# Appendix J

## Noise Impact Analysis

# Hesperia Commerce Center II

## Noise Impact Analysis

### City of Hesperia

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# LIST OF ABBREVIATED TERMS

| | |
|---|---|
| (1) | Reference |
| ADT | Average Daily Traffic |
| ANSI | American National Standards Institute |
| Calveno | California Vehicle Noise |
| CEQA | California Environmental Quality Act |
| CNEL | Community Noise Equivalent Level |
| dBA | A-weighted decibels |
| EPA | Environmental Protection Agency |
| FHWA | Federal Highway Administration |
| FTA | Federal Transit Administration |
| Hz | Hertz |
| INCE | Institute of Noise Control Engineering |
| $L_{eq}$ | Equivalent continuous (average) sound level |
| $L_{max}$ | Maximum level measured over the time interval |
| $L_{min}$ | Minimum level measured over the time interval |
| mph | Miles per hour |
| OPR | Office of Planning and Research |
| PPV | Peak particle velocity |
| Project | Hesperia Commerce Center II |
| REMEL | Reference Energy Mean Emission Level |
| RMS | Root-mean-square |
| VdB | Vibration Decibels |

# EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for the proposed Hesperia Commerce Center II development ("Project"). The Project is proposed to consist of 2,361,648 square feet of High-Cube Fulfillment Center use and 1,383,781 square feet of General Light Industrial use. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown, and therefore, this noise study includes a conservative analysis of the proposed Project uses. This study has been prepared to satisfy applicable City of Hesperia standards and thresholds of significance based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

The results of this Hesperia Commerce Center II Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise 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 |
| Off-Site Traffic Noise | 7 | *Potentially Significant* | *Significant and Unavoidable* |
| Operational Noise | 9 | *Less Than Significant* | - |
| Operational Vibration | | *Less Than Significant* | - |
| Construction Noise | 10 | *Less Than Significant* | - |
| Construction Vibration | | *Less Than Significant* | - |

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# 1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Hesperia Commerce Center II ("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 north of Phelan Road and west of US Highway 395 in the City of Hesperia. The Project location is shown on Exhibit 1-A. The Project Site is generally located in an undeveloped rural area with some residential homes located to the west and south.

## 1.2 PROJECT DESCRIPTION

The proposed Project consists of the following uses:

- 2,361,648 square feet of High-Cube Fulfillment Center use (65% of the total square footage of Building 1 and Building 2)
- 1,383,781 square feet of General Light Industrial use; 1,271,656 square feet within Building 1 and Building 2 (35% of the total square footage of Building 1 and Building 2) and 112,125 square feet within Building 3

The Project is anticipated to be developed within a single phase with an anticipated opening year of 2021. Regional access to the Project site is available from the I-15 Freeway at the Main Street interchange. At the time this noise analysis was prepared, the future tenants of the proposed Project were unknown.

The on-site Project-related noise sources are expected to include: loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity. This noise analysis is intended to describe noise level impacts associated with the expected typical operational activities at the Project site. To present a conservative approach, this report assumes the Project will operate 24-hours daily for seven days per week.

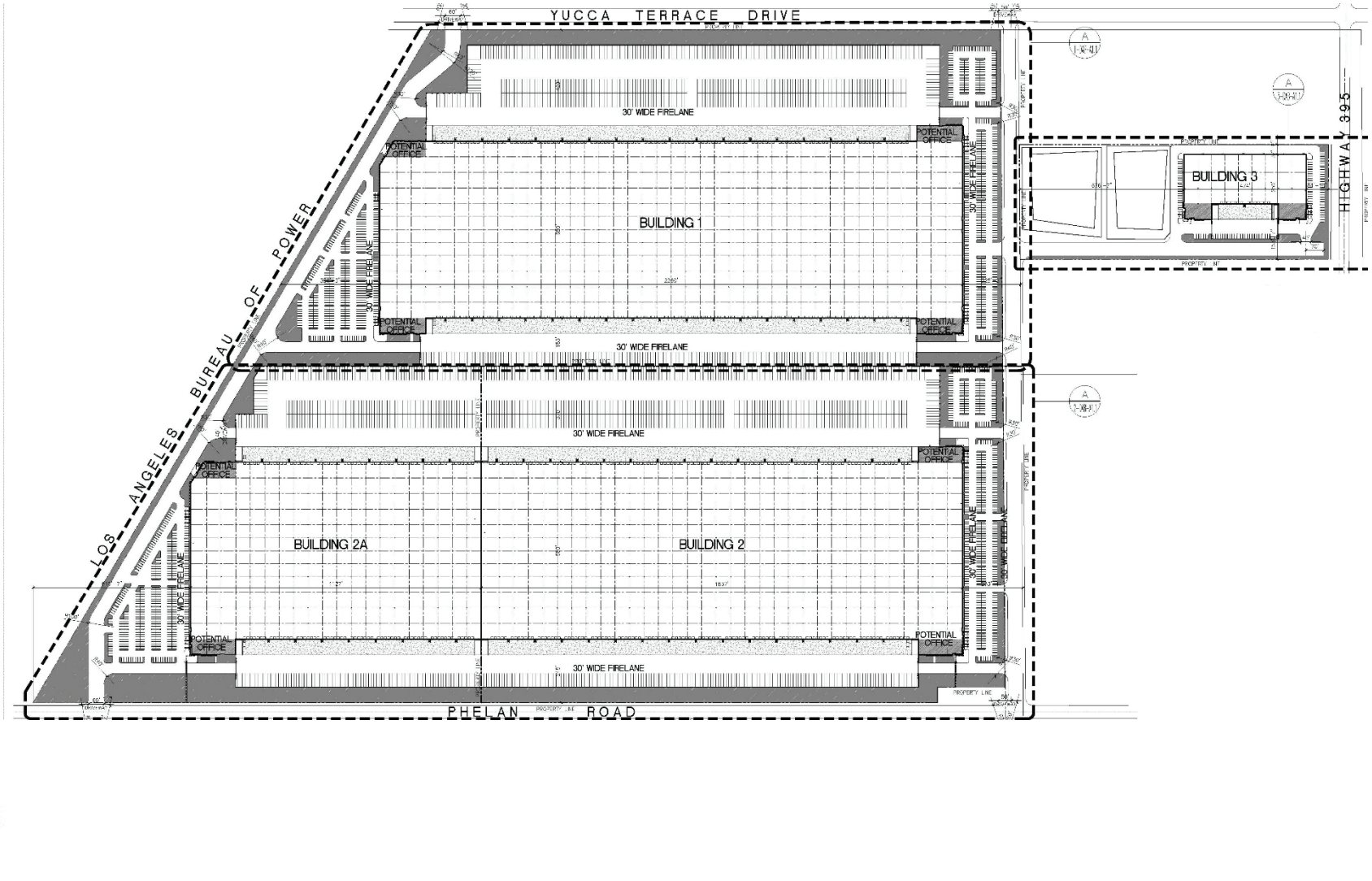
## EXHIBIT 1-A: LOCATION MAP

N

**LEGEND:**

Site Boundary

## EXHIBIT 1-B: SITE PLAN



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# 2 FUNDAMENTALS

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

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

| COMMON OUTDOOR ACTIVITIES | COMMON INDOOR ACTIVITIES | A - WEIGHTED SOUND LEVEL dBA | SUBJECTIVE LOUDNESS | EFFECTS OF NOISE |
|---|---|---|---|---|
| THRESHOLD OF PAIN | | 140 | INTOLERABLE OR DEAFENING | HEARING LOSS |
| NEAR JET ENGINE | | 130 | | |
| | | 120 | | |
| JET FLY-OVER AT 300m (1000 ft) | ROCK BAND | 110 | | |
| LOUD AUTO HORN | | 100 | VERY NOISY | |
| 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 | | SPEECH INTERFERENCE |
| NOISY URBAN AREA, DAYTIME | VACUUM CLEANER AT 3m (10 ft) | 70 | LOUD | |
| HEAVY TRAFFIC AT 90m (300 ft) | NORMAL SPEECH AT 1m (3 ft) | 60 | | |
| QUIET URBAN DAYTIME | LARGE BUSINESS OFFICE | 50 | MODERATE | |
| QUIET URBAN NIGHTTIME | THEATER, LARGE CONFERENCE ROOM (BACKGROUND) | 40 | | SLEEP DISTURBANCE |
| QUIET SUBURBAN NIGHTTIME | LIBRARY | 30 | FAINT | NO EFFECT |
| QUIET RURAL NIGHTTIME | BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND) | 20 | | |
| | BROADCAST/RECORDING STUDIO | 10 | VERY FAINT | |
| 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. (2) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA

at approximately 100 feet, which can cause serious discomfort. (3) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

## 2.2 NOISE DESCRIPTORS

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

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 sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Hesperia relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

## 2.3 SOUND PROPAGATION

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

### 2.3.1 GEOMETRIC SPREADING

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

### 2.3.2 GROUND ABSORPTION

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

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

### 2.3.3 Atmospheric Effects

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

### 2.3.4 Shielding

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an “out of sight, out of mind” effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The FHWA does not consider the planting of vegetation to be a noise abatement measure. (4)

### 2.3.5 Reflection

Field studies conducted by the FHWA have shown that the reflection from barriers and buildings does not substantially increase noise levels. (4) If all the noise striking a structure was reflected back to a given receiving point, the increase would be theoretically limited to 3 dBA. Further, not all the acoustical energy is reflected back to same point. Some of the energy would go over the structure, some is reflected to points other than the given receiving point, some is scattered by ground coverings (e.g., grass and other plants), and some is blocked by intervening structures and/or obstacles (e.g., the noise source itself). Additionally, some of the reflected energy is lost due to the longer path that the noise must travel. FHWA measurements made to quantify reflective increases in traffic noise have not shown an increase of greater than 1-2 dBA; an increase that is not perceptible to the average human ear.

