with, or obstruct, the enforcement officials identified in Section 9.52.080 of this chapter when they are engaged in the process of enforcing the provisions of this chapter. This duty to cooperate may require a person to extinguish a sound source so that it can be determined whether sound emanating from the source violates the provisions of this chapter.

(Ord. 847 § 9, 2006)

#### 9.52.100 - Violations and penalties.

Any person who violates any provision of this chapter once or twice within a one hundred eighty (180) day period shall be guilty of an infraction. Any person who violates any provision of this chapter more than twice within a one hundred 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 eighty (180) day period, the minimum mandatory fine shall be five hundred dollars (\$500.00).
- B. For the second violation within a one hundred eighty (180) day period, the minimum mandatory fine shall be seven hundred fifty dollars (\$750.00).
- C. For any further violations within a one hundred eighty (180) day period, the minimum mandatory fine shall be one thousand dollars (\$1,000.00) or imprisonment in the county jail for a period not exceeding six months, or both.

(Ord. 847 § 10, 2006)

**APPENDIX 5.1:**  
**STUDY AREA PHOTOS**

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JN:13649 Study Area Photos



L1\_E\_IMG\_1913  
33, 37' 52.950000"117, 5' 21.240000"



L1\_N\_IMG\_1912  
33, 37' 39.940000"117, 5' 14.370000"



L1\_S\_IMG\_1914  
33, 37' 52.930000"117, 5' 21.210000"



L1\_W\_IMG\_1915  
33, 37' 52.910000"117, 5' 21.190000"



L2\_E\_IMG\_1919  
33, 37' 37.770000"117, 5' 51.340000"



L2\_N\_IMG\_1918  
33, 37' 37.770000"117, 5' 51.290000"



JN:13649 Study Area Photos



L2\_S\_IMG\_1920  
33, 37' 37.770000"117, 5' 51.370000"



L2\_W\_IMG\_1921  
33, 37' 37.770000"117, 5' 51.400000"



L3\_E\_IMG\_1927  
33, 37' 38.290000"117, 6' 4.280000"



L3\_N\_IMG\_1925  
33, 37' 38.320000"117, 6' 4.280000"



L3\_S\_IMG\_1926  
33, 37' 38.310000"117, 6' 4.280000"



L3\_W\_IMG\_1924  
33, 37' 38.320000"117, 6' 4.280000"



JN:13649 Study Area Photos



L4\_E\_IMG\_1938  
33, 37' 44.940000"117, 6' 4.580000"



L4\_N\_IMG\_1937  
33, 37' 44.930000"117, 6' 4.640000"



L4\_S\_IMG\_1939  
33, 37' 44.850000"117, 6' 4.640000"



L4\_W\_IMG\_1940  
33, 37' 44.790000"117, 6' 4.690000"



L5\_E\_IMG\_1934  
33, 38' 3.360000"117, 6' 5.210000"



L5\_N\_IMG\_1932  
33, 38' 3.400000"117, 6' 5.210000"



JN:13649 Study Area Photos



L5\_S\_IMG\_1933

33, 38' 3.380000"117, 6' 5.210000"



L5\_W\_IMG\_1931

33, 38' 3.410000"117, 6' 5.210000"

**APPENDIX 5.2:**  
**NOISE LEVEL MEASUREMENT WORKSHEETS**

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### 24-Hour Noise Level Measurement Summary

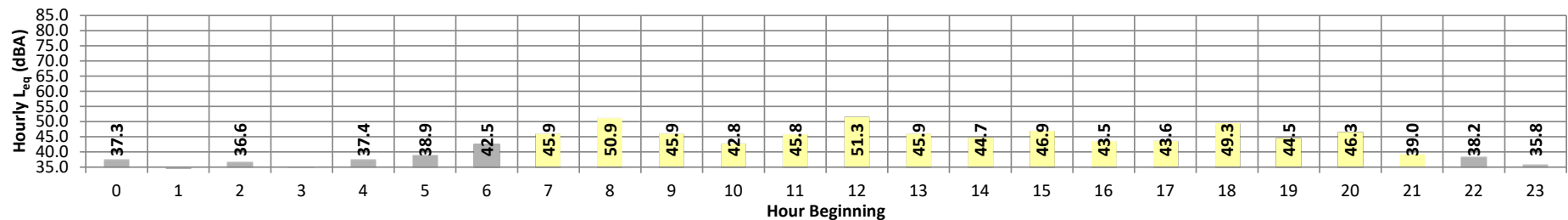
Date: Wednesday, February 10, 2021  
Project: Keller Crossing

Location: L1 - Location east of SR-79 and south of Elmhurst Lane  
Source:

Meter: Piccolo II

JN: 13649  
Analyst: B. Lawson

Hourly  $L_{eq}$  dBA Readings (unadjusted)



Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$	Adj.	Adj. $L_{eq}$	
Night	0	37.3	42.7	33.1	42.0	41.5	40.5	40.0	38.2	36.8	33.9	33.7	33.2	37.3	10.0	47.3	
	1	32.7	35.7	30.8	35.4	35.2	34.7	34.4	33.4	32.4	31.1	30.9	30.8	32.7	10.0	42.7	
	2	36.6	42.9	31.9	42.5	42.1	41.1	40.3	37.6	34.9	32.6	32.3	32.0	36.6	10.0	46.6	
	3	35.0	40.9	31.5	40.4	39.6	38.4	37.9	35.5	33.9	32.1	31.9	31.6	35.0	10.0	45.0	
	4	37.4	42.7	32.7	42.3	41.9	41.0	40.3	38.6	36.3	33.6	33.2	32.8	37.4	10.0	47.4	
	5	38.9	44.4	34.6	43.8	43.3	42.3	41.7	39.6	38.2	35.7	35.3	34.7	38.9	10.0	48.9	
Day	6	42.5	48.6	37.0	47.8	47.2	46.1	45.5	43.5	41.6	38.5	37.8	37.2	42.5	10.0	52.5	
	7	45.9	52.0	36.9	51.6	51.2	50.4	49.9	47.4	44.1	39.2	38.2	37.3	45.9	0.0	45.9	
	8	50.9	59.2	38.6	58.5	57.8	55.9	55.2	52.9	47.0	40.6	39.8	38.9	50.9	0.0	50.9	
	9	45.9	53.8	36.5	53.0	52.3	50.9	50.1	47.2	43.6	38.8	38.1	36.7	45.9	0.0	45.9	
	10	42.8	50.5	36.0	49.8	48.9	47.4	46.6	43.7	41.0	37.1	36.7	36.2	42.8	0.0	42.8	
	11	45.8	55.1	36.7	54.4	53.3	51.2	50.3	46.4	43.0	38.1	37.5	36.9	45.8	0.0	45.8	
	12	51.3	58.7	44.0	58.1	57.7	56.4	55.3	52.1	49.2	45.8	45.2	44.2	51.3	0.0	51.3	
	13	45.9	53.5	37.2	52.8	52.2	50.9	50.1	46.9	44.0	39.1	38.4	37.5	45.9	0.0	45.9	
	14	44.7	54.1	35.3	53.3	52.4	50.5	49.3	45.2	41.8	37.4	36.6	35.5	44.7	0.0	44.7	
	15	46.9	55.6	38.0	54.6	53.8	52.3	51.1	47.8	43.9	40.1	39.4	38.2	46.9	0.0	46.9	
	16	43.5	51.4	37.3	50.4	49.5	47.9	47.0	44.3	41.8	39.2	38.5	37.5	43.5	0.0	43.5	
	17	43.6	50.5	38.1	49.7	49.1	47.9	47.2	44.6	42.2	39.2	38.7	38.2	43.6	0.0	43.6	
	18	49.3	55.3	40.0	55.0	54.8	54.4	53.9	50.7	46.9	42.1	41.1	40.2	49.3	0.0	49.3	
	19	44.5	50.7	38.9	50.2	49.6	48.6	48.0	45.7	42.9	39.9	39.4	39.0	44.5	5.0	49.5	
	20	46.3	54.5	38.8	54.1	53.5	52.1	50.9	47.1	42.6	39.7	39.3	38.9	46.3	5.0	51.3	
21	39.0	43.2	36.0	42.9	42.5	41.8	41.3	39.7	38.5	36.7	36.4	36.1	39.0	5.0	44.0		
Night	22	38.2	44.8	34.4	44.4	44.1	42.6	41.3	38.6	36.8	35.1	34.8	34.5	38.2	10.0	48.2	
Night	23	35.8	40.4	32.9	40.0	39.4	38.7	38.2	36.3	35.2	33.6	33.3	33.0	35.8	10.0	45.8	
Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$ (dBA)			
Day	Min	39.0	43.2	35.3	42.9	42.5	41.8	41.3	39.7	38.5	36.7	36.4	35.5	24-Hour	45.1	46.8	38.0
	Max	51.3	59.2	44.0	58.5	57.8	56.4	55.3	52.9	49.2	45.8	45.2	44.2				
Energy Average		46.8	Average:		52.6	51.9	50.6	49.7	46.8	43.5	39.5	38.9	38.1				
Night	Min	32.7	35.7	30.8	35.4	35.2	34.7	34.4	33.4	32.4	31.1	30.9	30.8				
	Max	42.5	48.6	37.0	47.8	47.2	46.1	45.5	43.5	41.6	38.5	37.8	37.2				
Energy Average		38.0	Average:		42.1	41.6	40.6	40.0	37.9	36.2	34.0	33.7	33.3				

### 24-Hour Noise Level Measurement Summary

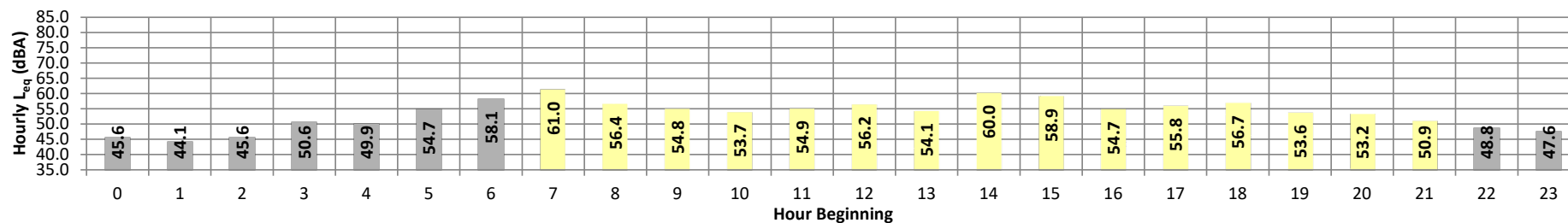
Date: Wednesday, February 10, 2021  
Project: Keller Crossing

Location: L2 - Located at the southeast corner of Keller Road and Keller  
Source: Flat Court

Meter: Piccolo II

JN: 13649  
Analyst: B. Lawson

Hourly  $L_{eq}$  dBA Readings (unadjusted)



Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$	Adj.	Adj. $L_{eq}$
Night	0	45.6	55.3	34.2	55.0	54.5	53.1	51.4	44.6	40.4	36.0	35.2	34.4	45.6	10.0	55.6
	1	44.1	54.2	31.7	53.7	53.2	52.0	50.4	42.7	37.1	32.6	32.2	31.8	44.1	10.0	54.1
	2	45.6	55.8	33.1	55.5	55.1	54.2	51.3	43.5	38.8	34.4	33.7	33.3	45.6	10.0	55.6
	3	50.6	61.9	32.1	61.5	61.1	59.9	56.9	46.1	40.3	34.4	33.8	32.3	50.6	10.0	60.6
	4	49.9	60.5	35.0	59.9	59.1	56.8	55.1	49.7	45.3	37.2	35.9	35.1	49.9	10.0	59.9
	5	54.7	66.7	38.9	66.2	65.2	61.8	59.2	52.7	49.2	41.6	40.3	39.2	54.7	10.0	64.7
Day	6	58.1	71.8	42.4	71.2	69.9	64.7	60.4	55.1	51.3	44.8	43.7	42.7	58.1	10.0	68.1
	7	61.0	74.5	44.1	73.6	72.2	68.8	65.0	56.7	53.3	46.7	45.4	44.3	61.0	0.0	61.0
	8	56.4	65.7	43.0	65.3	64.9	63.7	61.7	56.1	51.8	46.0	44.4	43.3	56.4	0.0	56.4
	9	54.8	66.0	41.3	65.2	64.6	62.0	59.2	53.8	50.3	44.4	42.9	41.5	54.8	0.0	54.8
	10	53.7	62.4	39.8	61.9	61.4	60.2	59.1	54.2	50.1	41.7	40.7	40.0	53.7	0.0	53.7
	11	54.9	66.7	42.2	66.2	65.1	61.2	58.9	53.9	50.2	44.3	43.4	42.5	54.9	0.0	54.9
	12	56.2	63.9	48.9	63.6	63.2	61.9	60.6	56.5	54.1	50.6	49.7	49.3	56.2	0.0	56.2
	13	54.1	62.4	42.8	61.9	61.5	60.4	59.1	54.7	50.8	45.2	44.2	43.1	54.1	0.0	54.1
	14	60.0	72.6	42.2	72.1	71.4	67.9	64.7	55.8	52.0	44.8	43.6	42.4	60.0	0.0	60.0
	15	58.9	70.4	44.5	70.0	69.2	66.3	63.9	57.4	53.1	46.9	45.8	44.8	58.9	0.0	58.9
	16	54.7	63.6	43.6	63.1	62.7	61.4	59.8	54.8	51.6	46.1	44.7	43.9	54.7	0.0	54.7
	17	55.8	64.3	47.2	63.9	63.4	61.7	60.5	56.1	52.9	48.7	48.1	47.4	55.8	0.0	55.8
	18	56.7	65.7	44.9	65.3	64.7	63.2	62.2	56.9	52.8	46.8	45.7	45.0	56.7	0.0	56.7
	19	53.6	63.1	42.6	62.7	62.0	60.6	58.9	53.1	49.5	44.2	43.5	42.9	53.6	5.0	58.6
	20	53.2	63.2	41.7	62.7	61.9	59.6	58.0	53.3	49.0	43.6	42.8	42.0	53.2	5.0	58.2
	21	50.9	60.0	38.8	59.6	59.1	57.8	56.4	51.0	46.9	40.6	39.9	39.0	50.9	5.0	55.9
Night	22	48.8	56.8	37.6	56.5	56.2	55.6	54.7	49.1	44.9	39.1	38.3	37.7	48.8	10.0	58.8
	23	47.6	56.2	36.8	55.9	55.6	54.7	53.5	47.3	43.3	38.2	37.6	36.9	47.6	10.0	57.6
<b>Timeframe</b>	<b>Hour</b>	<b><math>L_{eq}</math></b>	<b><math>L_{max}</math></b>	<b><math>L_{min}</math></b>	<b>L1%</b>	<b>L2%</b>	<b>L5%</b>	<b>L8%</b>	<b>L25%</b>	<b>L50%</b>	<b>L90%</b>	<b>L95%</b>	<b>L99%</b>	<b><math>L_{eq}</math> (dBA)</b>		
Day	Min	50.9	60.0	38.8	59.6	59.1	57.8	56.4	51.0	46.9	40.6	39.9	39.0	<b>24-Hour</b>	<b>Daytime</b> (7am-10pm)	<b>Nighttime</b> (10pm-7am)
	Max	61.0	74.5	48.9	73.6	72.2	68.8	65.0	57.4	54.1	50.6	49.7	49.3			
Energy Average		56.5	Average:		65.1	64.5	62.4	60.5	55.0	51.2	45.4	44.3	43.4			
Night	Min	44.1	54.2	31.7	53.7	53.2	52.0	50.4	42.7	37.1	32.6	32.2	31.8	<b>55.3</b>	<b>56.5</b>	<b>51.9</b>
	Max	58.1	71.8	42.4	71.2	69.9	64.7	60.4	55.1	51.3	44.8	43.7	42.7			
Energy Average		51.9	Average:		59.5	58.9	57.0	54.8	47.9	43.4	37.6	36.8	35.9			



## 24-Hour Noise Level Measurement Summary

Date: Wednesday, February 10, 2021

Location: L3 - Located at the northeast corner of Keller Road and

Meter: Piccolo II

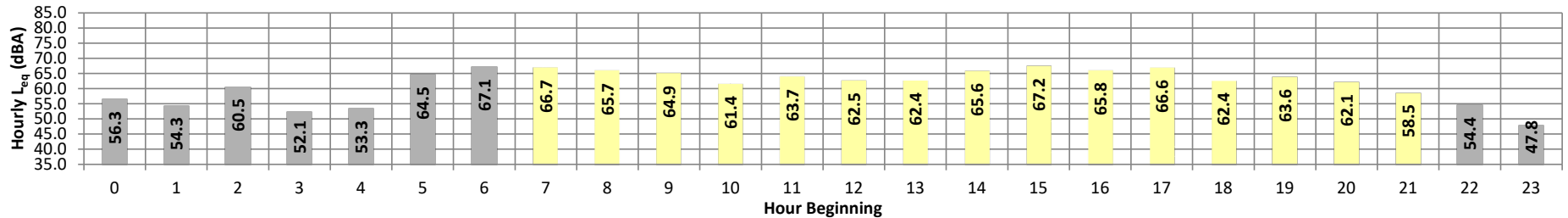
JN: 13649

Project: Keller Crossing

Source: Pourroy Road

Analyst: B. Lawson

Hourly  $L_{eq}$  dBA Readings (unadjusted)



Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$	Adj.	Adj. $L_{eq}$	
Night	0	56.3	71.8	35.6	70.8	69.0	63.3	58.0	44.5	40.3	36.8	36.2	35.8	56.3	10.0	66.3	
	1	54.3	69.8	32.5	68.8	67.1	60.9	55.3	41.2	36.7	33.3	32.9	32.6	54.3	10.0	64.3	
	2	60.5	75.3	35.9	74.7	73.3	67.7	62.9	49.4	43.3	37.5	36.7	36.0	60.5	10.0	70.5	
	3	52.1	64.4	35.6	64.2	63.6	60.6	57.2	46.3	41.1	36.8	36.2	35.8	52.1	10.0	62.1	
	4	53.3	63.9	38.9	63.4	62.9	61.3	59.8	51.3	44.3	40.0	39.4	39.0	53.3	10.0	63.3	
	5	64.5	79.2	39.4	78.4	76.9	72.1	68.3	53.9	46.0	41.1	40.4	39.7	64.5	10.0	74.5	
	6	67.1	82.0	43.7	81.0	79.4	74.4	70.3	58.7	51.3	45.5	44.9	44.0	67.1	10.0	77.1	
Day	7	66.7	80.8	43.2	80.1	78.9	74.5	70.8	58.8	51.8	45.5	44.7	43.6	66.7	0.0	66.7	
	8	65.7	79.7	42.1	79.0	77.6	73.2	69.6	60.6	53.7	44.2	43.2	42.3	65.7	0.0	65.7	
	9	64.9	79.6	40.8	78.9	77.5	72.4	67.7	55.3	48.4	42.4	41.8	41.0	64.9	0.0	64.9	
	10	61.4	76.0	38.8	75.3	73.8	68.5	64.9	52.5	45.7	40.5	39.8	39.0	61.4	0.0	61.4	
	11	63.7	78.3	40.3	77.6	76.1	71.4	67.2	53.8	46.8	41.6	41.0	40.5	63.7	0.0	63.7	
	12	62.5	76.9	46.0	76.2	74.7	69.7	65.6	55.8	52.5	48.3	47.3	46.2	62.5	0.0	62.5	
	13	62.4	77.7	40.2	76.3	74.6	69.2	65.5	54.3	47.7	41.8	41.2	40.5	62.4	0.0	62.4	
	14	65.6	80.4	39.6	79.5	77.9	72.9	68.9	57.9	50.8	42.4	40.9	39.8	65.6	0.0	65.6	
	15	67.2	82.1	43.0	81.0	79.3	74.3	70.9	59.1	49.7	44.9	44.0	43.2	67.2	0.0	67.2	
	16	65.8	80.7	47.4	79.9	78.1	72.9	68.7	55.7	52.0	48.5	48.0	47.5	65.8	0.0	65.8	
	17	66.6	80.8	45.8	80.0	78.5	74.5	71.3	58.6	51.9	47.3	46.6	46.0	66.6	0.0	66.6	
	18	62.4	76.9	46.7	76.1	74.6	69.5	65.2	55.9	52.5	48.3	47.5	46.9	62.4	0.0	62.4	
	19	63.6	78.4	45.0	77.6	76.0	71.0	66.8	54.9	49.7	46.2	45.6	45.1	63.6	5.0	68.6	
	20	62.1	76.5	47.0	75.8	74.1	69.4	65.5	55.2	51.1	48.0	47.6	47.1	62.1	5.0	67.1	
	21	58.5	73.5	42.4	72.6	71.0	65.4	60.7	49.7	46.8	43.7	43.3	42.6	58.5	5.0	63.5	
Night	22	54.4	68.9	40.9	68.1	66.4	61.1	56.9	48.5	45.9	42.2	41.6	41.0	54.4	10.0	64.4	
Night	23	47.8	58.2	39.9	57.7	56.8	53.7	51.4	46.9	44.8	41.4	40.7	40.0	47.8	10.0	57.8	
Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$ (dBA)			
Day	Min	58.5	73.5	38.8	72.6	71.0	65.4	60.7	49.7	45.7	40.5	39.8	39.0	24-Hour	63.4	64.5	60.7
	Max	67.2	82.1	47.4	81.0	79.3	74.5	71.3	60.6	53.7	48.5	48.0	47.5				
Energy Average		64.5	Average:		77.7	76.2	71.2	67.3	55.9	50.1	44.9	44.2	43.4				
Night	Min	47.8	58.2	32.5	57.7	56.8	53.7	51.4	41.2	36.7	33.3	32.9	32.6				
	Max	67.1	82.0	43.7	81.0	79.4	74.4	70.3	58.7	51.3	45.5	44.9	44.0				
Energy Average		60.7	Average:		69.7	68.4	63.9	60.0	49.0	43.7	39.4	38.8	38.2				

## 24-Hour Noise Level Measurement Summary

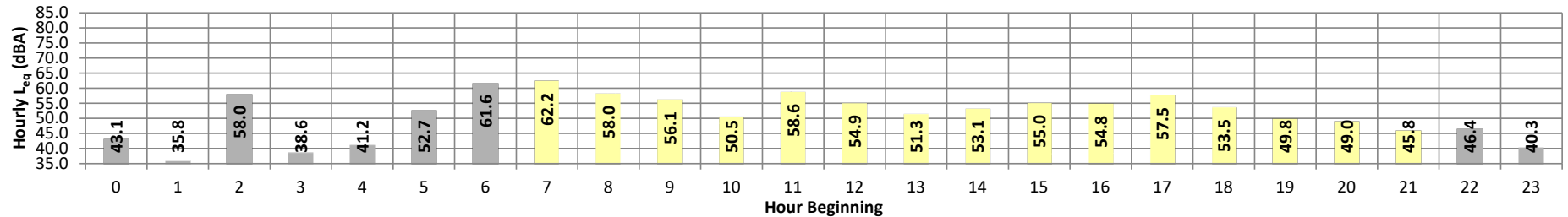
Date: Wednesday, February 10, 2021  
Project: Keller Crossing

Location: L4 - Located West Pourroy Road near 33975 Pourroy Road  
Source:

Meter: Piccolo II

JN: 13649  
Analyst: B. Lawson

Hourly  $L_{eq}$  dBA Readings (unadjusted)



Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$	Adj.	Adj. $L_{eq}$
Night	0	43.1	56.5	33.6	55.7	54.3	49.3	46.1	40.0	37.2	34.7	34.2	33.8	43.1	10.0	53.1
	1	35.8	44.4	30.6	44.1	43.6	41.9	38.9	35.8	33.2	30.9	30.8	30.6	35.8	10.0	45.8
	2	58.0	70.4	31.6	70.2	69.7	66.9	63.8	50.3	39.6	33.2	32.4	31.7	58.0	10.0	68.0
	3	38.6	49.5	31.7	49.1	48.2	45.2	43.2	36.7	34.2	32.4	32.2	31.8	38.6	10.0	48.6
	4	41.2	50.8	32.9	50.4	50.1	48.1	46.5	40.9	37.0	33.8	33.4	33.0	41.2	10.0	51.2
	5	52.7	65.3	35.9	64.8	64.0	60.9	58.0	47.8	42.3	42.3	36.9	36.5	36.1	52.7	10.0
Day	6	61.6	73.5	41.4	73.2	72.6	70.0	67.3	57.1	49.6	43.1	42.5	41.6	61.6	10.0	71.6
	7	62.2	74.4	40.9	74.1	73.7	71.5	66.9	56.4	49.9	43.1	42.3	41.2	62.2	0.0	62.2
	8	58.0	68.0	40.6	67.6	67.0	65.6	63.4	58.3	52.5	42.5	41.7	40.9	58.0	0.0	58.0
	9	56.1	67.3	40.8	66.9	66.3	64.1	62.2	53.5	48.8	43.1	42.0	41.1	56.1	0.0	56.1
	10	50.5	62.3	37.8	61.7	60.7	57.9	55.4	48.2	44.6	39.8	39.0	38.0	50.5	0.0	50.5
	11	58.6	70.1	38.6	69.9	69.5	67.5	64.6	53.3	46.6	40.7	39.9	38.8	58.6	0.0	58.6
	12	54.9	64.3	44.7	64.1	63.5	61.3	59.8	54.3	51.4	47.0	46.2	45.2	54.9	0.0	54.9
	13	51.3	61.4	38.4	61.1	60.6	58.9	57.0	50.3	46.0	40.8	40.0	38.7	51.3	0.0	51.3
	14	53.1	64.9	37.2	64.6	64.0	60.9	57.8	50.7	46.3	39.1	38.2	37.5	53.1	0.0	53.1
	15	55.0	66.7	40.4	66.2	65.3	62.9	59.9	53.2	48.7	42.7	41.9	40.6	55.0	0.0	55.0
	16	54.8	66.1	43.0	65.6	65.1	63.0	60.6	51.6	47.4	44.2	43.8	43.2	54.8	0.0	54.8
	17	57.5	71.2	42.4	70.2	68.9	65.3	61.9	52.0	47.9	43.7	43.2	42.6	57.5	0.0	57.5
	18	53.5	63.6	42.3	63.1	62.3	60.1	58.2	53.2	49.5	44.1	43.4	42.6	53.5	0.0	53.5
	19	49.8	59.5	41.1	59.0	58.1	55.8	54.2	49.9	46.7	42.4	41.9	41.3	49.8	5.0	54.8
	20	49.0	58.9	40.5	58.3	57.4	54.6	53.2	49.4	45.4	41.6	41.2	40.6	49.0	5.0	54.0
	21	45.8	56.1	37.8	55.6	54.7	52.4	50.0	45.4	42.2	38.8	38.3	37.9	45.8	5.0	50.8
Night	22	46.4	59.2	35.4	58.8	57.9	53.6	50.7	41.1	38.6	36.1	35.9	35.5	46.4	10.0	56.4
	23	40.3	47.2	34.7	46.9	46.4	44.9	43.9	41.1	38.5	35.9	35.5	34.9	40.3	10.0	50.3
Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$ (dBA)		
Day	Min	45.8	56.1	37.2	55.6	54.7	52.4	50.0	45.4	42.2	38.8	38.2	37.5	24-Hour	Daytime (7am-10pm)	Nighttime (10pm-7am)
	Max	62.2	74.4	44.7	74.1	73.7	71.5	66.9	58.3	52.5	47.0	46.2	45.2			
Energy Average		55.9	Average:		64.5	63.8	61.4	59.0	52.0	47.6	42.2	41.5	40.7			
Night	Min	35.8	44.4	30.6	44.1	43.6	41.9	38.9	35.8	33.2	30.9	30.8	30.6	55.3	55.9	54.2
	Max	61.6	73.5	41.4	73.2	72.6	70.0	67.3	57.1	49.6	43.1	42.5	41.6			
Energy Average		54.2	Average:		57.0	56.3	53.4	50.9	43.4	38.9	35.2	34.8	34.3			

## 24-Hour Noise Level Measurement Summary

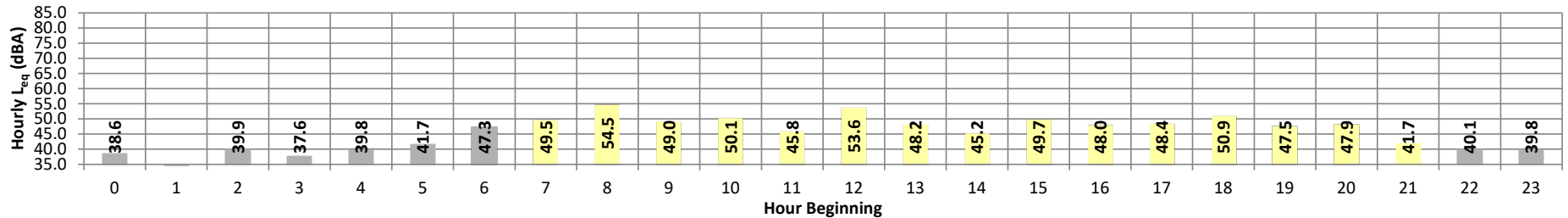
Date: Wednesday, February 10, 2021  
Project: Keller Crossing

Location: L5 - Located at the northwest corner of the Project site near  
Source: the end of Pourroy Road.

Meter: Piccolo II

JN: 13649  
Analyst: B. Lawson

Hourly  $L_{eq}$  dBA Readings (unadjusted)



Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$	Adj.	Adj. $L_{eq}$	
Night	0	38.6	43.5	34.3	43.2	42.9	42.0	41.4	39.6	37.8	35.5	35.0	34.5	38.6	10.0	48.6	
	1	34.7	39.8	31.5	39.5	39.2	38.3	37.5	35.3	33.7	31.9	31.7	31.5	34.7	10.0	44.7	
	2	39.9	47.7	32.7	47.4	47.0	46.2	44.9	40.4	36.6	33.4	33.0	32.7	39.9	10.0	49.9	
	3	37.6	43.0	32.8	42.7	42.4	41.6	41.1	38.4	36.4	34.0	33.5	33.0	37.6	10.0	47.6	
	4	39.8	45.7	34.7	45.3	44.8	43.8	43.2	40.7	38.7	36.0	35.5	34.8	39.8	10.0	49.8	
	5	41.7	47.0	37.3	46.6	46.1	45.0	44.4	42.5	40.9	38.4	37.9	37.4	41.7	10.0	51.7	
	6	47.3	56.4	40.0	55.6	54.6	52.7	51.4	47.4	44.9	41.6	41.0	40.2	47.3	10.0	57.3	
Day	7	49.5	57.4	38.7	56.7	56.1	55.1	54.4	50.7	46.1	40.9	40.0	39.0	49.5	0.0	49.5	
	8	54.5	61.8	40.1	61.4	61.2	60.5	59.9	56.5	49.8	42.0	41.2	40.4	54.5	0.0	54.5	
	9	49.0	57.2	38.8	56.6	55.7	54.3	53.4	50.3	46.3	41.2	40.2	39.1	49.0	0.0	49.0	
	10	50.1	57.8	38.0	57.3	56.9	56.0	55.3	51.3	46.5	40.8	39.6	38.3	50.1	0.0	50.1	
	11	45.8	53.4	38.8	52.8	51.9	50.6	49.9	46.8	43.8	40.2	39.6	39.1	45.8	0.0	45.8	
	12	53.6	60.7	46.7	60.0	59.1	57.9	57.2	54.3	52.2	48.1	47.5	46.9	53.6	0.0	53.6	
	13	48.2	56.1	38.6	55.6	55.2	53.9	52.8	49.2	45.4	40.0	39.4	38.9	48.2	0.0	48.2	
	14	45.2	53.5	36.4	52.8	52.1	50.6	49.7	46.2	42.5	38.1	37.3	36.6	45.2	0.0	45.2	
	15	49.7	62.5	40.2	61.9	60.7	58.2	52.6	47.0	44.7	41.6	41.1	40.5	49.7	0.0	49.7	
	16	48.0	58.4	40.4	57.8	57.0	54.1	52.2	47.4	44.5	41.6	41.1	40.5	48.0	0.0	48.0	
	17	48.4	57.3	41.5	56.9	56.4	54.5	52.3	48.4	45.9	42.6	42.2	41.7	48.4	0.0	48.4	
	18	50.9	56.3	41.9	56.0	55.7	55.0	54.6	52.7	49.6	43.7	43.0	42.2	50.9	0.0	50.9	
	19	47.5	54.7	40.9	54.2	53.4	51.9	51.2	48.3	46.0	42.2	41.6	41.0	47.5	5.0	52.5	
	20	47.9	54.7	41.3	54.4	54.0	52.8	52.3	48.9	45.6	42.4	42.0	41.5	47.9	5.0	52.9	
	21	41.7	47.1	37.2	46.8	46.5	45.7	45.1	42.5	40.6	38.3	37.8	37.3	41.7	5.0	46.7	
Night	22	40.1	44.1	36.1	43.8	43.6	43.0	42.6	41.1	39.5	37.0	36.7	36.3	40.1	10.0	50.1	
Night	23	39.8	46.7	35.1	46.4	46.0	44.3	43.4	39.8	38.3	36.1	35.8	35.3	39.8	10.0	49.8	
Timeframe	Hour	$L_{eq}$	$L_{max}$	$L_{min}$	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	$L_{eq}$ (dBA)			
Day	Min	41.7	47.1	36.4	46.8	46.5	45.7	45.1	42.5	40.6	38.1	37.3	36.6	24-Hour	48.0	49.7	41.3
	Max	54.5	62.5	46.7	61.9	61.2	60.5	59.9	56.5	52.2	48.1	47.5	46.9				
Energy Average		49.7	Average:		56.1	55.5	54.0	52.9	49.4	46.0	41.6	40.9	40.2				
Night	Min	34.7	39.8	31.5	39.5	39.2	38.3	37.5	35.3	33.7	31.9	31.7	31.5				
	Max	47.3	56.4	40.0	55.6	54.6	52.7	51.4	47.4	44.9	41.6	41.0	40.2				
Energy Average		41.3	Average:		45.6	45.2	44.1	43.3	40.6	38.5	36.0	35.6	35.1				

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**APPENDIX 7.1:**  
**OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS**

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Menifee Rd. Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 11,004 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 889 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.92	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-20.16	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-24.11	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.7	56.7	65.1	65.7	
Medium Trucks:	58.7	55.7	48.2	57.0	63.1	63.2	
Heavy Trucks:	59.1	56.0	52.6	57.2	63.4	63.5	
Vehicle Noise:	66.8	65.2	63.2	61.7	68.7	69.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			53	114	245	528	
CNEL:			55	119	257	555	

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Whitewood Rd. Road Segment: s/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 19,354 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,564 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.26	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-15.12	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.91	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.8	65.4	59.4	67.9	68.5	
Medium Trucks:	63.9	60.9	53.1	62.3	68.5	68.5	
Heavy Trucks:	71.0	67.9	60.1	69.3	75.5	75.5	
Vehicle Noise:	73.2	70.9	66.7	70.5	76.9	77.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			143	309	665	1,434	
CNEL:			146	314	677	1,459	

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Whitewood Rd. Road Segment: n/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 25,689 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,076 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.97	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.89	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.68	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.1	66.6	60.6	69.1	69.7	
Medium Trucks:	65.2	62.1	54.3	63.5	69.7	69.7	
Heavy Trucks:	72.2	69.1	61.4	70.6	76.7	76.8	
Vehicle Noise:	74.4	72.1	68.0	71.7	78.1	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			173	373	804	1,731	
CNEL:			176	380	818	1,762	

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Leon Rd. Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 5,684 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 459 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.20	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-23.44	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-27.40	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	61.4	55.3	63.8	64.4	
Medium Trucks:	57.2	54.2	46.7	55.4	61.6	61.6	
Heavy Trucks:	57.2	54.1	50.7	55.3	61.5	61.6	
Vehicle Noise:	65.3	63.7	60.1	67.2	67.5	67.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			38	83	178	384	
CNEL:			40	87	188	404	

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Leon Rd. Road Segment: s/o Keller Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 5,717 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 462 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.01	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-20.88	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-18.66	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.4	61.4	60.0	54.0	62.4	63.1	
Medium Trucks:	58.3	55.3	47.5	56.7	62.8	62.9	
Heavy Trucks:	64.9	61.9	54.1	63.3	69.4	69.5	
Vehicle Noise:	67.4	65.1	61.2	64.5	71.0	71.1	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				68	147	317	684
CNEL:				70	150	323	697

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Leon Rd. Road Segment: s/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 10,836 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 876 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.23	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-18.10	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.88	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.2	62.8	56.7	65.2	65.8	
Medium Trucks:	61.1	58.0	50.3	59.5	65.6	65.7	
Heavy Trucks:	67.7	64.6	56.9	66.1	72.2	72.3	
Vehicle Noise:	70.2	67.9	67.3	73.7	73.9	73.9	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				105	226	486	1,047
CNEL:				107	230	495	1,067

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Leon Rd. Road Segment: n/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 8,343 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 674 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.37	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-19.24	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-17.02	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	63.0	61.6	55.6	64.1	64.7	
Medium Trucks:	60.0	56.9	49.1	58.3	64.5	64.5	
Heavy Trucks:	66.6	63.5	55.7	64.9	71.1	71.1	
Vehicle Noise:	69.1	66.8	62.8	66.2	72.6	72.7	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				88	190	408	880
CNEL:				90	193	416	896

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: n/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 23,272 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,880 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.54	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-14.32	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.11	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.8	58.8	67.2	67.9	
Medium Trucks:	63.3	60.3	52.5	61.7	67.9	67.9	
Heavy Trucks:	70.3	67.3	59.5	68.7	74.9	74.9	
Vehicle Noise:	72.6	70.3	66.1	69.9	76.2	76.4	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				154	331	714	1,538
CNEL:				157	337	726	1,565

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: s/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,930 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,226 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	1.28	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-13.59	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-11.37	-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	Leq Night	Ldn	CNEL	
Autos:	70.5	69.6	68.2	62.1	70.6	71.2	
Medium Trucks:	66.0	62.9	55.2	64.4	70.5	70.6	
Heavy Trucks:	71.5	68.5	60.7	69.9	76.1	76.1	
Vehicle Noise:	74.7	72.6	69.1	71.5	78.0	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			376	809	1,743	3,756	
CNEL:			384	828	1,783	3,841	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,623 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,232 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	0.04	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-14.83	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-12.61	-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	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.6	59.6	68.0	68.6	
Medium Trucks:	63.6	60.5	52.7	61.9	68.1	68.1	
Heavy Trucks:	69.4	66.4	58.6	67.8	74.0	74.0	
Vehicle Noise:	72.4	70.2	66.6	69.3	75.8	75.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			266	573	1,235	2,660	
CNEL:			272	585	1,261	2,718	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,829 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,218 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	1.28	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-13.59	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-11.37	-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	Leq Night	Ldn	CNEL	
Autos:	70.5	69.6	68.1	62.1	70.6	71.2	
Medium Trucks:	66.0	62.9	55.1	64.4	70.5	70.5	
Heavy Trucks:	71.5	68.5	60.7	69.9	76.0	76.1	
Vehicle Noise:	74.7	72.6	69.0	71.5	78.0	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			375	808	1,740	3,749	
CNEL:			383	826	1,780	3,835	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: n/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,955 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,340 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	0.24	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-14.62	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-12.41	-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	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.8	59.8	68.2	68.8	
Medium Trucks:	63.8	60.7	52.9	62.1	68.3	68.3	
Heavy Trucks:	69.6	66.6	58.8	68.0	74.2	74.2	
Vehicle Noise:	72.6	70.4	66.8	69.5	76.0	76.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			275	591	1,274	2,745	
CNEL:			280	604	1,302	2,804	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: s/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 27,865 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,252 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	0.08	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-14.79	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-12.57	-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	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.6	59.6	68.1	68.7	
Medium Trucks:	63.6	60.5	52.8	62.0	68.1	68.2	
Heavy Trucks:	69.5	66.4	58.6	67.8	74.0	74.0	
Vehicle Noise:	72.4	70.2	66.6	69.3	75.8	75.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			268	576	1,242	2,676	
CNEL:			273	589	1,269	2,733	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: s/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 53,515 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,324 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.91	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.96	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.74	-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	Leq Night	Ldn	CNEL	
Autos:	70.8	69.9	68.4	62.4	70.9	71.5	
Medium Trucks:	66.4	63.4	55.6	64.8	71.0	71.0	
Heavy Trucks:	72.3	69.2	61.5	70.7	76.8	76.9	
Vehicle Noise:	75.2	73.1	69.4	72.2	78.6	78.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			413	891	1,919	4,134	
CNEL:			422	910	1,960	4,223	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: n/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 38,881 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,142 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	1.52	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-13.34	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-11.13	-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	Leq Night	Ldn	CNEL	
Autos:	69.4	68.5	67.1	61.0	69.5	70.1	
Medium Trucks:	65.0	62.0	54.2	63.4	69.6	69.6	
Heavy Trucks:	70.9	67.9	60.1	69.3	75.4	75.5	
Vehicle Noise:	73.9	71.7	68.0	70.8	77.2	77.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			334	720	1,551	3,341	
CNEL:			341	735	1,584	3,413	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: n/o Via Mira Mosa/Auld Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 48,296 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,902 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.46	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-12.40	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-10.18	-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	Leq Night	Ldn	CNEL	
Autos:	70.4	69.4	68.0	62.0	70.4	71.1	
Medium Trucks:	66.0	62.9	55.2	64.4	70.5	70.6	
Heavy Trucks:	71.8	68.8	61.0	70.2	76.4	76.4	
Vehicle Noise:	74.8	72.6	69.0	71.7	78.2	78.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			386	832	1,792	3,861	
CNEL:			394	850	1,831	3,944	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: n/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 51,852 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,190 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.77	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-12.09	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.88	-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	Leq Night	Ldn	CNEL	
Autos:	70.7	69.7	68.3	62.3	70.8	71.4	
Medium Trucks:	66.3	63.2	55.5	64.7	70.8	70.9	
Heavy Trucks:	72.2	69.1	61.3	70.5	76.7	76.7	
Vehicle Noise:	75.1	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:			405	872	1,879	4,048	
CNEL:			414	891	1,919	4,135	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Scott Rd. Road Segment: w/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 23,611 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,908 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.27	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-15.13	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.91	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	66.1	60.1	68.5	69.1	
Medium Trucks:	64.2	61.2	53.4	62.6	68.8	68.8	
Heavy Trucks:	70.4	67.4	59.6	68.8	75.0	75.0	
Vehicle Noise:	73.2	70.9	67.1	70.2	76.6	76.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			210	453	976	2,102	
CNEL:			214	462	995	2,145	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Winchester Rd. (SR-79) Road Segment: s/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 54,693 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,419 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.00	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.86	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.64	-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	Leq Night	Ldn	CNEL	
Autos:	70.9	70.0	68.5	62.5	71.0	71.6	
Medium Trucks:	66.5	63.5	55.7	64.9	71.1	71.1	
Heavy Trucks:	72.4	69.3	61.6	70.8	76.9	77.0	
Vehicle Noise:	75.3	73.2	69.5	72.3	78.7	78.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			419	904	1,947	4,195	
CNEL:			429	923	1,989	4,285	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E Road Name: Scott Rd. Road Segment: e/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 23,729 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,917 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.24	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-15.11	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.89	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	66.1	60.1	68.5	69.2	
Medium Trucks:	64.3	61.2	53.4	62.6	68.8	68.8	
Heavy Trucks:	70.5	67.4	59.6	68.8	75.0	75.0	
Vehicle Noise:	73.2	71.0	67.2	70.2	76.6	76.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			211	454	979	2,109	
CNEL:			215	464	999	2,152	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: E Road Name: Scott Rd. Road Segment: w/o Leon Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 11,477 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 927 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	-3.40	-1.85	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-18.27	-1.84	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-16.05	-1.84	-1.20	-5.25	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	65.3	64.4	62.9	56.9	65.4	66.0			
Medium Trucks:	61.1	58.0	50.3	59.5	65.6	65.7			
Heavy Trucks:	67.3	64.3	56.5	65.7	71.8	71.9			
Vehicle Noise:	70.0	67.8	64.0	67.1	73.5	73.6			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			130	280	603	1,300			
CNEL:			133	286	615	1,326			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: E Road Name: Clinton Keith Rd. Road Segment: w/o Whitewood Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 35,285 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,851 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	70.20	1.89	-0.69	-1.20	-4.71	0.000	0.000		
Medium Trucks:	81.00	-12.97	-0.67	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	85.38	-10.76	-0.67	-1.20	-5.29	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	70.2	69.2	67.8	61.8	70.3	70.9			
Medium Trucks:	66.2	63.1	55.3	64.5	70.7	70.7			
Heavy Trucks:	72.8	69.7	61.9	71.1	77.3	77.3			
Vehicle Noise:	75.2	73.0	69.0	72.4	78.8	78.9			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			258	557	1,200	2,585			
CNEL:			263	567	1,222	2,633			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: E Road Name: Keller Rd. Road Segment: e/o Leon Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 1,197 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 97 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 46.915 Medium Trucks: 46.726 Heavy Trucks: 46.744					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	70.20	-12.56	0.31	-1.20	-4.65	0.000	0.000		
Medium Trucks:	81.00	-29.79	0.34	-1.20	-4.87	0.000	0.000		
Heavy Trucks:	85.38	-33.75	0.34	-1.20	-5.43	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	56.8	55.7	54.4	48.4	56.8	57.4			
Medium Trucks:	50.3	47.4	39.9	48.6	54.8	54.8			
Heavy Trucks:	50.8	47.6	44.3	48.9	55.1	55.2			
Vehicle Noise:	58.5	56.8	54.9	53.4	60.4	60.7			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			11	25	53	115			
CNEL:			12	26	56	121			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: E Road Name: Clinton Keith Rd. Road Segment: e/o Whitewood Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 27,091 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,189 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	0.33	-0.69	-1.20	-4.71	0.000	0.000		
Medium Trucks:	82.40	-14.54	-0.67	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-12.32	-0.67	-1.20	-5.29	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	70.2	69.2	67.8	61.8	70.3	70.9			
Medium Trucks:	66.0	62.9	55.2	64.4	70.5	70.6			
Heavy Trucks:	72.2	69.2	61.4	70.6	76.7	76.8			
Vehicle Noise:	74.9	72.7	68.9	72.0	78.4	78.5			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			243	524	1,128	2,431			
CNEL:			248	534	1,151	2,480			

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Menifee Rd. Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 11,414 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 922 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.76	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-20.00	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-23.95	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.9	56.8	65.3	65.9	
Medium Trucks:	58.8	55.9	48.4	57.1	63.3	63.3	
Heavy Trucks:	59.3	56.1	52.7	57.4	63.6	63.7	
Vehicle Noise:	67.0	65.3	63.4	61.9	68.9	69.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			54	117	251	541	
CNEL:			57	122	264	568	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Whitewood Rd. Road Segment: s/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 19,442 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,571 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.24	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-15.10	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.89	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.8	65.4	59.4	67.9	68.5	
Medium Trucks:	64.0	60.9	53.1	62.3	68.5	68.5	
Heavy Trucks:	71.0	67.9	60.1	69.4	75.5	75.5	
Vehicle Noise:	73.2	70.9	66.7	70.5	76.9	77.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			144	310	667	1,438	
CNEL:			146	315	679	1,463	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Whitewood Rd. Road Segment: n/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 25,909 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,093 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.01	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.86	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.64	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.1	66.7	60.7	69.1	69.7	
Medium Trucks:	65.2	62.2	54.4	63.6	69.7	69.8	
Heavy Trucks:	72.2	69.2	61.4	70.6	76.8	76.8	
Vehicle Noise:	74.5	72.1	68.0	71.7	78.1	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			174	375	808	1,741	
CNEL:			177	382	822	1,772	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Leon Rd. Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 7,668 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 620 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.90	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-22.14	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-26.10	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.7	56.7	65.1	65.7	
Medium Trucks:	58.5	55.5	48.0	56.7	62.9	63.0	
Heavy Trucks:	58.5	55.4	52.0	56.6	62.8	62.9	
Vehicle Noise:	66.6	65.0	63.2	61.4	68.5	68.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			47	101	218	469	
CNEL:			49	106	229	493	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Leon Rd. Road Segment: s/o Keller Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 6,845 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 553 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.23	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-20.10	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-17.88	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.2	60.8	54.7	63.2	63.8	
Medium Trucks:	59.1	56.1	48.3	57.5	63.6	63.7	
Heavy Trucks:	65.7	62.6	54.9	64.1	70.2	70.3	
Vehicle Noise:	68.2	65.9	62.0	65.3	71.7	71.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			77	166	358	771	
CNEL:			79	169	365	785	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Leon Rd. Road Segment: s/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 11,964 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 967 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.80	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-17.67	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.45	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	63.2	57.2	65.6	66.3	
Medium Trucks:	61.5	58.5	50.7	59.9	66.1	66.1	
Heavy Trucks:	68.1	65.1	57.3	66.5	72.7	72.7	
Vehicle Noise:	70.6	68.3	64.4	67.8	74.2	74.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			112	241	519	1,119	
CNEL:			114	246	529	1,140	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Leon Rd. Road Segment: n/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 9,471 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 765 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.82	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-18.69	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-16.47	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	62.2	56.2	64.6	65.2	
Medium Trucks:	60.5	57.5	49.7	58.9	65.0	65.1	
Heavy Trucks:	67.1	64.1	56.3	65.5	71.6	71.7	
Vehicle Noise:	69.6	67.3	63.4	66.7	73.2	73.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			96	206	444	957	
CNEL:			98	210	453	975	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: n/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 23,776 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,921 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.64	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-14.23	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-12.01	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.9	58.9	67.3	68.0	
Medium Trucks:	63.4	60.4	52.6	61.8	67.9	68.0	
Heavy Trucks:	70.4	67.4	59.6	68.8	75.0	75.0	
Vehicle Noise:	72.7	70.3	66.2	70.0	76.3	76.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			156	336	724	1,560	
CNEL:			159	342	737	1,588	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: s/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 40,748 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,292 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	1.37	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-13.50	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-11.28	-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	Leq Night	Ldn	CNEL
Autos:	70.6	69.7	68.2	62.2	70.7	71.3
Medium Trucks:	66.1	63.0	55.2	64.5	70.6	70.6
Heavy Trucks:	71.6	68.6	60.8	70.0	76.1	76.2
Vehicle Noise:	74.8	72.7	69.1	71.6	78.1	78.2

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	381	820	1,767	3,807	
CNEL:	389	839	1,807	3,894	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 28,443 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,298 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	0.16	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-14.70	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-12.48	-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	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.7	59.7	68.1	68.8
Medium Trucks:	63.7	60.6	52.9	62.1	68.2	68.3
Heavy Trucks:	69.5	66.5	58.7	67.9	74.1	74.1
Vehicle Noise:	72.5	70.3	66.7	69.4	75.9	76.0

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	271	584	1,259	2,713	
CNEL:	277	597	1,286	2,771	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 40,649 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,284 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	1.37	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-13.50	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-11.28	-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	Leq Night	Ldn	CNEL
Autos:	70.6	69.6	68.2	62.2	70.7	71.3
Medium Trucks:	66.1	63.0	55.2	64.4	70.6	70.6
Heavy Trucks:	71.6	68.6	60.8	70.0	76.1	76.2
Vehicle Noise:	74.8	72.6	69.1	71.6	78.1	78.2