## 2.4 Noise Control

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This

concept is known as the source-path-receiver concept. In general, noise control measures can be applied to these three elements.

## 2.5 NOISE BARRIER ATTENUATION

Effective noise barriers can reduce noise levels by up to 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (4)

## 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. (5)

## 2.7 COMMUNITY RESPONSE TO NOISE

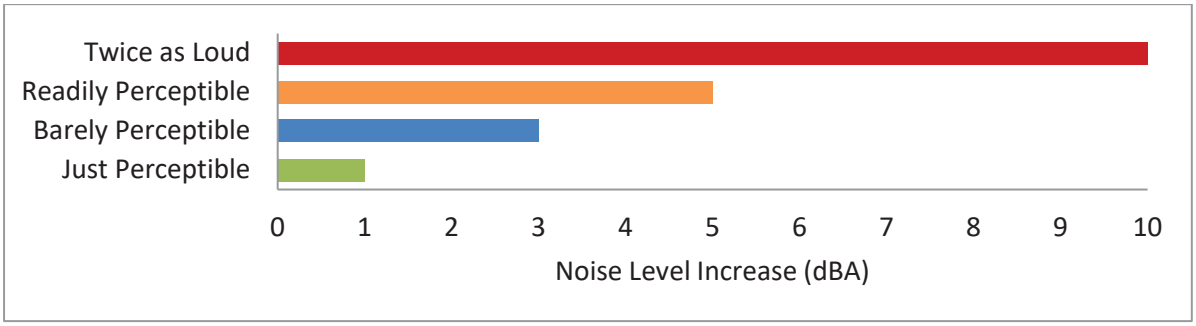
Community responses to noise may range from registering a complaint by telephone or letter, to initiating court action, depending upon everyone's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

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

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (6) Surveys have shown that about ten percent of the people exposed to traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (6) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of

3 dBA are considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (4)

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




## 2.8 EXPOSURE TO HIGH NOISE LEVELS

The Occupational Safety and Health Administration (OSHA) sets legal limits on noise exposure in the workplace. The permissible exposure limit (PEL) for a worker over an eight-hour day is 90 dBA. The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half. The National Institute for Occupational Safety and Health (NIOSH) has recommended that all worker exposures to noise should be controlled below a level equivalent to 85 dBA for eight hours to minimize occupational noise induced hearing loss. NIOSH also recommends a 3 dBA exchange rate so that every increase by 3 dBA doubles the amount of the noise and halves the recommended amount of exposure time. (7)

OSHA has implemented requirements to protect all workers in general industry (e.g. the manufacturing and the service sectors) for employers to implement a Hearing Conservation Program where workers are exposed to a time weighted average noise level of 85 dBA or higher over an eight-hour work shift. Hearing Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training, and conduct evaluations of the adequacy of the hearing protectors in use unless changes to tools, equipment and schedules are made so that they are less noisy and worker exposure to noise is less than the 85 dBA. This noise study does not evaluate the noise exposure of workers within a project or construction site based on CEQA requirements, and instead, evaluates Project-related operational and construction noise levels at the nearby sensitive receiver locations in the Project study area.

## 2.9 VIBRATION

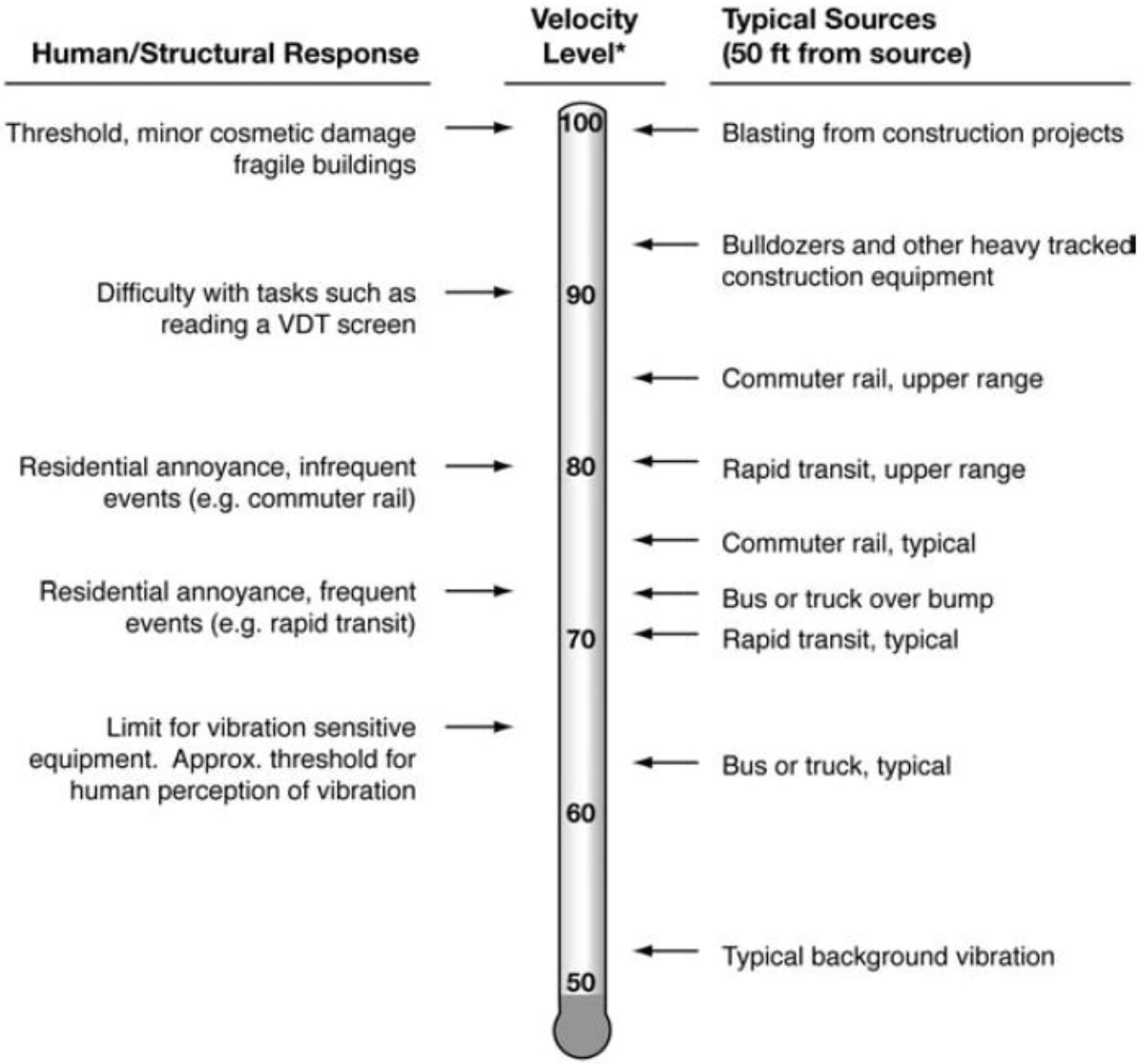
Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (8), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction

equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

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

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

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




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

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# 3 REGULATORY SETTING

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

## 3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

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

## 3.2 STATE OF CALIFORNIA GREEN BUILDING STANDARDS CODE

The State of California's Green Building Standards Code contains mandatory measures for non-residential building construction in Section 5.507 on Environmental Comfort. (10) 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 areas where noise contours are not readily available. If the development falls within an airport or freeway 65 dBA CNEL noise contour, the combined sound transmission class (STC) rating of the wall and roof-ceiling assemblies must be at least 50. For those developments in areas where noise contours are not readily available and the noise level exceeds 65 dBA $L_{eq}$ for any hour of operation, a wall and roof-ceiling combined STC rating of 45, and exterior windows with a minimum STC rating of 40 are required (Section 5.507.4.1).

## 3.3 CITY OF HESPERIA GENERAL PLAN NOISE ELEMENT

The City of Hesperia has adopted a Noise Element of the General Plan (11) to control and abate environmental noise, and to protect the citizens of the City of Hesperia from excessive exposure to noise. The General Plan Noise Element specifies the maximum allowable unmitigated exterior noise levels for new developments impacted by transportation noise sources such as arterial roads, freeways, airports, and railroads. In addition, the City of Hesperia General Plan Noise Element identifies several goals and policies to minimize the impacts of excessive noise levels throughout the community and establishes noise level requirements for all land uses. To limit the exposure of City residents to excessive noise, the City of Hesperia General Plan Noise Element contains the following two goals:

*NS-1* *To achieve and maintain an environment which is free from excessive or harmful noise through identification, control, and abatement.*

*NS-2* *To achieve and maintain an environment which is free from excessive vibration.*

To satisfy these two overarching goals, the General Plan Noise Element identifies the following implementation policies to reduce noise levels associated with the development of the Project.