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	380	819	1,764	3,801	
CNEL:	389	838	1,804	3,887	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: n/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 31,009 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,506 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	0.54	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-14.33	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-12.11	-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	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	66.1	60.1	68.5	69.1
Medium Trucks:	64.1	61.0	53.2	62.4	68.6	68.6
Heavy Trucks:	69.9	66.9	59.1	68.3	74.5	74.5
Vehicle Noise:	72.9	70.7	67.1	69.8	76.3	76.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	287	619	1,334	2,873	
CNEL:	294	632	1,362	2,935	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: s/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 29,509 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,384 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	0.32	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-14.54	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-12.32	-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	Leq Night	Ldn	CNEL	
Autos:	68.2	67.3	65.9	59.8	68.3	68.9	
Medium Trucks:	63.9	60.8	53.0	62.2	68.4	68.4	
Heavy Trucks:	69.7	66.7	58.9	68.1	74.2	74.3	
Vehicle Noise:	72.7	70.5	66.8	69.6	76.0	76.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			278	599	1,290	2,780	
CNEL:			284	612	1,318	2,840	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: s/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 54,717 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,421 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.01	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.86	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.64	-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	Leq Night	Ldn	CNEL	
Autos:	70.9	70.0	68.5	62.5	71.0	71.6	
Medium Trucks:	66.5	63.5	55.7	64.9	71.1	71.1	
Heavy Trucks:	72.4	69.3	61.6	70.8	76.9	77.0	
Vehicle Noise:	75.3	73.2	69.5	72.3	78.7	78.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			420	904	1,948	4,196	
CNEL:			429	923	1,990	4,286	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: n/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 40,303 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,256 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	1.68	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-13.19	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-10.97	-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	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	67.2	61.2	69.7	70.3	
Medium Trucks:	65.2	62.2	54.4	63.6	69.7	69.8	
Heavy Trucks:	71.1	68.0	60.2	69.4	75.6	75.6	
Vehicle Noise:	74.0	71.8	68.2	70.9	77.4	77.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			342	737	1,588	3,422	
CNEL:			350	753	1,623	3,496	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: n/o Via Mira Mosa/Auld Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 49,328 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,986 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.56	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-12.31	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-10.09	-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	Leq Night	Ldn	CNEL	
Autos:	70.5	69.5	68.1	62.1	70.5	71.2	
Medium Trucks:	66.1	63.0	55.2	64.5	70.6	70.6	
Heavy Trucks:	71.9	68.9	61.1	70.3	76.5	76.5	
Vehicle Noise:	74.9	72.7	69.1	71.8	78.3	78.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			392	844	1,818	3,916	
CNEL:			400	862	1,857	4,000	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: n/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 52,570 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,248 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.83	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-12.03	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.82	-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	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.4	62.3	70.8	71.4	
Medium Trucks:	66.4	63.3	55.5	64.7	70.9	70.9	
Heavy Trucks:	72.2	69.2	61.4	70.6	76.7	76.8	
Vehicle Noise:	75.2	73.0	69.3	72.1	78.5	78.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			409	880	1,896	4,085	
CNEL:			417	899	1,937	4,173	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Scott Rd. Road Segment: w/o Meniffee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 24,745 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,999 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.06	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-14.93	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.71	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	66.3	60.3	68.7	69.3	
Medium Trucks:	64.4	61.4	53.6	62.8	69.0	69.0	
Heavy Trucks:	70.6	67.6	59.8	69.0	75.2	75.2	
Vehicle Noise:	73.4	71.1	67.3	70.4	76.8	77.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			217	467	1,007	2,169	
CNEL:			221	477	1,027	2,213	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Winchester Rd. (SR-79) Road Segment: s/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 55,191 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,459 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.04	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.82	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.60	-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	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.6	62.6	71.0	71.6	
Medium Trucks:	66.6	63.5	55.7	64.9	71.1	71.1	
Heavy Trucks:	72.4	69.4	61.6	70.8	77.0	77.0	
Vehicle Noise:	75.4	73.2	69.6	72.3	78.8	78.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			422	909	1,959	4,220	
CNEL:			431	929	2,001	4,311	

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Scott Rd. Road Segment: e/o Meniffee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 25,397 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,052 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.05	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-14.82	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.60	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.8	66.4	60.4	68.8	69.5	
Medium Trucks:	64.5	61.5	53.7	62.9	69.1	69.1	
Heavy Trucks:	70.8	67.7	59.9	69.1	75.3	75.3	
Vehicle Noise:	73.5	71.2	67.5	70.5	76.9	77.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			221	475	1,024	2,207	
CNEL:			225	485	1,045	2,252	

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Scott Rd. Road Segment: w/o Leon Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 13,417 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,084 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.72	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-17.59	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.37	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.6	57.6	66.1	66.7	
Medium Trucks:	61.8	58.7	50.9	60.1	66.3	66.3	
Heavy Trucks:	68.0	64.9	57.2	66.4	72.5	72.5	
Vehicle Noise:	70.7	68.5	64.7	67.7	74.2	74.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			144	311	669	1,442	
CNEL:			147	317	683	1,471	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Clinton Keith Rd. Road Segment: w/o Whitewood Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 36,105 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,917 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.99	-0.69	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-12.87	-0.67	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.66	-0.67	-1.20	-5.29	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.3	67.9	61.9	70.4	71.0	
Medium Trucks:	66.3	63.2	55.4	64.6	70.8	70.8	
Heavy Trucks:	72.9	69.8	62.0	71.2	77.4	77.4	
Vehicle Noise:	75.3	73.1	69.1	72.5	78.9	79.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			262	565	1,218	2,624	
CNEL:			267	576	1,241	2,674	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Keller Rd. Road Segment: e/o Leon Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 4,309 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 348 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 46.915 Medium Trucks: 46.726 Heavy Trucks: 46.744			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.99	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-24.23	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-28.19	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.3	61.2	59.9	53.9	62.3	63.0	
Medium Trucks:	55.9	52.9	45.4	54.2	60.4	60.4	
Heavy Trucks:	56.3	53.2	49.8	54.5	60.7	60.8	
Vehicle Noise:	64.0	62.4	60.5	59.0	66.0	66.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			27	58	125	270	
CNEL:			28	61	131	283	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: E+P Road Name: Clinton Keith Rd. Road Segment: e/o Whitewood Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 28,219 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,280 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.51	-0.69	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-14.36	-0.67	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-12.14	-0.67	-1.20	-5.29	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.4	68.0	62.0	70.5	71.1	
Medium Trucks:	66.2	63.1	55.3	64.5	70.7	70.7	
Heavy Trucks:	72.4	69.3	61.5	70.8	76.9	76.9	
Vehicle Noise:	75.1	72.9	69.1	72.1	78.6	78.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			250	538	1,159	2,498	
CNEL:			255	549	1,183	2,548	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Menifee Rd. Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 26,493 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,141 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.90	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-16.34	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-20.30	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.5	60.5	68.9	69.6	
Medium Trucks:	62.5	59.5	52.0	60.8	66.9	67.0	
Heavy Trucks:	62.9	59.8	56.4	61.0	67.2	67.3	
Vehicle Noise:	70.6	69.0	67.1	65.5	72.6	72.9	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				95	204	440	949
CNEL:				100	215	462	996

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Whitewood Rd. Road Segment: s/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 25,754 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,081 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.98	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.88	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.67	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.1	66.7	60.6	69.1	69.7	
Medium Trucks:	65.2	62.1	54.4	63.6	69.7	69.7	
Heavy Trucks:	72.2	69.2	61.4	70.6	76.7	76.8	
Vehicle Noise:	74.5	72.1	68.0	71.7	78.1	78.2	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				173	374	805	1,734
CNEL:				176	380	819	1,765

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Whitewood Rd. Road Segment: n/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 38,321 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.71	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-12.16	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.94	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.4	62.4	70.8	71.4	
Medium Trucks:	66.9	63.9	56.1	65.3	71.4	71.5	
Heavy Trucks:	73.9	70.9	63.1	72.3	78.5	78.5	
Vehicle Noise:	76.2	73.8	69.7	73.4	79.8	79.9	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				226	487	1,049	2,260
CNEL:				230	495	1,067	2,300

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Leon Rd. Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 19,941 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,611 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.75	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-17.99	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.95	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.8	60.8	69.2	69.8	
Medium Trucks:	62.6	59.6	52.1	60.9	67.1	67.1	
Heavy Trucks:	62.6	59.5	56.1	60.8	67.0	67.1	
Vehicle Noise:	70.8	69.2	67.3	65.6	72.7	73.0	
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				89	191	412	887
CNEL:				93	201	433	933

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Leon Rd. Road Segment: s/o Keller Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 16,854 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,362 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.32	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-16.18	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.96	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.7	58.7	67.1	67.7	
Medium Trucks:	63.0	60.0	52.2	61.4	67.5	67.6	
Heavy Trucks:	69.6	66.6	58.8	68.0	74.1	74.2	
Vehicle Noise:	72.1	69.8	65.9	69.2	75.7	75.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			141	303	652	1,406	
CNEL:			143	309	665	1,432	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Leon Rd. Road Segment: s/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 23,979 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,937 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.65	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.43	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	66.2	60.2	68.7	69.3	
Medium Trucks:	64.5	61.5	53.7	62.9	69.1	69.1	
Heavy Trucks:	71.1	68.1	60.3	69.5	75.7	75.7	
Vehicle Noise:	73.6	71.3	67.4	70.8	77.2	77.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			178	383	825	1,778	
CNEL:			181	390	841	1,812	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Leon Rd. Road Segment: n/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 23,075 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,864 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.05	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.82	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.60	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.5	66.0	60.0	68.5	69.1	
Medium Trucks:	64.4	61.3	53.5	62.8	68.9	68.9	
Heavy Trucks:	71.0	67.9	60.1	69.3	75.5	75.5	
Vehicle Noise:	73.5	71.2	67.2	70.6	77.0	77.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			173	373	804	1,733	
CNEL:			177	380	820	1,766	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 38,298 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,094 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.71	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.16	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.94	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.4	67.0	60.9	69.4	70.0	
Medium Trucks:	65.5	62.4	54.7	63.9	70.0	70.0	
Heavy Trucks:	72.5	69.5	61.7	70.9	77.0	77.1	
Vehicle Noise:	74.8	72.4	68.3	72.0	78.4	78.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			214	462	995	2,144	
CNEL:			218	470	1,013	2,182	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 63,638 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,142 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	3.31	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-11.55	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-9.33	-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	Leq Night	Ldn	CNEL	
Autos:	72.6	71.6	70.2	64.2	72.6	73.2	
Medium Trucks:	68.0	65.0	57.2	66.4	72.5	72.6	
Heavy Trucks:	73.6	70.5	62.7	71.9	78.1	78.1	
Vehicle Noise:	76.7	74.6	71.1	73.5	80.0	80.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			512	1,104	2,379	5,124	
CNEL:			524	1,129	2,433	5,241	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 56,659 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,578 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.16	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.71	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.49	-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	Leq Night	Ldn	CNEL	
Autos:	71.1	70.1	68.7	62.7	71.1	71.8	
Medium Trucks:	66.7	63.6	55.8	65.1	71.2	71.2	
Heavy Trucks:	72.5	69.5	61.7	70.9	77.1	77.1	
Vehicle Noise:	75.5	73.3	69.7	72.4	78.9	79.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			429	925	1,993	4,295	
CNEL:			439	945	2,036	4,387	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 84,062 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,792 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	4.52	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-10.34	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-8.12	-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	Leq Night	Ldn	CNEL	
Autos:	73.8	72.8	71.4	65.4	73.8	74.4	
Medium Trucks:	69.2	66.2	58.4	67.6	73.8	73.8	
Heavy Trucks:	74.8	71.7	63.9	73.1	79.3	79.3	
Vehicle Noise:	77.9	75.8	72.3	74.7	81.2	81.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			617	1,329	2,863	6,169	
CNEL:			631	1,359	2,929	6,310	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 61,426 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,963 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.51	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.36	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.14	-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	Leq Night	Ldn	CNEL	
Autos:	71.4	70.5	69.0	63.0	71.5	72.1	
Medium Trucks:	67.0	64.0	56.2	65.4	71.6	71.6	
Heavy Trucks:	72.9	69.8	62.1	71.3	77.4	77.5	
Vehicle Noise:	75.8	73.7	70.0	72.8	79.2	79.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			453	976	2,104	4,532	
CNEL:			463	997	2,149	4,630	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 58,737 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,746 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.31	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.55	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.33	-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	Leq Night	Ldn	CNEL
Autos:	71.2	70.3	68.9	62.8	71.3	71.9
Medium Trucks:	66.8	63.8	56.0	65.2	71.4	71.4
Heavy Trucks:	72.7	69.6	61.9	71.1	77.2	77.3
Vehicle Noise:	75.7	73.5	69.8	72.6	79.0	79.2

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	440	948	2,042	4,399
CNEL:	449	968	2,086	4,494

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 99,864 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 8,069 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	5.62	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-9.25	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.03	-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	Leq Night	Ldn	CNEL
Autos:	73.5	72.6	71.2	65.1	73.6	74.2
Medium Trucks:	69.1	66.1	58.3	67.5	73.7	73.7
Heavy Trucks:	75.0	72.0	64.2	73.4	79.5	79.6
Vehicle Noise:	78.0	75.8	72.1	74.9	81.3	81.5

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	627	1,350	2,909	6,266
CNEL:	640	1,379	2,971	6,401

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 72,002 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,818 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.20	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.67	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.45	-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	Leq Night	Ldn	CNEL
Autos:	72.1	71.1	69.7	63.7	72.2	72.8
Medium Trucks:	67.7	64.7	56.9	66.1	72.3	72.3
Heavy Trucks:	73.6	70.5	62.7	72.0	78.1	78.1
Vehicle Noise:	76.5	74.4	70.7	73.4	79.9	80.1

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	504	1,086	2,339	5,039
CNEL:	515	1,109	2,389	5,147

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Via Mira Mosa/Auld Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 81,807 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,610 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.75	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.11	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.90	-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	Leq Night	Ldn	CNEL
Autos:	72.7	71.7	70.3	64.3	72.7	73.4
Medium Trucks:	68.3	65.2	57.4	66.7	72.8	72.8
Heavy Trucks:	74.1	71.1	63.3	72.5	78.7	78.7
Vehicle Noise:	77.1	74.9	71.3	74.0	80.5	80.6

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	549	1,182	2,546	5,486
CNEL:	560	1,207	2,601	5,604

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 72,948 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,894 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.26	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.61	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.39	-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	Leq Night	Ldn	CNEL	
Autos:	72.2	71.2	69.8	63.8	72.2	72.9	
Medium Trucks:	67.8	64.7	56.9	66.2	72.3	72.3	
Heavy Trucks:	73.6	70.6	62.8	72.0	78.2	78.2	
Vehicle Noise:	76.6	74.4	70.8	73.5	80.0	80.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			508	1,095	2,359	5,083	
CNEL:			519	1,119	2,410	5,192	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Scott Rd. Road Segment: w/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 52,935 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,277 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.63	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.41	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	71.0	69.6	63.6	72.0	72.6	
Medium Trucks:	67.7	64.7	56.9	66.1	72.3	72.3	
Heavy Trucks:	73.9	70.9	63.1	72.3	78.5	78.5	
Vehicle Noise:	76.7	74.4	73.7	73.7	80.1	80.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			360	776	1,672	3,601	
CNEL:			367	792	1,705	3,674	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 75,284 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,083 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.39	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.47	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.26	-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	Leq Night	Ldn	CNEL	
Autos:	72.3	71.3	69.9	63.9	72.4	73.0	
Medium Trucks:	67.9	64.9	57.1	66.3	72.4	72.5	
Heavy Trucks:	73.8	70.7	62.9	72.2	78.3	78.3	
Vehicle Noise:	76.7	74.5	70.9	73.6	80.1	80.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			519	1,118	2,409	5,191	
CNEL:			530	1,142	2,461	5,302	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC 2028 Road Name: Scott Rd. Road Segment: e/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 63,118 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,100 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.00	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.86	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.64	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	71.8	70.3	64.3	72.8	73.4	
Medium Trucks:	68.5	65.4	57.7	66.9	73.0	73.1	
Heavy Trucks:	74.7	71.7	63.9	73.1	79.2	79.3	
Vehicle Noise:	77.4	75.2	71.4	74.5	80.9	81.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			405	872	1,880	4,049	
CNEL:			413	890	1,918	4,131	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: EAC 2028 Road Name: Scott Rd. Road Segment: w/o Leon Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 54,555 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,408 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	3.37	-1.85	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-11.50	-1.84	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-9.28	-1.84	-1.20	-5.25	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	72.1	71.1	69.7	63.7	72.2	72.8			
Medium Trucks:	67.9	64.8	57.0	66.2	72.4	72.4			
Heavy Trucks:	74.1	71.0	63.2	72.5	78.6	78.6			
Vehicle Noise:	76.8	74.6	70.8	73.8	80.3	80.4			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			367	792	1,705	3,674			
CNEL:			375	808	1,740	3,748			

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: EAC 2028 Road Name: Clinton Keith Rd. Road Segment: w/o Whitewood Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 63,135 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,101 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	70.20	4.42	-0.69	-1.20	-4.71	0.000	0.000		
Medium Trucks:	81.00	-10.45	-0.67	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	85.38	-8.23	-0.67	-1.20	-5.29	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	72.7	71.8	70.4	64.3	72.8	73.4			
Medium Trucks:	68.7	65.6	57.8	67.1	73.2	73.2			
Heavy Trucks:	75.3	72.2	64.4	73.7	79.8	79.8			
Vehicle Noise:	77.8	75.5	71.5	74.9	81.3	81.4			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			381	821	1,768	3,809			
CNEL:			388	836	1,801	3,881			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: EAC 2028 Road Name: Keller Rd. Road Segment: e/o Leon Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 4,499 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 364 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 46.915 Medium Trucks: 46.726 Heavy Trucks: 46.744					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	70.20	-6.80	0.31	-1.20	-4.65	0.000	0.000		
Medium Trucks:	81.00	-24.04	0.34	-1.20	-4.87	0.000	0.000		
Heavy Trucks:	85.38	-28.00	0.34	-1.20	-5.43	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	62.5	61.4	60.1	54.1	62.5	63.2			
Medium Trucks:	56.1	53.1	45.6	54.4	60.5	60.6			
Heavy Trucks:	56.5	53.4	50.0	54.6	60.8	60.9			
Vehicle Noise:	64.2	62.6	60.7	59.2	66.2	66.5			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			28	60	129	278			
CNEL:			29	63	135	292			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: EAC 2028 Road Name: Clinton Keith Rd. Road Segment: e/o Whitewood Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 53,559 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,328 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	3.29	-0.69	-1.20	-4.71	0.000	0.000		
Medium Trucks:	82.40	-11.58	-0.67	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-9.36	-0.67	-1.20	-5.29	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	73.2	72.2	70.8	64.8	73.2	73.9			
Medium Trucks:	69.0	65.9	58.1	67.3	73.5	73.5			
Heavy Trucks:	75.2	72.1	64.3	73.5	79.7	79.7			
Vehicle Noise:	77.9	75.7	71.9	74.9	81.4	81.5			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			383	825	1,777	3,829			
CNEL:			391	842	1,813	3,906			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Menifee Rd. Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 26,903 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,174 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.96	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-16.27	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-20.23	-0.97	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.6	60.6	69.0	69.6
Medium Trucks:	62.6	59.6	52.1	60.8	67.0	67.0
Heavy Trucks:	63.0	59.9	56.5	61.1	67.3	67.4
Vehicle Noise:	70.7	69.1	67.1	65.6	72.6	72.9

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	206	445	958
CNEL:	101	217	467	1,006

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Whitewood Rd. Road Segment: s/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 25,842 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,088 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.00	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.87	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.65	0.82	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.1	66.7	60.6	69.1	69.7
Medium Trucks:	65.2	62.1	54.4	63.6	69.7	69.8
Heavy Trucks:	72.2	69.2	61.4	70.6	76.7	76.8
Vehicle Noise:	74.5	72.1	68.0	71.7	78.1	78.2

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	174	375	807	1,738
CNEL:	177	381	821	1,769

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Whitewood Rd. Road Segment: n/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 38,541 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,114 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.73	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-12.13	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.91	0.82	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.4	62.4	70.8	71.5
Medium Trucks:	66.9	63.9	56.1	65.3	71.5	71.5
Heavy Trucks:	74.0	70.9	63.1	72.3	78.5	78.5
Vehicle Noise:	76.2	73.9	69.7	73.5	79.9	80.0

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	227	489	1,053	2,269
CNEL:	231	497	1,072	2,309

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Leon Rd. Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 21,925 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,772 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.34	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-17.58	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.53	-0.60	-1.20	-5.35	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	67.2	61.2	69.6	70.3
Medium Trucks:	63.0	60.1	52.6	61.3	67.5	67.5
Heavy Trucks:	63.1	59.9	56.5	61.2	67.4	67.5
Vehicle Noise:	71.2	69.6	67.7	66.0	73.1	73.4

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	204	439	945
CNEL:	99	214	461	994

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Leon Rd. Road Segment: s/o Keller Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 17,982 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,453 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.03	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-15.90	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.68	-0.60	-1.20	-5.35	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.4	65.0	58.9	67.4	68.0
Medium Trucks:	63.3	60.2	52.5	61.7	67.8	67.9
Heavy Trucks:	69.9	66.8	59.1	68.3	74.4	74.5
Vehicle Noise:	72.4	70.1	66.1	69.5	75.9	76.1

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	147	316	681	1,468	
CNEL:	150	322	694	1,495	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Leon Rd. Road Segment: s/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 25,107 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,029 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.41	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.45	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.23	-0.60	-1.20	-5.35	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.4	60.4	68.9	69.5
Medium Trucks:	64.7	61.7	53.9	63.1	69.3	69.3
Heavy Trucks:	71.3	68.3	60.5	69.7	75.9	75.9
Vehicle Noise:	73.8	71.5	67.6	71.0	77.4	77.5

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	183	395	851	1,833	
CNEL:	187	402	867	1,868	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Leon Rd. Road Segment: n/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 24,203 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,956 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.26	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.61	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.39	-0.60	-1.20	-5.35	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.7	66.3	60.2	68.7	69.3
Medium Trucks:	64.6	61.5	53.8	63.0	69.1	69.2
Heavy Trucks:	71.2	68.1	60.3	69.6	75.7	75.7
Vehicle Noise:	73.7	71.4	67.4	70.8	77.2	77.3

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	179	385	830	1,789	
CNEL:	182	393	846	1,823	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 38,802 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,135 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.76	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.10	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.89	-0.60	-1.20	-5.35	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	67.0	61.0	69.5	70.1
Medium Trucks:	65.5	62.5	54.7	63.9	70.1	70.1
Heavy Trucks:	72.6	69.5	61.7	70.9	77.1	77.1
Vehicle Noise:	74.8	72.5	68.3	72.1	78.5	78.6

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	216	466	1,004	2,163	
CNEL:	220	474	1,021	2,201	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 64,456 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,208 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	3.37	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-11.50	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-9.28	-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	Leq Night	Ldn	CNEL	
Autos:	72.6	71.6	70.2	64.2	72.7	73.3	
Medium Trucks:	68.1	65.0	57.2	66.4	72.6	72.6	
Heavy Trucks:	73.6	70.6	62.8	72.0	78.1	78.2	
Vehicle Noise:	76.8	74.6	71.1	73.6	80.1	80.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			517	1,113	2,399	5,168	
CNEL:			529	1,139	2,454	5,286	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 57,479 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,644 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.22	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.65	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.43	-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	Leq Night	Ldn	CNEL	
Autos:	71.1	70.2	68.8	62.7	71.2	71.8	
Medium Trucks:	66.7	63.7	55.9	65.1	71.3	71.3	
Heavy Trucks:	72.6	69.6	61.8	71.0	77.1	77.2	
Vehicle Noise:	75.6	73.4	69.7	72.5	78.9	79.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			434	934	2,013	4,336	
CNEL:			443	954	2,056	4,429	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 84,882 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,858 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	4.57	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-10.30	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-8.08	-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	Leq Night	Ldn	CNEL	
Autos:	73.8	72.8	71.4	65.4	73.9	74.5	
Medium Trucks:	69.3	66.2	58.4	67.6	73.8	73.8	
Heavy Trucks:	74.8	71.8	64.0	73.2	79.3	79.4	
Vehicle Noise:	78.0	75.8	72.3	74.8	81.3	81.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			621	1,338	2,882	6,209	
CNEL:			635	1,368	2,948	6,351	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 63,480 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,129 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.65	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.22	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.00	-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	Leq Night	Ldn	CNEL	
Autos:	71.6	70.6	69.2	63.2	71.6	72.3	
Medium Trucks:	67.2	64.1	56.3	65.6	71.7	71.7	
Heavy Trucks:	73.0	70.0	62.2	71.4	77.6	77.6	
Vehicle Noise:	76.0	73.8	70.2	72.9	79.4	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			463	998	2,150	4,633	
CNEL:			473	1,020	2,197	4,733	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 60,381 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,879 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.43	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.43	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.21	-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	Leq Night	Ldn	CNEL
Autos:	71.4	70.4	69.0	63.0	71.4	72.0
Medium Trucks:	67.0	63.9	56.1	65.3	71.5	71.5
Heavy Trucks:	72.8	69.8	62.0	71.2	77.3	77.4
Vehicle Noise:	75.8	73.6	69.9	72.7	79.1	79.3

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	448	965	2,080	4,481
CNEL:	458	986	2,125	4,577

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): ##### vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 8,166 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	5.67	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-9.20	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-6.98	-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	Leq Night	Ldn	CNEL
Autos:	73.6	72.6	71.2	65.2	73.7	74.3
Medium Trucks:	69.2	66.1	58.4	67.6	73.7	73.8
Heavy Trucks:	75.1	72.0	64.2	73.4	79.6	79.6
Vehicle Noise:	78.0	75.8	74.9	81.4	81.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	632	1,361	2,932	6,317
CNEL:	645	1,390	2,995	6,453

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 73,424 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,933 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.28	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.58	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.36	-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	Leq Night	Ldn	CNEL
Autos:	72.2	71.2	69.8	63.8	72.3	72.9
Medium Trucks:	67.8	64.8	57.0	66.2	72.3	72.4
Heavy Trucks:	73.7	70.6	62.8	72.0	78.2	78.2
Vehicle Noise:	76.6	74.4	70.8	73.5	80.0	80.1

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	510	1,100	2,369	5,105
CNEL:	521	1,123	2,420	5,215

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Via Mira Mosa/Auld Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 82,839 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,693 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.81	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.06	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.84	-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	Leq Night	Ldn	CNEL
Autos:	72.7	71.8	70.3	64.3	72.8	73.4
Medium Trucks:	68.3	65.3	57.5	66.7	72.9	72.9
Heavy Trucks:	74.2	71.1	63.4	72.6	78.7	78.8
Vehicle Noise:	77.1	75.0	74.1	80.5	80.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	553	1,192	2,568	5,532
CNEL:	565	1,218	2,623	5,651

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: n/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 73,666 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,952 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.30	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.57	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.35	-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	Leq Night	Ldn	CNEL
Autos:	72.2	71.2	69.8	63.8	72.3	72.9
Medium Trucks:	67.8	64.8	57.0	66.2	72.4	72.4
Heavy Trucks:	73.7	70.6	62.8	72.1	78.2	78.2
Vehicle Noise:	76.6	74.5	70.8	73.5	80.0	80.2

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	512	1,102	2,375	5,116	
CNEL:	523	1,126	2,426	5,226	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Scott Rd. Road Segment: w/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 54,069 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,369 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.33	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.53	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.32	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.1	69.7	63.7	72.1	72.7
Medium Trucks:	67.8	64.8	57.0	66.2	72.4	72.4
Heavy Trucks:	74.0	71.0	63.2	72.4	78.6	78.6
Vehicle Noise:	76.8	74.5	73.8	80.2	80.4	

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	365	787	1,695	3,652	
CNEL:	373	803	1,730	3,726	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Winchester Rd. (SR-79) Road Segment: s/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 75,782 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,123 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.42	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.45	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.23	-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	Leq Night	Ldn	CNEL
Autos:	72.3	71.4	70.0	63.9	72.4	73.0
Medium Trucks:	67.9	64.9	57.1	66.3	72.5	72.5
Heavy Trucks:	73.8	70.8	63.0	72.2	78.3	78.4
Vehicle Noise:	76.8	74.6	70.9	73.7	80.1	80.3

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	521	1,123	2,420	5,213	
CNEL:	533	1,147	2,472	5,326	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Scott Rd. Road Segment: e/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 64,786 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,235 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.12	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.75	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.53	-1.84	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.9	70.5	64.4	72.9	73.5
Medium Trucks:	68.6	65.6	57.8	67.0	73.1	73.2
Heavy Trucks:	74.8	71.8	64.0	73.2	79.4	79.4
Vehicle Noise:	77.5	75.3	74.6	81.0	81.1	

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	412	888	1,913	4,120	
CNEL:	420	906	1,951	4,204	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Scott Rd. Road Segment: w/o Leon Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 56,495 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,565 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.52	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.34	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.13	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	71.3	69.9	63.8	72.3	72.9	
Medium Trucks:	68.0	65.0	57.2	66.4	72.5	72.6	
Heavy Trucks:	74.2	71.2	63.4	72.6	78.8	78.8	
Vehicle Noise:	77.0	74.7	70.9	74.0	80.4	80.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			376	810	1,746	3,761	
CNEL:			384	827	1,781	3,837	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Clinton Keith Rd. Road Segment: w/o Whitewood Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 63,955 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,168 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.48	-0.69	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-10.39	-0.67	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-8.17	-0.67	-1.20	-5.29	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.8	70.4	64.4	72.8	73.5	
Medium Trucks:	68.7	65.7	57.9	67.1	73.3	73.3	
Heavy Trucks:	75.3	72.3	64.5	73.7	79.9	79.9	
Vehicle Noise:	77.8	75.5	71.6	75.0	81.4	81.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			384	828	1,783	3,842	
CNEL:			391	843	1,817	3,915	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Keller Rd. Road Segment: e/o Leon Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 7,611 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 615 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 46.915 Medium Trucks: 46.726 Heavy Trucks: 46.744			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.52	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-21.76	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-25.71	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	62.4	56.4	64.8	65.4	
Medium Trucks:	58.4	55.4	47.9	56.7	62.8	62.9	
Heavy Trucks:	58.8	55.7	52.3	56.9	63.1	63.2	
Vehicle Noise:	66.5	64.9	62.9	61.4	68.5	68.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			39	85	183	394	
CNEL:			41	89	192	414	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: EAC+P 2028 Road Name: Clinton Keith Rd. Road Segment: e/o Whitewood Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 54,687 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,419 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.38	-0.69	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-11.48	-0.67	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.27	-0.67	-1.20	-5.29	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.3	72.3	70.9	64.9	73.3	74.0	
Medium Trucks:	69.0	66.0	58.2	67.4	73.6	73.6	
Heavy Trucks:	75.3	72.2	64.4	73.6	79.8	79.8	
Vehicle Noise:	78.0	75.7	72.0	75.0	81.4	81.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			388	836	1,802	3,882	
CNEL:			396	853	1,838	3,961	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Menifee Rd. Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 29,143 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,355 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.31	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-15.93	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.88	-0.97	-1.20	-5.31	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.9	60.9	69.3	70.0	
Medium Trucks:	62.9	59.9	52.4	61.2	67.4	67.4	
Heavy Trucks:	63.3	60.2	56.8	61.5	67.7	67.7	
Vehicle Noise:	71.0	69.4	67.5	66.0	73.0	73.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			101	218	469	1,011	
CNEL:			106	229	493	1,061	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Whitewood Rd. Road Segment: s/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 28,329 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,289 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.40	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.47	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.25	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.5	67.1	61.0	69.5	70.1	
Medium Trucks:	65.6	62.5	54.8	64.0	70.1	70.2	
Heavy Trucks:	72.6	69.6	61.8	71.0	77.1	77.2	
Vehicle Noise:	74.9	72.5	68.4	72.1	78.5	78.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			185	398	858	1,848	
CNEL:			188	405	873	1,880	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Whitewood Rd. Road Segment: n/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 42,154 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,406 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.12	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-11.74	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.53	0.82	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.2	70.2	68.8	62.8	71.2	71.9	
Medium Trucks:	67.3	64.3	56.5	65.7	71.9	71.9	
Heavy Trucks:	74.3	71.3	63.5	72.7	78.9	78.9	
Vehicle Noise:	76.6	74.3	70.1	73.9	80.2	80.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			241	519	1,118	2,409	
CNEL:			245	528	1,138	2,451	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Leon Rd. Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 21,935 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,772 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEF	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.34	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-17.58	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.53	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	67.2	61.2	69.6	70.3	
Medium Trucks:	63.0	60.1	52.6	61.3	67.5	67.5	
Heavy Trucks:	63.1	59.9	56.5	61.2	67.4	67.5	
Vehicle Noise:	71.2	69.6	67.7	66.0	73.1	73.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			95	204	439	945	
CNEL:			99	214	461	994	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Leon Rd. Road Segment: s/o Keller Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 18,540 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,498 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.90	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-15.77	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.55	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.5	65.1	59.1	67.5	68.2	
Medium Trucks:	63.4	60.4	52.6	61.8	68.0	68.0	
Heavy Trucks:	70.0	67.0	59.2	68.4	74.6	74.6	
Vehicle Noise:	72.5	70.2	66.3	69.7	76.1	76.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
	Ldn:		150	323	695	1,498	
	CNEL:		153	329	708	1,526	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Leon Rd. Road Segment: s/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 26,377 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,131 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.63	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.24	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.02	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.6	60.6	69.1	69.7	
Medium Trucks:	65.0	61.9	54.1	63.3	69.5	69.5	
Heavy Trucks:	71.6	68.5	60.7	69.9	76.1	76.1	
Vehicle Noise:	74.1	71.8	67.8	71.2	77.6	77.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
	Ldn:		189	408	879	1,895	
	CNEL:		193	416	896	1,930	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Leon Rd. Road Segment: n/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 25,383 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,051 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.46	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.40	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.19	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.9	66.5	60.4	68.9	69.5	
Medium Trucks:	64.8	61.7	54.0	63.2	69.3	69.4	
Heavy Trucks:	71.4	68.3	60.6	69.8	75.9	76.0	
Vehicle Noise:	73.9	71.6	67.6	71.0	77.4	77.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
	Ldn:		185	398	857	1,847	
	CNEL:		188	405	873	1,882	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 38,802 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,135 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.76	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.10	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.89	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	67.0	61.0	69.5	70.1	
Medium Trucks:	65.5	62.5	54.7	63.9	70.1	70.1	
Heavy Trucks:	72.6	69.5	61.7	70.9	77.1	77.1	
Vehicle Noise:	74.8	72.5	68.3	72.1	78.5	78.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
	Ldn:		216	466	1,004	2,163	
	CNEL:		220	474	1,021	2,201	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 64,456 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,208 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	3.37	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-11.50	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-9.28	-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	Leq Night	Ldn	CNEL
Autos:	72.6	71.6	70.2	64.2	72.7	73.3
Medium Trucks:	68.1	65.0	57.2	66.4	72.6	72.6
Heavy Trucks:	73.6	70.6	62.8	72.0	78.1	78.2
Vehicle Noise:	76.8	74.6	71.1	73.6	80.1	80.2