*NS-1.2* *Control and abate undesirable sounds through the use of the land use compatibility criteria shown in Exhibit NS-1, Table NS-3, and the Municipal Code Section 16.20.125(B).*

*NS-1.5* *Require the design and construction of commercial, industrial, office and mixed-use structures developments with noise attenuation methods to minimize excessive noise upon noise-sensitive land uses.*

*NS-1.9* *Encourage commercial, industrial, office and mixed-use developments to locate loading areas, parking lots, driveways, trash enclosures, mechanical equipment, and other noisier components away from noise-sensitive land uses.*

*NS-1.10* *Limit the hours of construction activity in, and around, residential areas in order to reduce the intrusion of noise in the early morning and late evening hours and on weekends and holidays.*

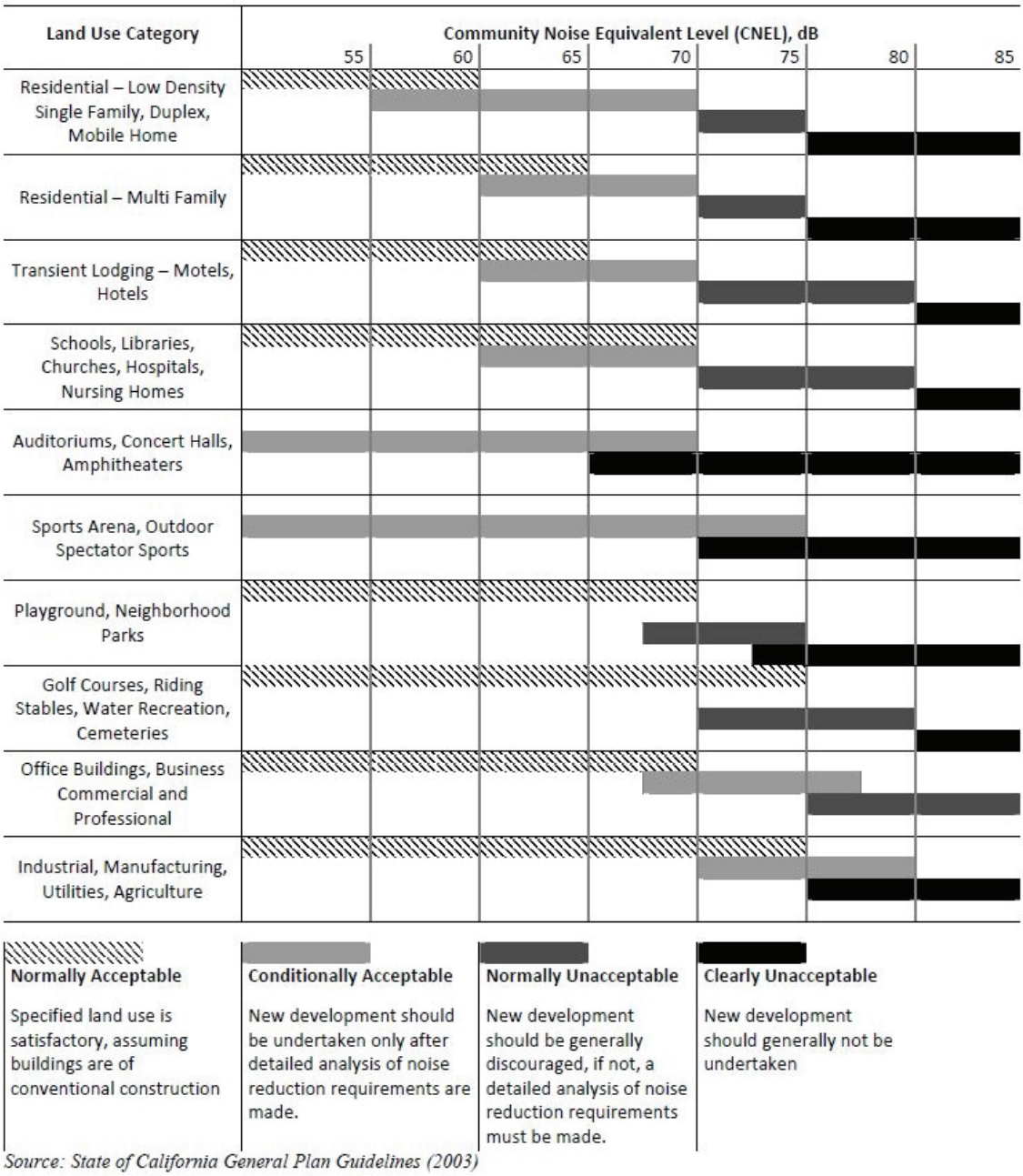
*NS-1.11* *Limit delivery hours for businesses with loading areas or docks fronting, siding, or bordering or gaining access on driveways adjacent to noise-sensitive areas.*

*NS-1.12* *Implement nighttime and daytime on-site noise level limits to address noise generated by commercial and industrial uses where it affects abutting residential and other noise-sensitive land uses.*

The State of California Land Use Compatibility Plan (Exhibit NS-1) in the City of Hesperia General Plan Noise Element lists land use categories and the acceptable and unacceptable levels of community noise exposure. The compatibility criteria shown on Table NS-1 (and Exhibit 3-A of this report) provides the City with a planning tool to gauge the compatibility of land uses relative to existing and future exterior noise levels.

The State of California Land Use Compatibility Plan describes categories of compatibility, but not specific noise standards. According to these categories of transportation-related noise compatibility, the Hesperia Commerce Center II industrial land uses are considered *normally acceptable* with unmitigated exterior noise levels below 75 dBA CNEL and *conditionally acceptable* with noise levels between 70 and 80 dBA CNEL. For *conditionally acceptable* land use, *"new construction or development should be undertaken only after a detailed analysis of noise reduction requirements are made.* (11)

**EXHIBIT 3-A: LAND USE NOISE COMPATIBILITY CRITERIA**




*Source: State of California General Plan Guidelines (2003)*

## 3.4 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Hesperia Commerce Center II, stationary-source (operational) noise such as the expected loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity are typically evaluated against standards established under a jurisdiction's Municipal Code.

Section 16.20.125 of the City of Hesperia Municipal Code included in Appendix 3.1, establishes the noise level standards for stationary noise sources and establishes noise level limits for affected land uses. Since the Project land use will potentially impact a combination of non-noise-sensitive and noise sensitive uses in the Project study area, this noise study relies on the exterior noise level standards for all land uses identified by the City of Hesperia Municipal Code.

For non-noise sensitive industrial uses, the maximum exterior noise level shall not exceed 70 dBA $L_{eq}$ at any time, while the maximum exterior noise level exterior noise levels at non-noise sensitive commercial uses shall not exceed 65 dBA $L_{eq}$ at any time. For noise sensitive residential properties, the maximum exterior noise level shall not exceed 60 dBA $L_{eq}$ during the daytime hours (7:00 a.m. to 10:00 p.m.) and 50 dBA $L_{eq}$ during the nighttime hours (10:00 p.m. to 7:00 a.m.). (12) In addition, except for the nighttime hours from 10:00 p.m. to 7:00 a.m.) the maximum permissible noise levels due to wind noise may be adjusted so that it is no greater than five dB(A) above the ambient noise level. The Municipal Code operational noise level standards are summarized on Table 3-1.

**TABLE 3-1: OPERATIONAL NOISE STANDARDS**

| Jurisdiction | Receiving Land Use | Time Period | Exterior Noise Level Standard (dBA $L_{eq}$)[2] |
|---|---|---|---|
| City of Hesperia[1] | A-1, A-2, R-1, R-3, and RR Zone Districts | Daytime (7:00 a.m. - 10:00 p.m.) | 60 |
| | | Nighttime (10:00 p.m. - 7:00 a.m.) | 55 |
| | C-1, C-2, C-3, C-4, C-R, AP, and P-I Zone Districts | Anytime | 65 |
| | I-1 and I-2 Zone | Anytime | 70 |

[1] Source: City of Hesperia Municipal Code, Section 16.20.125 (Appendix 3.1).
$L_{eq}$ represents a steady state sound level containing the same total energy as a time varying signal over a given sample period.

## 3.5 CONSTRUCTION NOISE STANDARDS

The City of Hesperia Municipal Code, Section 16.20.125.E.3 exempts construction noise from its stationary-source noise level limits between seven a.m. and seven p.m. and at any time on Sundays and federal holidays. (12) In addition, neither the City of Hesperia General Plan or 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. (8 p. 179)

## 3.6 VIBRATION STANDARDS

The City of Hesperia Municipal Code, Section 16.20.130, identifies an operational vibration level threshold of 0.2 in/sec PPV which is used in this report to evaluate potential impacts due to on-site Project related operational vibration level activities at nearby receiver locations. (12) According to Section 16.20.130.C.2, temporary construction, maintenance, or demolition activities are considered exempt provided that construction vibration activity is limited the hours between seven a.m. and seven p.m. including Sundays and federal holidays.

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# 4 SIGNIFICANCE CRITERIA

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

A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

B. Generation of excessive ground-borne vibration or ground-borne noise levels?

C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

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

## 4.1 CEQA GUIDELINES NOT FURTHER ANALYZED

The Project site is not located within two miles of a public airport or within an airport land use plan. The closest airport is the Hesperia Airport located approximately 6 miles southeast of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant,* and no further noise analysis is conducted in relation to CEQA Appendix G Guideline C.

## 4.2 NOISE-SENSITIVE RECEIVERS

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the nearest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels, and the location of noise-sensitive receivers to determine if a noise level increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders the noise impact significant.* (13) Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding human reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged.

Since neither the City of Hesperia General Plan Noise Element or Municipal Code identify any noise level increase thresholds, the substantial noise level increase criteria are derived from the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual.* To describe the amount to which a given noise level increase is considered acceptable, the FTA criteria is used to evaluate the incremental noise level increase and establishes a method for comparing future project noise with existing ambient conditions under CEQA Significance Threshold A. I

In effect, the amount to which a given noise level increase is considered acceptable is reduced based on existing ambient noise conditions. Table 4-1 below provides a summary of the allowable criteria used to identify potentially significant incremental noise level increases.

**TABLE 4-1: SIGNIFICANCE OF NOISE LEVEL INCREASES**

| Without Project Noise Level | Potential Significant Impact (dBA CNEL) |
|---|---|
| < 55 dBA | 5 dBA or more |
| 55 - 60 dBA | 3 dBA or more |
| 60 - 65 dBA | 2 dBA or more |
| > 65 dBA | 1 dBA or more |

FTA Transit Noise and Vibration Impact Assessment Manual, 2018 (Table 4-6).

## 4.3 NON-NOISE-SENSITIVE RECEIVERS

As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise level for non-noise-sensitive land use, such as office, commercial and professional use 70 dBA CNEL and 75 dBA CNEL for industrial uses. Therefore, noise levels greater than 70 dBA CNEL for office, commercial and professional use or 75 dBA CNEL for industrial uses are considered *conditionally acceptable* according to the *State of California Land Use Compatibility Plan*.

To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a *barely perceptible* 3 dBA criteria is used. (4) When the without Project noise levels are greater than the *normally acceptable* 70 or 75 dBA CNEL land use compatibility criteria, a *barely perceptible* 3 dBA or greater noise level increase is considered a *significant impact* since the noise level criteria is already exceeded.

## 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 4-2 shows the significance criteria summary matrix.

**TABLE 4-2: SIGNIFICANCE CRITERIA SUMMARY**

| Analysis | Receiving Land Use | Condition(s) | Significance Criteria | |
|---|---|---|---|---|
| | | | Daytime | Nighttime |
| Off-Site Traffic | Noise-Sensitive[1] | If ambient is < 55 dBA CNEL | ≥ 5 dBA CNEL Project increase | |
| | | If ambient is 55 - 60 dBA CNEL | ≥ 3 dBA CNEL Project increase | |
| | | If ambient is 60 - 65 dBA CNEL | ≥ 2 dBA CNEL Project increase | |
| | | If ambient is > 65 dBA CNEL | ≥ 1 dBA CNEL Project increase | |
| | Office[2] | if ambient is > 70 dBA CNEL | ≥ 3 dBA CNEL Project increase | |
| | Industrial[2] | if ambient is > 75 dBA CNEL | ≥ 3 dBA CNEL Project increase | |
| Operational | Multiple | Exterior Noise Level Standards | See Table 3-1. | |
| | Noise-Sensitive[1] | If ambient is < 55 dBA $L_{eq}$ | ≥ 5 dBA $L_{eq}$ Project increase | |
| | | If ambient is 55 - 60 dBA $L_{eq}$ | ≥ 3 dBA $L_{eq}$ Project increase | |
| | | If ambient is 60 - 65 dBA $L_{eq}$ | ≥ 2 dBA $L_{eq}$ Project increase | |
| | | If ambient is < 65 dBA $L_{eq}$ | ≥ 1 dBA $L_{eq}$ Project increase | |
| | | Vibration Level Threshold[3] | 0.2 in/sec PPV | |
| Construction | All | Permitted hours of 7:00 a.m. to7:00 p.m. except Sunday or a federal holiday[4] | | |
| | | Noise Level Threshold[1] | 80 dBA $L_{eq}$ | n/a |
| | | Vibration Level Threshold[3] | 0.2 in/sec PPV | n/a |

[1] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[2] City of Hesperia General Plan Noise Element Exhibit NS-1 Land Use Compatibility Criteria.
[3] City of Hesperia Municipal Code, Section 16.20.130.A (Appendix 3.1).
[4] City of Hesperia Municipal Code, Section 16.20.125.E.3 (Appendix 3.1).
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.; "PPV" = peak particle velocity.

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# 5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at six locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, May 20th, 2020. Appendix 5.1 includes study area photos.

## 5.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (14)

## 5.2 NOISE MEASUREMENT LOCATIONS

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

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

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

## 5.3 NOISE MEASUREMENT RESULTS

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

- Location L1 represents the noise levels northwest of the Project site on Yucca Terrace Drive near existing single-family residential home at 10120 Fremontia Road. The noise levels at this location consist primarily of traffic noise from Yucca Terrance Drive and Fremontia Road. The noise level measurements collected show an overall 24-hour exterior noise level of 61.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 54.7 dBA $L_{eq}$ with an average nighttime noise level of 54.9 dBA $L_{eq}$.
- Location L2 represents the noise levels northeast of the Project site on Bolinas Street near existing Vacant Land. The ambient noise levels at this location account for traffic on Bolinas Street and US-395. The noise level measurements collected show an overall 24-hour exterior noise level of 65.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 58.8 dBA $L_{eq}$ with an average nighttime noise level of 58.9 dBA $L_{eq}$.
- Location L3 represents the noise levels east of the Project site on Mesa Linda Street near the West Main Villas multi-family homes. The 24-hour CNEL indicates that the overall exterior noise level is 65.5 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 59.1 dBA $L_{eq}$ with an average nighttime noise level of 59.2 dBA $L_{eq}$. Background traffic noise from Mesa Linda Street and Main Street represent the primary source of noise at this location.
- Location L4 represents the noise levels south of the Project site on Phelan Road near existing single-family residential home at 9565 Fremontia Road. The noise level measurements collected show an overall 24-hour exterior noise level of 75.4 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 70.6 dBA $L_{eq}$ with an average nighttime noise level of 71.6 dBA $L_{eq}$. The noise levels at this location consist primarily of traffic noise from Phelan Road.
- Location L5 represents the noise levels west of the Project site on Monta Vista near existing single-family residential home at 9751 Monta Vista. The 24-hour CNEL indicates that the overall exterior noise level is 57.2 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 52.8 dBA $L_{eq}$ with an average nighttime noise level of 54.1 dBA $L_{eq}$. Traffic on Monte Vista represents the primary source of noise at this location.
- Location L6 represents the noise levels west of the Project site on Monta Vista near existing single-family residential home at 10040 Monta Vista. The 24-hour CNEL indicates that the overall exterior noise level is 55.1 dBA CNEL. The energy (logarithmic) average daytime noise level was calculated at 50.4 dBA $L_{eq}$ with an average nighttime noise level of 51.5 dBA $L_{eq}$. Traffic on Monte Vista represents the primary source of noise at this location.

Table 5-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, $L_1$, $L_2$, $L_5$, $L_8$, $L_{25}$, $L_{50}$, $L_{90}$, $L_{95}$, and $L_{99}$ percentile noise levels observed during the daytime and nighttime periods.

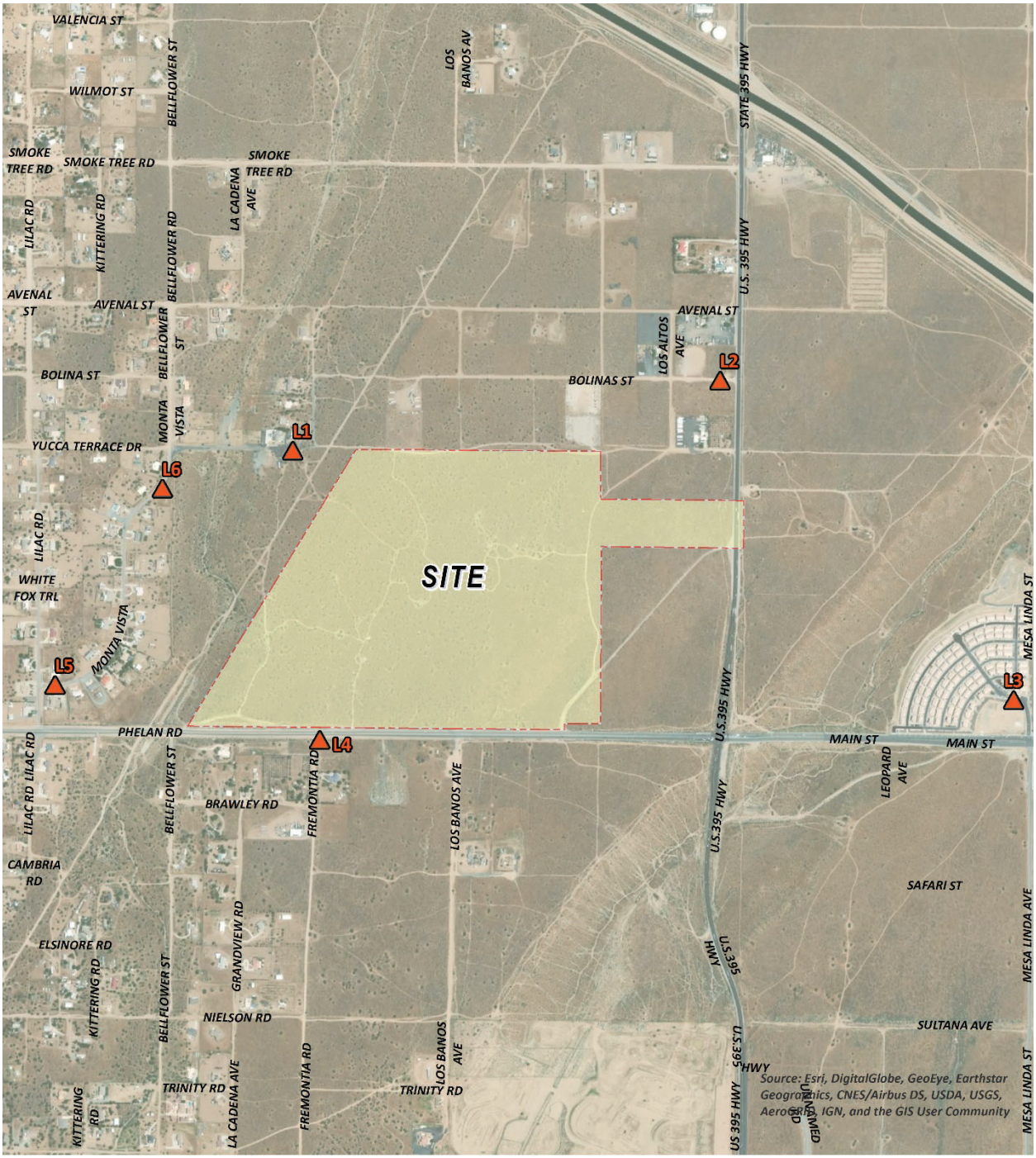
The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with surface streets and US-395. This includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 5-1.