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	517	1,113	2,399	5,168
CNEL:	529	1,139	2,454	5,286

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 62,468 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,047 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.58	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.28	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.07	-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	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	69.1	63.1	71.6	72.2
Medium Trucks:	67.1	64.1	56.3	65.5	71.6	71.7
Heavy Trucks:	73.0	69.9	62.1	71.3	77.5	77.5
Vehicle Noise:	75.9	73.7	70.1	72.8	79.3	79.4

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	458	987	2,127	4,583
CNEL:	468	1,009	2,173	4,682

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 92,468 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 7,471 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	4.94	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-9.93	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-7.71	-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	Leq Night	Ldn	CNEL
Autos:	74.2	73.2	71.8	65.8	74.2	74.9
Medium Trucks:	69.6	66.6	58.8	68.0	74.2	74.2
Heavy Trucks:	75.2	72.1	64.3	73.6	79.7	79.7
Vehicle Noise:	78.3	76.2	72.7	75.2	81.6	81.8

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	657	1,416	3,051	6,574
CNEL:	672	1,449	3,121	6,724

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 67,568 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,460 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.92	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.94	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.73	-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	Leq Night	Ldn	CNEL
Autos:	71.8	70.9	69.5	63.4	71.9	72.5
Medium Trucks:	67.4	64.4	56.6	65.8	72.0	72.0
Heavy Trucks:	73.3	70.3	62.5	71.7	77.8	77.9
Vehicle Noise:	76.3	74.1	70.4	73.2	79.6	79.8

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	483	1,040	2,242	4,830
CNEL:	493	1,063	2,290	4,934

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 64,611 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,221 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.73	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.14	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.92	-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	Leq Night	Ldn	CNEL	
Autos:	71.7	70.7	69.3	63.2	71.7	72.3	
Medium Trucks:	67.3	64.2	56.4	65.6	71.8	71.8	
Heavy Trucks:	73.1	70.1	62.3	71.5	77.6	77.7	
Vehicle Noise:	76.1	73.9	70.2	73.0	79.4	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			469	1,010	2,176	4,688	
CNEL:			479	1,032	2,223	4,789	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): ##### vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 8,876 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	6.03	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-8.83	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-6.62	-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	Leq Night	Ldn	CNEL	
Autos:	74.0	73.0	71.6	65.6	74.0	74.6	
Medium Trucks:	69.6	66.5	58.7	67.9	74.1	74.1	
Heavy Trucks:	75.4	72.4	64.6	73.8	79.9	80.0	
Vehicle Noise:	78.4	76.2	75.3	81.7	81.9	81.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			668	1,439	3,099	6,678	
CNEL:			682	1,470	3,166	6,821	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 79,202 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,400 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.61	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.25	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.04	-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	Leq Night	Ldn	CNEL	
Autos:	72.5	71.6	70.2	64.1	72.6	73.2	
Medium Trucks:	68.1	65.1	57.3	66.5	72.7	72.7	
Heavy Trucks:	74.0	70.9	63.2	72.4	78.5	78.6	
Vehicle Noise:	76.9	74.8	71.1	73.9	80.3	80.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			537	1,157	2,492	5,369	
CNEL:			548	1,182	2,546	5,485	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Via Mira Mosa/Auld Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 89,988 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 7,271 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	5.17	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-9.70	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.48	-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	Leq Night	Ldn	CNEL	
Autos:	73.1	72.1	70.7	64.7	73.1	73.8	
Medium Trucks:	68.7	65.6	57.9	67.1	73.2	73.3	
Heavy Trucks:	74.6	71.5	63.7	72.9	79.1	79.1	
Vehicle Noise:	77.5	75.3	71.7	74.4	80.9	81.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			585	1,260	2,714	5,846	
CNEL:			597	1,287	2,772	5,972	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 80,243 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,484 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.67	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.20	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.98	-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	Leq Night	Ldn	CNEL	
Autos:	72.6	71.6	70.2	64.2	72.6	73.3	
Medium Trucks:	68.2	65.1	57.4	66.6	72.7	72.8	
Heavy Trucks:	74.1	71.0	63.2	72.4	78.6	78.6	
Vehicle Noise:	77.0	74.8	71.2	73.9	80.4	80.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			542	1,167	2,514	5,416	
CNEL:			553	1,192	2,568	5,533	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Scott Rd. Road Segment: w/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 58,228 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,705 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.65	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.21	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.99	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.4	70.0	64.0	72.4	73.1	
Medium Trucks:	68.2	65.1	57.3	66.5	72.7	72.7	
Heavy Trucks:	74.4	71.3	63.5	72.7	78.9	78.9	
Vehicle Noise:	77.1	74.9	71.1	74.1	80.5	80.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			384	827	1,781	3,837	
CNEL:			391	843	1,817	3,915	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 82,813 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,691 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.81	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.06	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.84	-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	Leq Night	Ldn	CNEL	
Autos:	72.7	71.8	70.3	64.3	72.8	73.4	
Medium Trucks:	68.3	65.3	57.5	66.7	72.9	72.9	
Heavy Trucks:	74.2	71.1	63.4	72.6	78.7	78.8	
Vehicle Noise:	77.1	75.0	71.3	74.1	80.5	80.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			553	1,192	2,567	5,531	
CNEL:			565	1,217	2,623	5,650	

Wednesday, July 7, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Scott Rd. Road Segment: e/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 69,430 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,610 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.42	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.45	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.23	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.2	70.8	64.7	73.2	73.8	
Medium Trucks:	68.9	65.9	58.1	67.3	73.4	73.5	
Heavy Trucks:	75.1	72.1	64.3	73.5	79.7	79.7	
Vehicle Noise:	77.9	75.6	71.8	74.9	81.3	81.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			431	930	2,003	4,315	
CNEL:			440	948	2,043	4,402	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Scott Rd. Road Segment: w/o Leon Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 60,010 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,849 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.79	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.08	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.86	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	71.5	70.1	64.1	72.6	73.2	
Medium Trucks:	68.3	65.2	57.4	66.7	72.8	72.8	
Heavy Trucks:	74.5	71.4	63.7	72.9	79.0	79.1	
Vehicle Noise:	77.2	75.0	71.2	74.2	80.7	80.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			392	844	1,817	3,915	
CNEL:			399	861	1,854	3,994	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Clinton Keith Rd. Road Segment: w/o Whitewood Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 69,449 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,611 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.83	-0.69	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-10.03	-0.67	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-7.81	-0.67	-1.20	-5.29	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.2	70.8	64.7	73.2	73.8	
Medium Trucks:	69.1	66.0	58.3	67.5	73.6	73.7	
Heavy Trucks:	75.7	72.6	64.9	74.1	80.2	80.3	
Vehicle Noise:	78.2	75.9	71.9	75.3	81.7	81.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			406	875	1,884	4,059	
CNEL:			414	891	1,920	4,136	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Keller Rd. Road Segment: e/o Leon Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 4,949 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 400 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 46.915 Medium Trucks: 46.726 Heavy Trucks: 46.744			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.39	0.31	-1.20	-4.65	0.000	0.000
Medium Trucks:	81.00	-23.63	0.34	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-27.58	0.34	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.9	61.8	60.5	54.5	62.9	63.6	
Medium Trucks:	56.5	53.5	46.0	54.8	61.0	61.0	
Heavy Trucks:	56.9	53.8	50.4	55.1	61.3	61.4	
Vehicle Noise:	64.6	63.0	61.1	59.6	66.6	66.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			30	64	137	296	
CNEL:			31	67	144	311	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY 2040 Road Name: Clinton Keith Rd. Road Segment: e/o Whitewood Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 58,915 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,760 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.71	-0.69	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-11.16	-0.67	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.94	-0.67	-1.20	-5.29	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.6	72.6	71.2	65.2	73.7	74.3	
Medium Trucks:	69.4	66.3	58.5	67.7	73.9	73.9	
Heavy Trucks:	75.6	72.5	64.7	74.0	80.1	80.1	
Vehicle Noise:	78.3	76.1	72.3	75.3	81.8	81.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			408	879	1,894	4,080	
CNEL:			416	897	1,932	4,162	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Menifee Rd. Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 29,597 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,391 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 58 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 57.271 Medium Trucks: 57.117 Heavy Trucks: 57.132			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.38	-0.99	-1.20	-4.70	0.000	0.000
Medium Trucks:	81.00	-15.86	-0.97	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.82	-0.97	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	67.0	61.0	69.4	70.0
Medium Trucks:	63.0	60.0	52.5	61.2	67.4	67.5
Heavy Trucks:	63.4	60.3	56.9	61.5	67.7	67.8
Vehicle Noise:	71.1	69.5	67.5	66.0	73.0	73.4

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	474	1,021
CNEL:	107	231	498	1,072

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Whitewood Rd. Road Segment: s/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 28,417 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,296 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.41	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-13.46	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.24	0.82	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.5	67.1	61.1	69.5	70.1
Medium Trucks:	65.6	62.6	54.8	64.0	70.1	70.2
Heavy Trucks:	72.6	69.6	61.8	71.0	77.2	77.2
Vehicle Noise:	74.9	72.5	68.4	72.1	78.5	78.6

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	399	860	1,852
CNEL:	188	406	875	1,884

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Whitewood Rd. Road Segment: n/o Clinton Keith Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 42,374 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,424 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 50 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 43.589 Medium Trucks: 43.386 Heavy Trucks: 43.405			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.15	0.79	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-11.72	0.82	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.50	0.82	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.8	62.8	71.3	71.9
Medium Trucks:	67.3	64.3	56.5	65.7	71.9	71.9
Heavy Trucks:	74.4	71.3	63.5	72.7	78.9	78.9
Vehicle Noise:	76.6	74.3	70.1	73.9	80.3	80.4

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	521	1,122	2,417
CNEL:	246	530	1,141	2,459

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Leon Rd. Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 23,919 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,933 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.04	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	82.40	-17.20	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.16	-0.60	-1.20	-5.35	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.6	61.6	70.0	70.6
Medium Trucks:	63.4	60.4	52.9	61.7	67.9	67.9
Heavy Trucks:	63.4	60.3	56.9	61.6	67.8	67.9
Vehicle Noise:	71.6	70.0	68.1	66.4	73.4	73.8