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

| Location[1] | Description | Energy Average Noise Level (dBA $L_{eq}$)[2] | | CNEL |
|---|---|---|---|---|
| | | Daytime | Nighttime | |
| L1 | Located northwest of the Project site on Yucca Terrace Drive near existing single-family residential home at 10120 Fremontia Road. | 54.7 | 54.9 | 61.2 |
| L2 | Located northeast of the Project site on Bolinas Street near existing Vacant Land. | 58.8 | 58.9 | 65.2 |
| L3 | Located east of the Project site on Mesa Linda Street near the West Main Villas multi-family homes. | 59.1 | 59.2 | 65.5 |
| L4 | Located south of the Project site on Phelan Road near existing single-family residential home at 9565 Fremontia Road. | 70.6 | 71.6 | 75.4 |
| L5 | Located west of the Project site on Monta Vista near existing single-family residential home at 9751 Monta Vista. | 52.8 | 54.1 | 57.2 |
| L6 | Located west of the Project site on Monta Vista near existing single-family residential home at 10040 Monta Vista. | 50.4 | 51.5 | 55.1 |

[1] See Exhibit 5-A for the noise level measurement locations.
[2] Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

## EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



# 6 TRAFFIC NOISE PREDICTION METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment. Consistent with the *Land Use Compatibility Criteria*, 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. (15) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (16) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. 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. (17)

## 6.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site dBA CNEL transportation noise impacts. Table 6-1 identifies the 31 study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Hesperia General Plan Circulation Element, and the posted vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on the *Hesperia Commerce Center II Traffic Impact Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios under both Without and With Project alternatives: Existing (2019), Opening Year Cumulative (2021), and Horizon Year (2040). (18)

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

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

| ID | Roadway | Segment | Receiving Land Use[1] | Distance from Centerline to Receiving Land Use (Feet)[2] | Vehicle Speed (mph)[3] |
|---|---|---|---|---|---|
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 62' | 55 |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 62' | 55 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 62' | 55 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 62' | 55 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 52' | 55 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 52' | 55 |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 25' | 40 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 65' | 55 |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 65' | 55 |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 65' | 55 |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 65' | 55 |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 50' | 50 |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 50' | 50 |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 30' | 40 |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 34' | 40 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 62' | 55 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 62' | 55 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 50' | 55 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 52' | 55 |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 52' | 55 |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 52' | 55 |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 52' | 55 |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 60' | 50 |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 60' | 50 |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 60' | 50 |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 60' | 50 |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 60' | 50 |
| 28 | Main St. | Escondido Av. | Sensitive | 60' | 50 |
| 29 | Main St. | Topaz Av. | Sensitive | 65' | 55 |
| 30 | Sultana St. | Escondido Av. | Non-Sensitive | 30' | 40 |
| 31 | Joshua St. | US Hwy. 395 | Non-Sensitive | 40' | 55 |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] Distance to receiving land use is based upon the right-of-way distances.
[3] Hesperia Commerce Center II Traffic Impact Analysis.

## TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

| ID | Roadway | Segment | Average Daily Traffic Volumes[1] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Existing 2019 | | Opening Year Cumulative (OYC) 2021 | | Horizon Year (HY) 2040 | |
| | | | Without Project | With Project | Without Project | With Project | Without Project | With Project |
| 1 | US Hwy. 395 | n/o Luna Rd. | 23,862 | 24,170 | 28,362 | 28,670 | 57,258 | 57,567 |
| 2 | US Hwy. 395 | s/o Luna Rd. | 20,348 | 20,752 | 24,674 | 25,078 | 55,402 | 55,806 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | 22,779 | 23,564 | 27,178 | 27,963 | 58,992 | 59,777 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | 23,878 | 24,949 | 28,296 | 29,367 | 58,413 | 59,484 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | 6,265 | 6,551 | 6,519 | 6,804 | 8,855 | 9,141 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | 2,389 | 2,579 | 2,485 | 2,676 | 3,376 | 3,567 |
| 7 | Verbena Rd. | n/o Phelan Rd. | 192 | 287 | 200 | 295 | 271 | 367 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | 25,536 | 28,914 | 32,744 | 36,122 | 39,091 | 42,469 |
| 9 | US Hwy. 395 | s/o Main St. | 22,673 | 24,579 | 27,011 | 28,917 | 57,363 | 59,269 |
| 10 | US Hwy. 395 | s/o Poplar St. | 22,662 | 24,568 | 27,426 | 29,332 | 35,235 | 37,141 |
| 11 | US Hwy. 395 | s/o Joshua St. | 24,326 | 25,851 | 28,574 | 30,099 | 34,380 | 35,905 |
| 12 | Escondido Av. | n/o Sultana St. | 20,716 | 21,097 | 23,770 | 24,151 | 29,278 | 29,659 |
| 13 | Escondido Av. | s/o Sultana St. | 20,716 | 20,906 | 23,770 | 23,960 | 29,278 | 29,469 |
| 14 | Topaz Av. | n/o Main St. | 3,199 | 3,295 | 3,343 | 3,438 | 4,522 | 4,617 |
| 15 | Luna Rd. | e/o US Hwy. 395 | 7,673 | 7,768 | 7,999 | 8,094 | 10,845 | 10,940 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | 12,845 | 13,227 | 13,776 | 14,158 | 20,088 | 20,469 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | 320 | 415 | 341 | 436 | 452 | 547 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | 1,610 | 1,801 | 1,691 | 1,882 | 2,276 | 2,467 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | 15,549 | 15,930 | 19,241 | 19,622 | 21,976 | 22,357 |
| 20 | Phelan Rd. | w/o Verbena Rd. | 15,453 | 16,311 | 19,141 | 19,998 | 21,840 | 22,698 |
| 21 | Phelan Rd. | w/o Bellflower St. | 15,874 | 16,827 | 19,579 | 20,532 | 22,435 | 23,388 |
| 22 | Phelan Rd. | e/o Dwy. 1 | 16,327 | 17,398 | 20,051 | 21,122 | 23,076 | 24,147 |
| 23 | Main St. | w/o Mesa Linda St. | 17,996 | 25,964 | 23,919 | 31,887 | 25,435 | 33,403 |
| 24 | Main St. | w/o Cataba Rd. | 19,799 | 27,767 | 26,165 | 34,133 | 27,982 | 35,950 |
| 25 | Main St. | e/o Key Point Av. | 30,634 | 35,035 | 38,235 | 42,637 | 43,295 | 47,697 |
| 26 | Main St. | e/o Mariposa Rd. | 39,544 | 40,497 | 45,113 | 46,066 | 55,888 | 56,841 |
| 27 | Main St. | w/o Escondido Av. | 41,069 | 42,022 | 46,700 | 47,653 | 58,044 | 58,997 |
| 28 | Main St. | Escondido Av. | 33,268 | 33,840 | 37,911 | 38,482 | 47,018 | 47,590 |
| 29 | Main St. | Topaz Av. | 30,474 | 30,760 | 34,673 | 34,959 | 43,069 | 43,355 |
| 30 | Sultana St. | Escondido Av. | 4,122 | 4,312 | 4,456 | 4,647 | 5,825 | 6,016 |
| 31 | Joshua St. | US Hwy. 395 | 4,420 | 4,802 | 10,141 | 10,523 | 11,156 | 11,537 |

[1] Hesperia Commerce Center II Traffic Impact Analysis.

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

Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

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

| Vehicle Type | Time of Day Splits[1] | | | Total of Time of Day Splits |
|---|---|---|---|---|
| | Daytime | Evening | Nighttime | |
| Autos | 62.20% | 12.75% | 25.05% | 100.00% |
| Medium Trucks | 67.85% | 9.36% | 22.79% | 100.00% |
| Heavy Trucks | 63.02% | 10.79% | 26.19% | 100.00% |

[1] Based on an existing 24-hour count taken at United Stated Highway 395 and Main Street. (Hesperia Commerce Center II Traffic Impact Analysis, Urban Crossroads, Inc.). Values rounded to the nearest one-hundredth.
"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

**TABLE 6-4: WITHOUT PROJECT VEHICLE MIX**

| Classification | Total % Traffic Flow | | | Total |
|---|---|---|---|---|
| | Autos | Medium Trucks | Heavy Trucks | |
| All Segments | 81.35% | 6.69% | 11.96% | 100.00% |

Based on an existing vehicle count taken at United States Highway 395 and Main Street (Hesperia Commerce Center II Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth.