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	105	227	489	1,053

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Leon Rd. Road Segment: s/o Keller Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 19,668 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 1,589 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.65	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-15.51	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-13.29	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.8	65.4	59.3	67.8	68.4	
Medium Trucks:	63.7	60.6	52.9	62.1	68.2	68.2	
Heavy Trucks:	70.3	67.2	59.4	68.7	74.8	74.8	
Vehicle Noise:	72.8	70.5	66.5	69.9	76.3	76.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			156	336	723	1,558	
CNEL:			159	342	737	1,587	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Leon Rd. Road Segment: s/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 27,505 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,222 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.81	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.06	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-11.84	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.8	60.8	69.3	69.9	
Medium Trucks:	65.1	62.1	54.3	63.5	69.7	69.7	
Heavy Trucks:	71.7	68.7	60.9	70.1	76.3	76.3	
Vehicle Noise:	74.2	71.9	68.0	71.4	77.8	77.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			195	420	904	1,948	
CNEL:			199	428	921	1,985	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Leon Rd. Road Segment: n/o Jean Nicholas Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 26,511 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 2,142 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.65	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	81.00	-14.22	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-12.00	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.1	66.7	60.6	69.1	69.7	
Medium Trucks:	65.0	61.9	54.1	63.4	69.5	69.5	
Heavy Trucks:	71.6	68.5	60.7	70.0	76.1	76.1	
Vehicle Noise:	74.1	71.8	67.8	71.2	77.6	77.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			190	410	882	1,901	
CNEL:			194	417	899	1,937	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 39,306 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 3,176 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 59.0 feet Centerline Dist. to Observer: 59.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 54.129 Medium Trucks: 53.966 Heavy Trucks: 53.982			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.82	-0.62	-1.20	-4.69	0.000	0.000
Medium Trucks:	79.45	-12.05	-0.60	-1.20	-4.88	0.000	0.000
Heavy Trucks:	84.25	-9.83	-0.60	-1.20	-5.35	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	67.1	61.1	69.5	70.1	
Medium Trucks:	65.6	62.5	54.8	64.0	70.1	70.2	
Heavy Trucks:	72.6	69.6	61.8	71.0	77.1	77.2	
Vehicle Noise:	74.9	72.5	68.4	72.1	78.5	78.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			218	470	1,013	2,182	
CNEL:			222	478	1,030	2,220	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Domenigoni Pkwy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 65,274 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,274 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	3.42	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-11.44	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-9.22	-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	Leq Night	Ldn	CNEL	
Autos:	72.7	71.7	70.3	64.3	72.7	73.4	
Medium Trucks:	68.1	65.1	57.3	66.5	72.7	72.7	
Heavy Trucks:	73.7	70.6	62.8	72.0	78.2	78.2	
Vehicle Noise:	76.8	74.7	71.2	73.6	80.1	80.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			521	1,123	2,419	5,212	
CNEL:			533	1,148	2,474	5,331	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 63,288 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,114 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.64	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.23	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-9.01	-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	Leq Night	Ldn	CNEL	
Autos:	71.6	70.6	69.2	63.2	71.6	72.2	
Medium Trucks:	67.2	64.1	56.3	65.5	71.7	71.7	
Heavy Trucks:	73.0	70.0	62.2	71.4	77.6	77.6	
Vehicle Noise:	76.0	73.8	70.2	72.9	79.4	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			462	996	2,146	4,623	
CNEL:			472	1,018	2,192	4,723	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Scott Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 93,288 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 7,538 vehicles Vehicle Speed: 65 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	74.55	4.98	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	84.86	-9.89	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	88.18	-7.67	-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	Leq Night	Ldn	CNEL	
Autos:	74.2	73.2	71.8	65.8	74.3	74.9	
Medium Trucks:	69.7	66.6	58.8	68.1	74.2	74.2	
Heavy Trucks:	75.2	72.2	64.4	73.6	79.7	79.8	
Vehicle Noise:	78.4	76.3	72.7	75.2	81.7	81.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			661	1,425	3,069	6,613	
CNEL:			676	1,457	3,139	6,764	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 69,622 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,625 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.05	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.81	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.60	-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	Leq Night	Ldn	CNEL	
Autos:	72.0	71.0	69.6	63.6	72.0	72.7	
Medium Trucks:	67.6	64.5	56.7	66.0	72.1	72.1	
Heavy Trucks:	73.4	70.4	62.6	71.8	78.0	78.0	
Vehicle Noise:	76.4	74.2	70.6	73.3	79.8	79.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			493	1,061	2,287	4,927	
CNEL:			503	1,084	2,336	5,033	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Whisper Heights Pkwy./Pourroy Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 66,255 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,353 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.84	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-11.03	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-8.81	-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	Leq Night	Ldn	CNEL	
Autos:	71.8	70.8	69.4	63.4	71.8	72.4	
Medium Trucks:	67.4	64.3	56.5	65.7	71.9	71.9	
Heavy Trucks:	73.2	70.2	62.4	71.6	77.7	77.8	
Vehicle Noise:	76.2	74.0	70.4	73.1	79.6	79.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			477	1,027	2,213	4,767	
CNEL:			487	1,049	2,260	4,869	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): ##### vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 8,973 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	6.08	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-8.79	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-6.57	-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	Leq Night	Ldn	CNEL	
Autos:	74.0	73.0	71.6	65.6	74.1	74.7	
Medium Trucks:	69.6	66.6	58.8	68.0	74.1	74.2	
Heavy Trucks:	75.5	72.4	64.6	73.8	80.0	80.0	
Vehicle Noise:	78.4	76.2	75.3	81.8	81.9	81.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			673	1,449	3,122	6,726	
CNEL:			687	1,480	3,189	6,871	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Thompson Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 80,624 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,514 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.69	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.18	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.96	-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	Leq Night	Ldn	CNEL	
Autos:	72.6	71.6	70.2	64.2	72.7	73.3	
Medium Trucks:	68.2	65.2	57.4	66.6	72.7	72.8	
Heavy Trucks:	74.1	71.0	63.2	72.4	78.6	78.6	
Vehicle Noise:	77.0	74.8	71.2	73.9	80.4	80.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			543	1,171	2,522	5,433	
CNEL:			555	1,196	2,576	5,550	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o Via Mira Mosa/Auld Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 91,020 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 7,354 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	5.22	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-9.65	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.43	-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	Leq Night	Ldn	CNEL	
Autos:	73.1	72.2	70.8	64.7	73.2	73.8	
Medium Trucks:	68.7	65.7	57.9	67.1	73.3	73.3	
Heavy Trucks:	74.6	71.5	63.8	73.0	79.1	79.2	
Vehicle Noise:	77.6	75.4	71.7	74.5	80.9	81.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			589	1,269	2,734	5,891	
CNEL:			602	1,296	2,793	6,018	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: n/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 80,961 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,542 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.71	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.16	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.94	-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	Leq Night	Ldn	CNEL	
Autos:	72.6	71.7	70.2	64.2	72.7	73.3	
Medium Trucks:	68.2	65.2	57.4	66.6	72.8	72.8	
Heavy Trucks:	74.1	71.0	63.3	72.5	78.6	78.7	
Vehicle Noise:	77.0	74.9	71.2	74.0	80.4	80.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			545	1,174	2,529	5,448	
CNEL:			557	1,199	2,583	5,566	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Scott Rd. Road Segment: w/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,362 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,796 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.74	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-11.13	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.91	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	71.5	70.1	64.1	72.5	73.1	
Medium Trucks:	68.2	65.2	57.4	66.6	72.8	72.8	
Heavy Trucks:	74.4	71.4	63.6	72.8	79.0	79.0	
Vehicle Noise:	77.2	74.9	71.2	74.2	80.6	80.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			389	837	1,804	3,887	
CNEL:			397	854	1,841	3,966	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Winchester Rd. (SR-79) Road Segment: s/o La Alba Dr./Sparkman Wy.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 83,311 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 6,732 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 120 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 92.331 Medium Trucks: 92.235 Heavy Trucks: 92.244				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	4.83	-4.10	-1.20	-4.78	0.000	0.000
Medium Trucks:	83.68	-10.03	-4.09	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-7.82	-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	Leq Night	Ldn	CNEL	
Autos:	72.8	71.8	70.4	64.3	72.8	73.4	
Medium Trucks:	68.4	65.3	57.5	66.7	72.9	72.9	
Heavy Trucks:	74.2	71.2	63.4	72.6	78.7	78.8	
Vehicle Noise:	77.2	75.0	71.3	74.1	80.5	80.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			555	1,196	2,578	5,553	
CNEL:			567	1,222	2,633	5,673	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL							
Scenario: HY+P 2040 Road Name: Scott Rd. Road Segment: e/o Menifee Rd.				Project Name: Keller Crossing Job Number: 13649			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
<b>Highway Data</b>			<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 71,098 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,745 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>			<b>Vehicle Mix</b>				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			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%				
			<b>Noise Source Elevations (in feet)</b>				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
			<b>Lane Equivalent Distance (in feet)</b>				
			Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	-1.85	-1.20	-4.73	0.000	0.000
Medium Trucks:	82.40	-10.35	-1.84	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-8.13	-1.84	-1.20	-5.25	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.3	70.9	64.8	73.3	73.9	
Medium Trucks:	69.0	66.0	58.2	67.4	73.5	73.6	
Heavy Trucks:	75.2	72.2	64.4	73.6	79.8	79.8	
Vehicle Noise:	78.0	75.7	71.9	75.0	81.4	81.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			438	944	2,035	4,384	
CNEL:			447	964	2,076	4,472	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: HY+P 2040 Road Name: Scott Rd. Road Segment: w/o Leon Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 61,950 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,006 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 76.0 feet Centerline Dist. to Observer: 76.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 65.422 Medium Trucks: 65.286 Heavy Trucks: 65.300					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	3.92	-1.85	-1.20	-4.73	0.000	0.000		
Medium Trucks:	82.40	-10.94	-1.84	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-8.72	-1.84	-1.20	-5.25	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	72.6	71.7	70.3	64.2	72.7	73.3			
Medium Trucks:	68.4	65.4	57.6	66.8	72.9	73.0			
Heavy Trucks:	74.6	71.6	63.8	73.0	79.2	79.2			
Vehicle Noise:	77.4	75.1	71.3	74.4	80.8	80.9			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			400	862	1,856	3,999			
CNEL:			408	879	1,894	4,080			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: HY+P 2040 Road Name: Clinton Keith Rd. Road Segment: w/o Whitewood Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 70,269 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 5,678 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	70.20	4.88	-0.69	-1.20	-4.71	0.000	0.000		
Medium Trucks:	81.00	-9.98	-0.67	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	85.38	-7.76	-0.67	-1.20	-5.29	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	73.2	72.2	70.8	64.8	73.3	73.9			
Medium Trucks:	69.1	66.1	58.3	67.5	73.7	73.7			
Heavy Trucks:	75.7	72.7	64.9	74.1	80.3	80.3			
Vehicle Noise:	78.2	75.9	72.0	75.4	81.8	81.9			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			409	881	1,899	4,091			
CNEL:			417	898	1,935	4,168			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: HY+P 2040 Road Name: Keller Rd. Road Segment: e/o Leon Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 8,061 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 651 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 36 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 46.915 Medium Trucks: 46.726 Heavy Trucks: 46.744					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	70.20	-4.27	0.31	-1.20	-4.65	0.000	0.000		
Medium Trucks:	81.00	-21.51	0.34	-1.20	-4.87	0.000	0.000		
Heavy Trucks:	85.38	-25.46	0.34	-1.20	-5.43	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	65.0	64.0	62.6	56.6	65.1	65.7			
Medium Trucks:	58.6	55.7	48.2	56.9	63.1	63.1			
Heavy Trucks:	59.0	55.9	52.5	57.2	63.4	63.5			
Vehicle Noise:	66.7	65.1	63.2	61.7	68.7	69.0			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			41	88	190	410			
CNEL:			43	93	200	430			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL									
Scenario: HY+P 2040 Road Name: Clinton Keith Rd. Road Segment: e/o Whitewood Rd.					Project Name: Keller Crossing Job Number: 13649				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>					
Average Daily Traffic (Adt): 60,043 vehicles Peak Hour Percentage: 8.08% Peak Hour Volume: 4,851 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
<b>Site Data</b>				<b>Vehicle Mix</b>					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 67.0 feet Centerline Dist. to Observer: 67.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				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%					
				<b>Noise Source Elevations (in feet)</b>					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0					
				<b>Lane Equivalent Distance (in feet)</b>					
				Autos: 54.708 Medium Trucks: 54.546 Heavy Trucks: 54.562					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	71.78	3.79	-0.69	-1.20	-4.71	0.000	0.000		
Medium Trucks:	82.40	-11.08	-0.67	-1.20	-4.88	0.000	0.000		
Heavy Trucks:	86.40	-8.86	-0.67	-1.20	-5.29	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	73.7	72.7	71.3	65.3	73.7	74.4			
Medium Trucks:	69.5	66.4	58.6	67.8	74.0	74.0			
Heavy Trucks:	75.7	72.6	64.8	74.0	80.2	80.2			
Vehicle Noise:	78.4	76.2	72.4	75.4	81.9	82.0			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			413	890	1,918	4,132			
CNEL:			422	908	1,957	4,215			

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**APPENDIX 8.1:**  
**ON-SITE TRAFFIC NOISE LEVEL CALCULATIONS**

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013									
Scenario: Backyard With Wall Road Name: Keller Rd. Lot No: PA 1			Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson						
<b>SITE SPECIFIC INPUT DATA</b>					<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>					<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,070 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet					Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10				
<b>Site Data</b>					<b>Vehicle Mix</b>				
Barrier Height: 6.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 69.0 feet Centerline Dist. to Observer: 79.0 feet Barrier Distance to Observer: 10.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%					Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%				
<b>FHWA Noise Model Calculations</b>					<b>Noise Source Elevations (in feet)</b>				
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten					Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Autos: 67.36 1.72 -1.94 0.00 0.15 -6.400 -9.400					Autos: 76.930 Medium Trucks: 76.764 Heavy Trucks: 76.691				
Medium Trucks: 76.31 -15.52 -1.93 0.00 0.10 -6.000 -9.000					<b>Lane Equivalent Distance (in feet)</b>				
Heavy Trucks: 81.16 -19.47 -1.93 0.00 0.02 -5.200 -8.200					Autos: 76.930 Medium Trucks: 76.764 Heavy Trucks: 76.691				
<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 67.1 65.1 63.8 57.8 66.2 66.9									
Medium Trucks: 58.9 55.0 47.5 56.2 62.4 62.4									
Heavy Trucks: 59.8 55.7 52.3 57.0 63.2 63.3									
Vehicle Noise: 68.4 66.0 64.2 61.8 69.0 69.4									
<b>Mitigated Noise Levels (with Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 60.7 58.7 57.4 51.4 59.8 60.5									
Medium Trucks: 52.9 49.0 41.5 50.2 56.4 56.4									
Heavy Trucks: 54.6 50.5 47.1 51.8 58.0 58.1									
Vehicle Noise: 62.2 59.7 57.9 55.9 63.1 63.4									
<b>Centerline Distance to Noise Contour (in feet)</b>					70 dBA 65 dBA 60 dBA 55 dBA				
CNEL:					69 218 688 2,176				

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013									
Scenario: Backyard With Wall Road Name: Keller Rd. Lot No: PA 4			Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson						
<b>SITE SPECIFIC INPUT DATA</b>					<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>					<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,070 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet					Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10				
<b>Site Data</b>					<b>Vehicle Mix</b>				
Barrier Height: 6.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 86.0 feet Centerline Dist. to Observer: 96.0 feet Barrier Distance to Observer: 10.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%					Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%				
<b>FHWA Noise Model Calculations</b>					<b>Noise Source Elevations (in feet)</b>				
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten					Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Autos: 67.36 1.72 -2.83 0.00 0.13 -6.240 -9.240					Autos: 94.359 Medium Trucks: 94.227 Heavy Trucks: 94.169				
Medium Trucks: 76.31 -15.52 -2.82 0.00 0.09 -5.900 -8.900					<b>Lane Equivalent Distance (in feet)</b>				
Heavy Trucks: 81.16 -19.47 -2.82 0.00 0.03 -5.300 -8.300					Autos: 94.359 Medium Trucks: 94.227 Heavy Trucks: 94.169				
<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 66.3 64.2 62.9 56.9 65.3 66.0									
Medium Trucks: 58.0 54.1 46.6 55.3 61.5 61.5									
Heavy Trucks: 58.9 54.8 51.4 56.1 62.3 62.4									
Vehicle Noise: 67.5 65.1 63.3 60.9 68.1 68.5									
<b>Mitigated Noise Levels (with Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 60.0 58.0 56.7 50.7 59.1 59.7									
Medium Trucks: 52.1 48.2 40.7 49.4 55.6 55.6									
Heavy Trucks: 53.6 49.5 46.1 50.8 57.0 57.1									
Vehicle Noise: 61.4 59.0 57.2 55.1 62.2 62.6									
<b>Centerline Distance to Noise Contour (in feet)</b>					70 dBA 65 dBA 60 dBA 55 dBA				
CNEL:					68 215 681 2,155				

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013									
Scenario: Backyard With Wall Road Name: Keller Rd. Lot No: PA 2			Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson						
<b>SITE SPECIFIC INPUT DATA</b>					<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>					<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 2,070 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet					Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10				
<b>Site Data</b>					<b>Vehicle Mix</b>				
Barrier Height: 6.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 87.0 feet Centerline Dist. to Observer: 97.0 feet Barrier Distance to Observer: 10.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%					Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%				
<b>FHWA Noise Model Calculations</b>					<b>Noise Source Elevations (in feet)</b>				
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten					Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Autos: 67.36 1.72 -2.87 0.00 0.12 -6.160 -9.160					Autos: 95.379 Medium Trucks: 95.248 Heavy Trucks: 95.191				
Medium Trucks: 76.31 -15.52 -2.87 0.00 0.09 -5.900 -8.900					<b>Lane Equivalent Distance (in feet)</b>				
Heavy Trucks: 81.16 -19.47 -2.87 0.00 0.03 -5.300 -8.300					Autos: 95.379 Medium Trucks: 95.248 Heavy Trucks: 95.191				
<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 66.2 64.2 62.9 56.9 65.3 65.9									
Medium Trucks: 57.9 54.0 46.5 55.3 61.5 61.5									
Heavy Trucks: 58.8 54.8 51.4 56.0 62.2 62.3									
Vehicle Noise: 67.4 65.0 63.3 60.9 68.1 68.5									
<b>Mitigated Noise Levels (with Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 60.0 58.0 56.7 50.7 59.1 59.8									
Medium Trucks: 52.0 48.1 40.6 49.4 55.6 55.6									
Heavy Trucks: 53.5 49.5 46.1 50.7 56.9 57.0									
Vehicle Noise: 61.4 59.0 57.2 55.1 62.2 62.6									
<b>Centerline Distance to Noise Contour (in feet)</b>					70 dBA 65 dBA 60 dBA 55 dBA				
CNEL:					68 215 681 2,154				

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013									
Scenario: Backyard With Wall Road Name: Winchester Pkwy. (SR-79) Lot No: PA 6			Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson						
<b>SITE SPECIFIC INPUT DATA</b>					<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>					<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,400 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 6,540 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 120 feet					Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10				
<b>Site Data</b>					<b>Vehicle Mix</b>				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 187.0 feet Centerline Dist. to Observer: 197.0 feet Barrier Distance to Observer: 10.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%					Autos: 75.5% 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%				
<b>FHWA Noise Model Calculations</b>					<b>Noise Source Elevations (in feet)</b>				
VehicleType REMEL Traffic Flow Distance Finite Road Fresnel Barrier Atten Berm Atten					Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Autos: 67.36 6.47 -5.81 0.00 -1.09 0.000 0.000					Autos: 187.707 Medium Trucks: 187.660 Heavy Trucks: 187.665				
Medium Trucks: 76.31 -8.40 -5.81 0.00 -1.15 0.000 0.000					<b>Lane Equivalent Distance (in feet)</b>				
Heavy Trucks: 81.16 -6.18 -5.81 0.00 -1.30 0.000 0.000					Autos: 187.707 Medium Trucks: 187.660 Heavy Trucks: 187.665				
<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 68.0 66.0 64.7 58.7 67.1 67.7									
Medium Trucks: 62.1 58.1 50.3 59.5 65.7 65.7									
Heavy Trucks: 69.2 65.2 57.4 66.6 72.8 72.8									
Vehicle Noise: 72.1 69.0 65.6 67.9 74.4 74.6									
<b>Mitigated Noise Levels (with Topo and barrier attenuation)</b>									
VehicleType Leq Peak Hour Leq Day Leq Evening Leq Night Ldn CNEL									
Autos: 68.0 66.0 64.7 58.7 67.1 67.7									
Medium Trucks: 62.1 58.1 50.3 59.5 65.7 65.7									
Heavy Trucks: 69.2 65.2 57.4 66.6 72.8 72.8									
Vehicle Noise: 72.1 69.0 65.6 67.9 74.4 74.6									
<b>Centerline Distance to Noise Contour (in feet)</b>					70 dBA 65 dBA 60 dBA 55 dBA				
CNEL:					566 1,790 5,661 17,901				

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013							
Scenario: Backyard With Wall Road Name: Winchester Pkwy. (SR-79) Lot No: PA 7				Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 65,400 vehicles Peak Hour Percentage: 10% Peak Hour Volume: 6,540 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 120 feet				Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 129.0 feet Centerline Dist. to Observer: 139.0 feet Barrier Distance to Observer: 10.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%				Autos: 75.5% 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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 125.483 Medium Trucks: 125.413 Heavy Trucks: 125.419			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	6.47	-4.07	0.00	-1.07	0.000	0.000
Medium Trucks:	76.31	-8.40	-4.06	0.00	-1.15	0.000	0.000
Heavy Trucks:	81.16	-6.18	-4.06	0.00	-1.37	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	67.8	66.5	60.4	68.8	69.5	
Medium Trucks:	63.9	59.9	52.1	61.3	67.5	67.5	
Heavy Trucks:	70.9	66.9	59.2	68.4	74.5	74.6	
Vehicle Noise:	73.8	70.7	67.3	69.7	76.2	76.3	
Mitigated Noise Levels (with Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	67.8	66.5	60.4	68.8	69.5	
Medium Trucks:	63.9	59.9	52.1	61.3	67.5	67.5	
Heavy Trucks:	70.9	66.9	59.2	68.4	74.5	74.6	
Vehicle Noise:	73.8	70.7	67.3	69.7	76.2	76.3	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
CNEL:	598	1,890	5,976	18,899			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013							
Scenario: First Floor With Wall Road Name: Keller Rd. Lot No: PA 2				Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 6.19% Peak Hour Volume: 1,281 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet				Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 6.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 87.0 feet Centerline Dist. to Observer: 107.0 feet Barrier Distance to Observer: 20.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 105.354 Medium Trucks: 105.223 Heavy Trucks: 105.166			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.36	-3.31	0.00	0.11	-6.080	-9.080
Medium Trucks:	76.31	-17.60	-3.30	0.00	0.07	-5.700	-8.700
Heavy Trucks:	81.16	-21.56	-3.30	0.00	0.01	-5.100	-8.100
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	63.8	62.5	56.4	64.9	65.5	
Medium Trucks:	55.4	53.6	46.1	54.8	61.0	61.1	
Heavy Trucks:	56.3	54.3	50.9	55.6	61.8	61.9	
Vehicle Noise:	64.9	64.6	62.8	60.4	67.7	68.0	
Mitigated Noise Levels (with Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.6	57.7	56.4	50.4	58.8	59.4	
Medium Trucks:	49.7	47.9	40.4	49.1	55.3	55.4	
Heavy Trucks:	51.2	49.2	45.8	50.5	56.7	56.8	
Vehicle Noise:	59.0	58.6	56.8	54.8	61.9	62.3	