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

## TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

| ID | Roadway | Segment | With Project[1] | | | |
|---|---|---|---|---|---|---|
| | | | Autos | Medium Trucks | Heavy Trucks | Total[2] |
| 1 | US Hwy. 395 | n/o Luna Rd. | 83.53% | 7.51% | 8.95% | 100.00% |
| 2 | US Hwy. 395 | s/o Luna Rd. | 83.56% | 7.50% | 8.93% | 100.00% |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | 83.85% | 7.37% | 8.78% | 100.00% |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | 84.04% | 7.28% | 8.68% | 100.00% |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | 84.52% | 7.04% | 8.44% | 100.00% |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | 85.01% | 6.82% | 8.17% | 100.00% |
| 7 | Verbena Rd. | n/o Phelan Rd. | 89.18% | 4.92% | 5.90% | 100.00% |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | 82.92% | 7.91% | 9.17% | 100.00% |
| 9 | US Hwy. 395 | s/o Main St. | 85.07% | 6.79% | 8.14% | 100.00% |
| 10 | US Hwy. 395 | s/o Poplar St. | 85.07% | 6.79% | 8.14% | 100.00% |
| 11 | US Hwy. 395 | s/o Joshua St. | 84.77% | 6.92% | 8.31% | 100.00% |
| 12 | Escondido Av. | n/o Sultana St. | 84.11% | 7.23% | 8.67% | 100.00% |
| 13 | Escondido Av. | s/o Sultana St. | 83.96% | 7.29% | 8.75% | 100.00% |
| 14 | Topaz Av. | n/o Main St. | 84.28% | 7.15% | 8.57% | 100.00% |
| 15 | Luna Rd. | e/o US Hwy. 395 | 84.01% | 7.27% | 8.72% | 100.00% |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | 84.28% | 7.15% | 8.57% | 100.00% |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | 87.53% | 5.67% | 6.80% | 100.00% |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | 85.53% | 6.58% | 7.89% | 100.00% |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | 84.20% | 7.18% | 8.62% | 100.00% |
| 20 | Phelan Rd. | w/o Verbena Rd. | 84.67% | 6.97% | 8.36% | 100.00% |
| 21 | Phelan Rd. | w/o Bellflower St. | 84.73% | 6.94% | 8.33% | 100.00% |
| 22 | Phelan Rd. | e/o Dwy. 1 | 84.13% | 7.25% | 8.62% | 100.00% |
| 23 | Main St. | w/o Mesa Linda St. | 80.12% | 9.50% | 10.39% | 100.00% |
| 24 | Main St. | w/o Cataba Rd. | 80.36% | 9.36% | 10.28% | 100.00% |
| 25 | Main St. | e/o Key Point Av. | 82.80% | 7.98% | 9.22% | 100.00% |
| 26 | Main St. | e/o Mariposa Rd. | 84.19% | 7.19% | 8.62% | 100.00% |
| 27 | Main St. | w/o Escondido Av. | 84.18% | 7.19% | 8.63% | 100.00% |
| 28 | Main St. | Escondido Av. | 84.09% | 7.23% | 8.68% | 100.00% |
| 29 | Main St. | Topaz Av. | 83.96% | 7.29% | 8.74% | 100.00% |
| 30 | Sultana St. | Escondido Av. | 84.53% | 7.03% | 8.44% | 100.00% |
| 31 | Joshua St. | US Hwy. 395 | 85.10% | 6.77% | 8.13% | 100.00% |

[1] Hesperia Commerce Center II Traffic Impact Analysis.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

## TABLE 6-6: OPENING YEAR CUMULATIVE (2021) WITH PROJECT VEHICLE MIX

| ID | Roadway | Segment | With Project[1] | | | |
|---|---|---|---|---|---|---|
| | | | Autos | Medium Trucks | Heavy Trucks | Total[2] |
| 1 | US Hwy. 395 | n/o Luna Rd. | 83.58% | 7.49% | 8.93% | 100.00% |
| 2 | US Hwy. 395 | s/o Luna Rd. | 83.60% | 7.48% | 8.92% | 100.00% |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | 83.85% | 7.37% | 8.79% | 100.00% |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | 84.00% | 7.29% | 8.70% | 100.00% |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | 84.49% | 7.05% | 8.46% | 100.00% |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | 84.97% | 6.83% | 8.20% | 100.00% |
| 7 | Verbena Rd. | n/o Phelan Rd. | 89.04% | 4.98% | 5.98% | 100.00% |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | 83.10% | 7.80% | 9.10% | 100.00% |
| 9 | US Hwy. 395 | s/o Main St. | 84.88% | 6.87% | 8.25% | 100.00% |
| 10 | US Hwy. 395 | s/o Poplar St. | 84.87% | 6.88% | 8.25% | 100.00% |
| 11 | US Hwy. 395 | s/o Joshua St. | 84.63% | 6.99% | 8.38% | 100.00% |
| 12 | Escondido Av. | n/o Sultana St. | 84.07% | 7.24% | 8.69% | 100.00% |
| 13 | Escondido Av. | s/o Sultana St. | 83.94% | 7.30% | 8.76% | 100.00% |
| 14 | Topaz Av. | n/o Main St. | 84.26% | 7.16% | 8.58% | 100.00% |
| 15 | Luna Rd. | e/o US Hwy. 395 | 84.00% | 7.27% | 8.72% | 100.00% |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | 84.25% | 7.16% | 8.59% | 100.00% |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | 87.35% | 5.75% | 6.90% | 100.00% |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | 85.45% | 6.61% | 7.93% | 100.00% |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | 84.13% | 7.22% | 8.66% | 100.00% |
| 20 | Phelan Rd. | w/o Verbena Rd. | 84.51% | 7.04% | 8.45% | 100.00% |
| 21 | Phelan Rd. | w/o Bellflower St. | 84.57% | 7.02% | 8.42% | 100.00% |
| 22 | Phelan Rd. | e/o Dwy. 1 | 84.08% | 7.27% | 8.65% | 100.00% |
| 23 | Main St. | w/o Mesa Linda St. | 80.80% | 9.10% | 10.10% | 100.00% |
| 24 | Main St. | w/o Cataba Rd. | 81.00% | 8.99% | 10.01% | 100.00% |
| 25 | Main St. | e/o Key Point Av. | 82.98% | 7.87% | 9.15% | 100.00% |
| 26 | Main St. | e/o Mariposa Rd. | 84.15% | 7.21% | 8.64% | 100.00% |
| 27 | Main St. | w/o Escondido Av. | 84.14% | 7.21% | 8.65% | 100.00% |
| 28 | Main St. | Escondido Av. | 84.05% | 7.25% | 8.70% | 100.00% |
| 29 | Main St. | Topaz Av. | 83.95% | 7.30% | 8.75% | 100.00% |
| 30 | Sultana St. | Escondido Av. | 84.48% | 7.06% | 8.46% | 100.00% |
| 31 | Joshua St. | US Hwy. 395 | 84.40% | 7.09% | 8.51% | 100.00% |

[1] Hesperia Commerce Center II Traffic Impact Analysis.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

## TABLE 6-7: HORIZON YEAR (2040) WITH PROJECT VEHICLE MIX

| ID | Roadway | Segment | With Project[1] | | | |
|---|---|---|---|---|---|---|
| | | | Autos | Medium Trucks | Heavy Trucks | Total[2] |
| 1 | US Hwy. 395 | n/o Luna Rd. | 83.70% | 7.42% | 8.88% | 100.00% |
| 2 | US Hwy. 395 | s/o Luna Rd. | 83.72% | 7.41% | 8.87% | 100.00% |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | 83.83% | 7.36% | 8.81% | 100.00% |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | 83.91% | 7.33% | 8.77% | 100.00% |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | 84.32% | 7.13% | 8.55% | 100.00% |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | 84.68% | 6.97% | 8.36% | 100.00% |
| 7 | Verbena Rd. | n/o Phelan Rd. | 88.02% | 5.45% | 6.53% | 100.00% |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | 83.21% | 7.74% | 9.06% | 100.00% |
| 9 | US Hwy. 395 | s/o Main St. | 84.33% | 7.12% | 8.54% | 100.00% |
| 10 | US Hwy. 395 | s/o Poplar St. | 84.64% | 6.98% | 8.37% | 100.00% |
| 11 | US Hwy. 395 | s/o Joshua St. | 84.50% | 7.05% | 8.45% | 100.00% |
| 12 | Escondido Av. | n/o Sultana St. | 84.02% | 7.26% | 8.71% | 100.00% |
| 13 | Escondido Av. | s/o Sultana St. | 83.92% | 7.31% | 8.77% | 100.00% |
| 14 | Topaz Av. | n/o Main St. | 84.15% | 7.21% | 8.64% | 100.00% |
| 15 | Luna Rd. | e/o US Hwy. 395 | 83.96% | 7.29% | 8.75% | 100.00% |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | 84.12% | 7.22% | 8.66% | 100.00% |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | 86.63% | 6.08% | 7.29% | 100.00% |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | 85.06% | 6.79% | 8.14% | 100.00% |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | 84.09% | 7.23% | 8.68% | 100.00% |
| 20 | Phelan Rd. | w/o Verbena Rd. | 84.43% | 7.08% | 8.49% | 100.00% |
| 21 | Phelan Rd. | w/o Bellflower St. | 84.47% | 7.06% | 8.47% | 100.00% |
| 22 | Phelan Rd. | e/o Dwy. 1 | 84.04% | 7.28% | 8.68% | 100.00% |
| 23 | Main St. | w/o Mesa Linda St. | 80.94% | 9.02% | 10.04% | 100.00% |
| 24 | Main St. | w/o Cataba Rd. | 81.14% | 8.90% | 9.95% | 100.00% |
| 25 | Main St. | e/o Key Point Av. | 83.07% | 7.81% | 9.11% | 100.00% |
| 26 | Main St. | e/o Mariposa Rd. | 84.09% | 7.24% | 8.68% | 100.00% |
| 27 | Main St. | w/o Escondido Av. | 84.08% | 7.24% | 8.68% | 100.00% |
| 28 | Main St. | Escondido Av. | 84.01% | 7.27% | 8.72% | 100.00% |
| 29 | Main St. | Topaz Av. | 83.92% | 7.31% | 8.77% | 100.00% |
| 30 | Sultana St. | Escondido Av. | 84.33% | 7.13% | 8.55% | 100.00% |
| 31 | Joshua St. | US Hwy. 395 | 84.35% | 7.12% | 8.54% | 100.00% |

[1] Hesperia Commerce Center II Traffic Impact Analysis.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

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# 7 OFF-SITE TRAFFIC NOISE IMPACTS

To assess the off-site transportation CNEL noise level impacts associated with the proposed Project, noise contours were developed based on the *Hesperia Commerce Center II Traffic Impact Analysis*. (18) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

## 7.1 TRAFFIC NOISE CONTOURS

Noise contours were used to assess the Project's incremental 24-hour dBA CNEL traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA CNEL noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area.

Tables 7-1 through 7-6 present a summary of the exterior dBA CNEL traffic noise levels without barrier attenuation. Roadway segments are analyzed from the without Project to the with Project conditions in each of the following timeframes: Existing (2019), Opening Year Cumulative (2021), and Horizon Year (2040). Appendix 7.1 includes a summary of the dBA CNEL traffic noise level contours for each of the traffic scenarios.

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

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | Distance to Contour from Centerline (Feet) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 79.4 | 262 | 565 | 1218 |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 78.7 | 236 | 508 | 1095 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 79.2 | 254 | 548 | 1180 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 79.4 | 262 | 565 | 1218 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 74.2 | 99 | 213 | 458 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 70.0 | 52 | 112 | 241 |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 61.3 | RW | RW | 30 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 81.6 | 385 | 830 | 1788 |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 81.1 | 356 | 767 | 1652 |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 81.1 | 356 | 767 | 1651 |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 81.4 | 373 | 804 | 1731 |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 80.4 | 248 | 534 | 1150 |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 80.4 | 248 | 534 | 1150 |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 72.0 | 41 | 88 | 189 |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 74.9 | 72 | 155 | 335 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 76.7 | 174 | 374 | 806 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 60.7 | RW | RW | 69 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 68.7 | RW | 88 | 190 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 78.1 | 181 | 390 | 840 |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 78.1 | 180 | 388 | 836 |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 78.2 | 183 | 395 | 851 |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 78.3 | 187 | 403 | 867 |
| 23 | Main St. | w/o Mesa Linda St. | Non-Sensitive | 79.1 | 244 | 526 | 1133 |
| 24 | Main St. | w/o Cataba Rd. | Non-Sensitive | 79.6 | 260 | 560 | 1208 |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 81.5 | 348 | 750 | 1615 |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 82.2 | 390 | 840 | 1809 |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 82.4 | 400 | 861 | 1856 |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 81.4 | 347 | 748 | 1612 |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 82.4 | 433 | 934 | 2012 |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 73.1 | 48 | 104 | 224 |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 75.2 | 89 | 191 | 411 |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

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

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | Distance to Contour from Centerline (Feet) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 79.5 | 267 | 575 | 1238 |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 78.8 | 241 | 519 | 1117 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 79.3 | 260 | 559 | 1205 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 79.5 | 268 | 578 | 1245 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 74.2 | 99 | 214 | 461 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 70.1 | 53 | 113 | 244 |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 61.6 | RW | RW | 32 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 82.3 | 428 | 923 | 1988 |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 81.2 | 361 | 777 | 1674 |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 81.2 | 360 | 777 | 1673 |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 81.4 | 377 | 811 | 1748 |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 80.4 | 248 | 535 | 1153 |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 80.4 | 248 | 535 | 1152 |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 72.0 | 41 | 88 | 190 |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 74.9 | 72 | 156 | 335 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 76.7 | 174 | 376 | 810 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 61.0 | RW | RW | 72 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 68.8 | RW | 90 | 193 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 78.1 | 182 | 391 | 843 |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 78.1 | 182 | 391 | 843 |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 78.3 | 185 | 399 | 859 |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 78.5 | 193 | 415 | 895 |
| 23 | Main St. | w/o Mesa Linda St. | Non-Sensitive | 81.4 | 343 | 740 | 1594 |
| 24 | Main St. | w/o Cataba Rd. | Non-Sensitive | 81.6 | 357 | 769 | 1658 |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 82.2 | 391 | 842 | 1815 |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 82.2 | 391 | 843 | 1816 |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 82.4 | 401 | 864 | 1862 |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 81.5 | 348 | 750 | 1616 |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 82.4 | 434 | 935 | 2015 |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 73.1 | 48 | 104 | 225 |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 75.3 | 90 | 193 | 417 |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

## TABLE 7-3: OPENING YEAR CUMULATIVE (2021) PROJECT NOISE CONTOURS

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | Distance to Contour from Centerline (Feet) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 80.1 | 294 | 634 | 1366 |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 79.5 | 268 | 578 | 1245 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 80.0 | 286 | 616 | 1328 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 80.1 | 294 | 633 | 1364 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 74.3 | 101 | 218 | 470 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 70.2 | 53 | 115 | 247 |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 61.4 | RW | RW | 31 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 82.7 | 455 | 980 | 2111 |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 81.8 | 400 | 862 | 1856 |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 81.9 | 404 | 870 | 1875 |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 82.1 | 415 | 895 | 1927 |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 81.0 | 272 | 585 | 1261 |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 81.0 | 272 | 585 | 1261 |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 72.2 | 42 | 90 | 194 |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 75.1 | 74 | 160 | 344 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 77.0 | 182 | 392 | 844 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 60.9 | RW | RW | 72 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 68.9 | RW | 91 | 196 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 79.0 | 208 | 449 | 968 |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 79.0 | 208 | 448 | 964 |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 79.1 | 211 | 454 | 979 |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 79.2 | 214 | 462 | 995 |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 80.4 | 295 | 636 | 1370 |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 80.8 | 313 | 675 | 1454 |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 82.4 | 403 | 869 | 1873 |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 82.8 | 426 | 917 | 1975 |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 82.9 | 436 | 938 | 2021 |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 82.0 | 379 | 817 | 1759 |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 82.9 | 472 | 1018 | 2193 |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 73.4 | 51 | 109 | 236 |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 78.8 | 154 | 332 | 715 |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

## TABLE 7-4: OPENING YEAR CUMULATIVE (2021) WITH PROJECT NOISE CONTOURS

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | Distance to Contour from Centerline (Feet) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 80.2 | 298 | 643 | 1385 |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 79.7 | 273 | 588 | 1266 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 80.1 | 291 | 627 | 1351 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 80.3 | 299 | 645 | 1389 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 74.4 | 102 | 220 | 473 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 70.2 | 54 | 116 | 250 |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 61.8 | RW | RW | 33 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 83.2 | 495 | 1066 | 2296 |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 81.9 | 404 | 871 | 1877 |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 82.0 | 408 | 880 | 1896 |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 82.1 | 419 | 902 | 1944 |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 81.0 | 272 | 587 | 1264 |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 81.0 | 272 | 586 | 1262 |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 72.2 | 42 | 91 | 195 |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 75.1 | 74 | 160 | 345 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 77.0 | 183 | 394 | 848 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 61.2 | RW | RW | 75 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 69.0 | RW | 93 | 199 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 79.1 | 209 | 451 | 971 |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 79.1 | 209 | 451 | 971 |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 79.2 | 213 | 458 | 986 |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 79.4 | 220 | 474 | 1020 |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 82.1 | 387 | 834 | 1798 |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 82.4 | 403 | 869 | 1872 |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 83.0 | 444 | 956 | 2059 |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 82.8 | 427 | 920 | 1981 |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 82.9 | 437 | 941 | 2027 |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 82.0 | 380 | 818 | 1763 |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 82.9 | 473 | 1019 | 2196 |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 73.5 | 51 | 110 | 237 |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 78.8 | 155 | 334 | 719 |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