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013							
Scenario: First Floor With Wall Road Name: Keller Rd. Lot No: PA 1				Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 6.19% Peak Hour Volume: 1,281 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet				Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 6.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 69.0 feet Centerline Dist. to Observer: 89.0 feet Barrier Distance to Observer: 20.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 86.905 Medium Trucks: 86.739 Heavy Trucks: 86.666			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.36	-2.47	0.00	0.14	-6.320	-9.320
Medium Trucks:	76.31	-17.60	-2.46	0.00	0.08	-5.800	-8.800
Heavy Trucks:	81.16	-21.56	-2.46	0.00	0.00	-4.900	-7.900
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	64.6	63.3	57.3	65.7	66.3	
Medium Trucks:	56.3	54.4	46.9	55.7	61.9	61.9	
Heavy Trucks:	57.1	55.2	51.8	56.4	62.6	62.7	
Vehicle Noise:	65.8	65.4	63.7	61.3	68.5	68.9	
Mitigated Noise Levels (with Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.2	58.3	57.0	51.0	59.4	60.0	
Medium Trucks:	50.5	48.6	41.1	49.9	56.1	56.1	
Heavy Trucks:	52.2	50.3	46.9	51.5	57.7	57.8	
Vehicle Noise:	59.7	59.3	57.5	55.6	62.7	63.0	

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013							
Scenario: First Floor With Wall Road Name: Keller Rd. Lot No: PA 4				Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 6.19% Peak Hour Volume: 1,281 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet				Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 6.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 86.0 feet Centerline Dist. to Observer: 106.0 feet Barrier Distance to Observer: 20.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 104.334 Medium Trucks: 104.202 Heavy Trucks: 104.144			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.36	-3.26	0.00	0.11	-6.080	-9.080
Medium Trucks:	76.31	-17.60	-3.26	0.00	0.07	-5.700	-8.700
Heavy Trucks:	81.16	-21.56	-3.26	0.00	0.01	-5.100	-8.100
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	63.8	62.5	56.5	64.9	65.5	
Medium Trucks:	55.5	53.6	46.1	54.9	61.1	61.1	
Heavy Trucks:	56.3	54.4	51.0	55.6	61.8	61.9	
Vehicle Noise:	65.0	64.6	62.9	60.5	67.7	68.1	
Mitigated Noise Levels (with Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.7	57.7	56.4	50.4	58.8	59.4	
Medium Trucks:	49.8	47.9	40.4	49.2	55.4	55.4	
Heavy Trucks:	51.2	49.3	45.9	50.5	56.7	56.8	
Vehicle Noise:	59.1	58.7	56.9	54.9	62.0	62.3	

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013
Scenario: First Floor With Wall
Project Name: Keller Crossing
Road Name: Winchester Pkwy. (SR-79)
Job Number: 13649
Lot No: PA 6
Analyst: B. Lawson
SITE SPECIFIC INPUT DATA
NOISE MODEL INPUTS
Highway Data
Site Data
FHWA Noise Model Calculations

Unmitigated Noise Levels (without Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Mitigated Noise Levels (with Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013
Scenario: Second Floor With Wall
Project Name: Keller Crossing
Road Name: Keller Rd.
Job Number: 13649
Lot No: PA 1
Analyst: B. Lawson
SITE SPECIFIC INPUT DATA
NOISE MODEL INPUTS
Highway Data
Site Data
FHWA Noise Model Calculations

Unmitigated Noise Levels (without Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Mitigated Noise Levels (with Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013
Scenario: First Floor With Wall
Project Name: Keller Crossing
Road Name: Winchester Pkwy. (SR-79)
Job Number: 13649
Lot No: PA 7
Analyst: B. Lawson
SITE SPECIFIC INPUT DATA
NOISE MODEL INPUTS
Highway Data
Site Data
FHWA Noise Model Calculations

Unmitigated Noise Levels (without Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Mitigated Noise Levels (with Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013
Scenario: Second Floor With Wall
Project Name: Keller Crossing
Road Name: Keller Rd.
Job Number: 13649
Lot No: PA 2
Analyst: B. Lawson
SITE SPECIFIC INPUT DATA
NOISE MODEL INPUTS
Highway Data
Site Data
FHWA Noise Model Calculations

Unmitigated Noise Levels (without Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Mitigated Noise Levels (with Topo and barrier attenuation)
Table with columns: VehicleType, Leq Peak Hour, Leq Day, Leq Evening, Leq Night, Ldn, CNEL
Rows for Autos, Medium Trucks, Heavy Trucks, and Vehicle Noise.

Thursday, July 8, 2021



FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013							
Scenario: Second Floor With Wall Road Name: Keller Rd. Lot No: PA 4				Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 6.19% Peak Hour Volume: 1,281 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 36 feet				Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 6.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 86.0 feet Centerline Dist. to Observer: 106.0 feet Barrier Distance to Observer: 20.0 feet Observer Height (Above Pad): 14.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%				Autos: 75.5% 14.0% 10.5% 97.42% Medium Trucks: 48.9% 2.2% 48.9% 1.84% Heavy Trucks: 47.3% 5.4% 47.3% 0.74%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 105.394 Medium Trucks: 105.114 Heavy Trucks: 104.632			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	-0.36	-3.31	0.00	-0.81	0.000	0.000
Medium Trucks:	76.31	-17.60	-3.30	0.00	-0.96	0.000	0.000
Heavy Trucks:	81.16	-21.56	-3.28	0.00	-1.36	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	63.8	62.5	56.4	64.9	65.5	
Medium Trucks:	55.4	53.6	46.1	54.9	61.0	61.1	
Heavy Trucks:	56.3	54.4	51.0	55.6	61.8	61.9	
Vehicle Noise:	64.9	64.6	62.8	60.5	67.7	68.0	

Mitigated Noise Levels (with Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	63.8	62.5	56.4	64.9	65.5	
Medium Trucks:	55.4	53.6	46.1	54.9	61.0	61.1	
Heavy Trucks:	56.3	54.4	51.0	55.6	61.8	61.9	
Vehicle Noise:	64.9	64.6	62.8	60.5	67.7	68.0	

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013							
Scenario: Second Floor With Wall Road Name: Winchester Pkwy. (SR-79) Lot No: PA 7				Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 65,400 vehicles Peak Hour Percentage: 6.19% Peak Hour Volume: 4,048 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 120 feet				Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 129.0 feet Centerline Dist. to Observer: 149.0 feet Barrier Distance to Observer: 20.0 feet Observer Height (Above Pad): 14.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%				Autos: 75.5% 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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 137.102 Medium Trucks: 136.887 Heavy Trucks: 136.517			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	4.38	-4.45	0.00	-3.68	0.000	0.000
Medium Trucks:	76.31	-10.48	-4.44	0.00	-3.89	0.000	0.000
Heavy Trucks:	81.16	-8.26	-4.43	0.00	-4.44	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	67.4	66.1	60.0	68.5	69.1	
Medium Trucks:	61.4	59.5	51.7	60.9	67.1	67.1	
Heavy Trucks:	68.5	66.6	58.8	68.0	74.1	74.2	
Vehicle Noise:	71.4	70.4	66.9	69.3	75.8	76.0	

Mitigated Noise Levels (with Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	67.4	66.1	60.0	68.5	69.1	
Medium Trucks:	61.4	59.5	51.7	60.9	67.1	67.1	
Heavy Trucks:	68.5	66.6	58.8	68.0	74.1	74.2	
Vehicle Noise:	71.4	70.4	66.9	69.3	75.8	76.0	

Thursday, July 8, 2021

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO) - 6/2/2013							
Scenario: Second Floor With Wall Road Name: Winchester Pkwy. (SR-79) Lot No: PA 6				Project Name: Keller Crossing Job Number: 13649 Analyst: B. Lawson			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
<b>Highway Data</b>				<b>Site Conditions (Hard = 10, Soft = 15)</b>			
Average Daily Traffic (Adt): 65,400 vehicles Peak Hour Percentage: 6.19% Peak Hour Volume: 4,048 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 120 feet				Autos: 10 Medium Trucks (2 Axles): 10 Heavy Trucks (3+ Axles): 10			
<b>Site Data</b>				<b>Vehicle Mix</b>			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 187.0 feet Centerline Dist. to Observer: 207.0 feet Barrier Distance to Observer: 20.0 feet Observer Height (Above Pad): 14.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Barrier Elevation: 0.0 feet Road Grade: 0.0%				Autos: 75.5% 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%			
				<b>Noise Source Elevations (in feet)</b>			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.006 Grade Adjustment: 0.0			
				<b>Lane Equivalent Distance (in feet)</b>			
				Autos: 198.608 Medium Trucks: 198.459 Heavy Trucks: 198.204			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	67.36	4.38	-6.06	0.00	-3.86	0.000	0.000
Medium Trucks:	76.31	-10.48	-6.06	0.00	-4.01	0.000	0.000
Heavy Trucks:	81.16	-8.26	-6.05	0.00	-4.40	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	65.8	64.5	58.4	66.9	67.5	
Medium Trucks:	59.8	57.9	50.1	59.3	65.5	65.5	
Heavy Trucks:	66.8	64.9	57.2	66.4	72.5	72.6	
Vehicle Noise:	69.8	68.8	65.3	67.7	74.2	74.3	

Mitigated Noise Levels (with Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	65.8	64.5	58.4	66.9	67.5	
Medium Trucks:	59.8	57.9	50.1	59.3	65.5	65.5	
Heavy Trucks:	66.8	64.9	57.2	66.4	72.5	72.6	
Vehicle Noise:	69.8	68.8	65.3	67.7	74.2	74.3	

Thursday, July 8, 2021

**APPENDIX 10.1:**  
**CADNAA OPERATIONAL NOISE MODEL INPUTS**

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# 13649 - Keller Crossing

CadnaA Noise Prediction Model: 13649-04\_Exterior.cna

Date: 16.09.21

Analyst: B. Lawson

## Calculation Configuration

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

## Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height (ft)	Coordinates			
			Day (dBA)	Night (dBA)	CNEL (dBA)	Day (dBA)	Night (dBA)	CNEL (dBA)	Type	Auto	Noise Type		X (ft)	Y (ft)	Z (ft)	
RECEIVERS		R1	31.4	31.4	38.1	55.0	45.0	0.0				5.00	a	6303819.50	2176425.86	5.00
RECEIVERS		R2	41.0	41.0	47.7	55.0	45.0	0.0				5.00	a	6305827.32	2173771.05	5.00
RECEIVERS		R3	40.1	40.1	46.7	55.0	45.0	0.0				5.00	a	6303957.74	2172774.31	5.00
RECEIVERS		R4	34.1	34.1	40.8	55.0	45.0	0.0				5.00	a	6302806.70	2172800.35	5.00
RECEIVERS		R5	33.0	33.0	39.7	55.0	45.0	0.0				5.00	a	6302416.33	2173397.88	5.00

## Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li		Operating Time			Height (ft)	
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value dB(A)	norm.	Day (min)	Special (min)		Night (min)
AREASOURCE		OPERATIONAL	103.4	103.4	103.4	54.8	54.8	54.8	Lw	103.4					8

Name	Height		Coordinates			
	Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)
AREASOURCE	8.00	a	6305511.79	2174444.28	8.00	0.00
			6305750.96	2174302.68	8.00	0.00
			6305693.56	2174216.58	8.00	0.00
			6305659.12	2174147.70	8.00	0.00
			6305297.49	2173650.21	8.00	0.00
			6305062.14	2173321.11	8.00	0.00
			6304826.79	2172999.66	8.00	0.00

Name	Height		Coordinates			
	Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)
			6304776.00	2173035.22	8.00	0.00
			6304723.92	2173068.84	8.00	0.00
			6304670.61	2173100.49	8.00	0.00
			6304616.14	2173130.11	8.00	0.00
			6304560.61	2173157.67	8.00	0.00
			6304504.07	2173183.12	8.00	0.00
			6304446.62	2173206.42	8.00	0.00
			6304388.34	2173227.56	8.00	0.00
			6304329.30	2173246.48	8.00	0.00
			6304335.41	2173278.73	8.00	0.00
			6304343.67	2173310.50	8.00	0.00
			6304354.05	2173341.64	8.00	0.00
			6304366.50	2173372.01	8.00	0.00
			6304380.96	2173401.47	8.00	0.00
			6304813.39	2174076.90	8.00	0.00
			6304826.28	2174077.50	8.00	0.00
			6304838.90	2174080.17	8.00	0.00
			6304850.92	2174084.85	8.00	0.00
			6304862.03	2174091.41	8.00	0.00
			6304871.93	2174099.67	8.00	0.00
			6304880.36	2174109.43	8.00	0.00
			6305125.28	2173952.53	8.00	0.00
			6305133.94	2173947.60	8.00	0.00
			6305143.26	2173944.09	8.00	0.00
			6305153.02	2173942.10	8.00	0.00
			6305162.98	2173941.66	8.00	0.00
			6305172.88	2173942.80	8.00	0.00
			6305182.47	2173945.47	8.00	0.00
			6305191.53	2173949.63	8.00	0.00
			6305199.82	2173955.16	8.00	0.00
			6305207.14	2173961.92	8.00	0.00
			6305213.30	2173969.75	8.00	0.00

**APPENDIX 11.1:**

**CADNAA CONSTRUCTION NOISE MODEL INPUTS**

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# 13649 - Keller Crossing

CadnaA Noise Prediction Model: 13649-04\_Construction.cna

Date: 16.09.21

Analyst: B. Lawson

## Calculation Configuration

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

## Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height	Coordinates			
			Day	Night	CNEL	Day	Night	CNEL	Type	Auto	Noise Type		X	Y	Z	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)	(ft)	(ft)	(ft)	
RECEIVERS	R1		69.8	69.8	76.4	55.0	45.0	0.0				5.00	a	6303819.50	2176425.86	5.00
RECEIVERS	R2		73.0	73.0	79.7	55.0	45.0	0.0				5.00	a	6305827.32	2173771.05	5.00
RECEIVERS	R3		74.5	74.5	81.2	55.0	45.0	0.0				5.00	a	6303957.74	2172774.31	5.00
RECEIVERS	R4		73.9	73.9	80.6	55.0	45.0	0.0				5.00	a	6302806.70	2172800.35	5.00
RECEIVERS	R5		74.4	74.4	81.1	55.0	45.0	0.0				5.00	a	6302416.33	2173397.88	5.00

## Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li		Operating Time			Height
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Special	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)		dB(A)	(min)	(min)	(min)	(ft)
SITEBNDRY		SITEBNDRY00001	137.9	137.9	137.9	79.0	79.0	79.0	Lw''	79				8

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
SITEBNDRY	8.00	a	6302561.81	2172944.92	8.00	0.00
			6302560.65	2172944.92	8.00	0.00
			6302558.85	2173236.78	8.00	0.00
			6302558.85	2173237.04	8.00	0.00
			6302557.12	2173516.58	8.00	0.00
			6302557.12	2173516.84	8.00	0.00
			6302555.54	2173773.05	8.00	0.00

Name	Height		Coordinates			
	Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)
			6302553.17	2174156.26	8.00	0.00
			6302553.17	2174156.52	8.00	0.00
			6302548.89	2174851.05	8.00	0.00
			6302548.89	2174851.31	8.00	0.00
			6302546.00	2175319.97	8.00	0.00
			6302545.99	2175320.23	8.00	0.00
			6302545.99	2175320.27	8.00	0.00
			6302544.61	2175545.03	8.00	0.00
			6302544.60	2175546.10	8.00	0.00
			6302574.60	2175546.07	8.00	0.00
			6302751.60	2175545.87	8.00	0.00
			6302957.60	2175545.64	8.00	0.00
			6303360.86	2175545.20	8.00	0.00
			6303379.64	2175545.18	8.00	0.00
			6303798.95	2175544.72	8.00	0.00
			6303912.99	2175544.59	8.00	0.00
			6304232.49	2175544.24	8.00	0.00
			6304262.49	2175544.21	8.00	0.00
			6304292.49	2175544.17	8.00	0.00
			6304381.69	2175544.07	8.00	0.00
			6305055.89	2175543.33	8.00	0.00
			6305216.93	2175543.15	8.00	0.00
			6305632.66	2175542.69	8.00	0.00
			6306672.49	2175541.55	8.00	0.00
			6306673.61	2175541.55	8.00	0.00
			6306672.76	2175540.38	8.00	0.00
			6306602.71	2175444.17	8.00	0.00
			6306485.34	2175282.98	8.00	0.00
			6306326.51	2175064.85	8.00	0.00
			6306267.73	2174984.11	8.00	0.00
			6306266.23	2174982.06	8.00	0.00
			6305716.25	2174226.72	8.00	0.00
			6305676.91	2174138.49	8.00	0.00
			6305667.28	2174116.88	8.00	0.00
			6305664.66	2174110.47	8.00	0.00
			6305664.35	2174109.70	8.00	0.00
			6305664.31	2174109.61	8.00	0.00
			6305661.93	2174104.10	8.00	0.00
			6305656.27	2174091.39	8.00	0.00
			6305650.41	2174083.35	8.00	0.00
			6304845.17	2172977.45	8.00	0.00
			6304812.09	2172979.52	8.00	0.00
			6304787.61	2172945.90	8.00	0.00
			6304786.73	2172944.69	8.00	0.00
			6304642.10	2172944.71	8.00	0.00
			6303948.10	2172944.78	8.00	0.00
			6302615.23	2172944.91	8.00	0.00