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

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | Distance to Contour from Centerline (Feet) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 83.2 | 470 | 1013 | 2182 |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 83.1 | 460 | 991 | 2135 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 83.3 | 480 | 1033 | 2226 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 83.3 | 476 | 1027 | 2212 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 75.7 | 124 | 268 | 577 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 71.5 | 65 | 141 | 303 |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 62.8 | RW | RW | 38 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 83.4 | 512 | 1102 | 2375 |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 85.1 | 661 | 1424 | 3067 |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 83.0 | 477 | 1029 | 2216 |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 82.9 | 470 | 1012 | 2180 |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 81.9 | 312 | 672 | 1449 |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 81.9 | 312 | 672 | 1449 |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 73.5 | 51 | 110 | 238 |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 76.4 | 91 | 196 | 421 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 78.6 | 234 | 504 | 1086 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 62.2 | RW | RW | 87 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 70.2 | 51 | 111 | 239 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 79.6 | 228 | 491 | 1057 |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 79.6 | 227 | 489 | 1053 |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 79.7 | 231 | 498 | 1072 |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 79.8 | 235 | 507 | 1092 |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 80.6 | 307 | 662 | 1427 |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 81.1 | 328 | 706 | 1521 |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 83.0 | 438 | 944 | 2034 |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 83.7 | 491 | 1058 | 2279 |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 83.9 | 503 | 1085 | 2337 |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 82.9 | 437 | 943 | 2031 |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 83.9 | 546 | 1176 | 2534 |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 74.6 | 61 | 131 | 282 |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 79.2 | 164 | 354 | 762 |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

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

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | Distance to Contour from Centerline (Feet) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 70 dBA CNEL | 65 dBA CNEL | 60 dBA CNEL |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 83.2 | 473 | 1020 | 2198 |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 83.1 | 463 | 998 | 2151 |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 83.4 | 483 | 1042 | 2244 |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 83.3 | 481 | 1036 | 2231 |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 75.7 | 125 | 269 | 580 |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 71.5 | 66 | 142 | 306 |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 63.0 | RW | RW | 40 |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 83.9 | 549 | 1184 | 2551 |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 85.1 | 664 | 1431 | 3083 |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 83.0 | 482 | 1037 | 2235 |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 82.9 | 473 | 1019 | 2195 |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 81.9 | 313 | 674 | 1451 |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 81.9 | 312 | 673 | 1450 |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 73.5 | 51 | 111 | 238 |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 76.4 | 91 | 196 | 422 |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 78.7 | 235 | 505 | 1089 |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 62.4 | RW | RW | 89 |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 70.3 | 52 | 112 | 242 |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 79.6 | 228 | 492 | 1060 |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 79.6 | 228 | 492 | 1059 |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 79.8 | 232 | 501 | 1079 |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 80.0 | 241 | 518 | 1117 |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 82.3 | 398 | 858 | 1848 |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 82.6 | 416 | 896 | 1931 |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 83.5 | 477 | 1027 | 2213 |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 83.7 | 492 | 1060 | 2284 |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 83.9 | 505 | 1087 | 2342 |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 83.0 | 438 | 944 | 2034 |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 83.9 | 546 | 1177 | 2536 |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 74.6 | 61 | 131 | 283 |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 79.2 | 165 | 356 | 766 |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

## 7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report to fully analyze all the existing traffic scenarios identified in the *Hesperia Commerce Center II Traffic Impact Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 60.7 to 82.4 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 61.0 to 82.4 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level impacts will range from 0.0 to 2.3 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, the following two study area roadway segments are shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project truck trip distribution under Existing with Project conditions. The existing noise-sensitive land uses on these two segments are described below.

- Existing noise-sensitive use (residences) on Main Street west of Mesa Linda Street (Segment #23).
- Existing noise-sensitive use (residences) on Main Street west of Cataba Road (Segment #24).

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. In addition, a review of these two study area roadway segments show that they both benefit from existing setbacks and noise barriers that were required to satisfy the General Plan Noise Element exterior noise level standards. These measures are designed to reduce the future long-range exterior noise levels due to future General Plan buildout traffic conditions that include the Project-related off-site traffic noise level impacts.

## 7.3 OPENING YEAR CUMULATIVE (2021) PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year Cumulative (2021) without Project conditions CNEL noise levels. The Opening Year Cumulative (2021) without Project exterior noise levels are expected to range from 60.9 to 82.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the Opening Year Cumulative (2021) with Project conditions will range from 61.2 to 83.2 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases will range from 0.0 to 1.7 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, the following two study area roadway segments are shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project truck trip distribution under OYC with Project conditions.

- Existing noise-sensitive use (residences) on Main Street west of Mesa Linda Street (Segment #23).
- Existing noise-sensitive use (residences) on Main Street west of Cataba Road (Segment #24).

## 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 are expected to range from 62.2 to 85.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the Horizon Year (2040) with Project conditions will range from 62.4 to 85.1 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from 0.0 to 1.7 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-2, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels. Based on the significance criteria for off-site traffic noise presented in Table 4-2, the following two study area roadway segments are shown to experience *potentially significant* off-site traffic noise level increases due to the proposed Project truck trip distribution under Horizon Year with Project conditions.

- Existing noise-sensitive use (residences) on Main Street west of Mesa Linda Street (Segment #23).
- Existing noise-sensitive use (residences) on Main Street west of Cataba Road (Segment #24).

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

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | | | Noise Sensitive Land Use? | Exterior Noise Standard | Incremental Noise Level Increase Threshold[3] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No Project | With Project | Project Addition | | | Limit | Exceeded? |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 79.4 | 79.5 | 0.1 | No | 70 | 3.0 | No |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 78.7 | 78.8 | 0.1 | Yes | 65 | 1.0 | No |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 79.2 | 79.3 | 0.1 | Yes | 65 | 1.0 | No |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 79.4 | 79.5 | 0.1 | No | 70 | 3.0 | No |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 74.2 | 74.2 | 0.0 | No | 70 | 3.0 | No |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 70.0 | 70.1 | 0.1 | No | 70 | 3.0 | No |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 61.3 | 61.6 | 0.3 | No | 70 | n/a | No |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 81.6 | 82.3 | 0.7 | No | 70 | 3.0 | No |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 81.1 | 81.2 | 0.1 | No | 70 | 3.0 | No |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 81.1 | 81.2 | 0.1 | Yes | 65 | 1.0 | No |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 81.4 | 81.4 | 0.0 | No | 70 | 3.0 | No |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 80.4 | 80.4 | 0.0 | No | 70 | 3.0 | No |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 80.4 | 80.4 | 0.0 | No | 70 | 3.0 | No |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 72.0 | 72.0 | 0.0 | Yes | 65 | 1.0 | No |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 74.9 | 74.9 | 0.0 | No | 70 | 3.0 | No |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 76.7 | 76.7 | 0.0 | Yes | 65 | 1.0 | No |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 60.7 | 61.0 | 0.3 | Yes | 65 | 2.0 | No |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 68.7 | 68.8 | 0.1 | No | 70 | n/a | No |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 78.1 | 78.1 | 0.0 | No | 70 | 3.0 | No |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 78.1 | 78.1 | 0.0 | No | 70 | 3.0 | No |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 78.2 | 78.3 | 0.1 | No | 70 | 3.0 | No |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 78.3 | 78.5 | 0.2 | Yes | 65 | 1.0 | No |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 79.1 | 81.4 | 2.3 | Yes | 65 | 1.0 | Yes |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 79.6 | 81.6 | 2.0 | Yes | 65 | 1.0 | Yes |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 81.5 | 82.2 | 0.7 | No | 70 | 3.0 | No |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 82.2 | 82.2 | 0.0 | Yes | 65 | 1.0 | No |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 82.4 | 82.4 | 0.0 | No | 70 | 3.0 | No |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 81.4 | 81.5 | 0.1 | Yes | 65 | 1.0 | No |

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | | | Noise Sensitive Land Use? | Exterior Noise Standard | Incremental Noise Level Increase Threshold[3] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No Project | With Project | Project Addition | | | Limit | Exceeded? |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 82.4 | 82.4 | 0.0 | Yes | 65 | 1.0 | No |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 73.1 | 73.1 | 0.0 | No | 70 | 3.0 | No |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 75.2 | 75.3 | 0.1 | No | 70 | 3.0 | No |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-2)?

**TABLE 7-8: OPENING YEAR CUMULATIVE (2021) WITH PROJECT TRAFFIC NOISE INCREASES**

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | | | Noise Sensitive Land Use? | Exterior Noise Standard | Incremental Noise Level Increase Threshold[3] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No Project | With Project | Project Addition | | | Limit | Exceeded? |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 80.1 | 80.2 | 0.1 | No | 70 | 3.0 | No |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 79.5 | 79.7 | 0.2 | Yes | 65 | 1.0 | No |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 80.0 | 80.1 | 0.1 | Yes | 65 | 1.0 | No |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 80.1 | 80.3 | 0.2 | No | 70 | 3.0 | No |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 74.3 | 74.4 | 0.1 | No | 70 | 3.0 | No |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 70.2 | 70.2 | 0.0 | No | 70 | 3.0 | No |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 61.4 | 61.8 | 0.4 | No | 70 | n/a | No |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 82.7 | 83.2 | 0.5 | No | 70 | 3.0 | No |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 81.8 | 81.9 | 0.1 | No | 70 | 3.0 | No |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 81.9 | 82.0 | 0.1 | Yes | 65 | 1.0 | No |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 82.1 | 82.1 | 0.0 | No | 70 | 3.0 | No |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 81.0 | 81.0 | 0.0 | No | 70 | 3.0 | No |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 81.0 | 81.0 | 0.0 | No | 70 | 3.0 | No |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 72.2 | 72.2 | 0.0 | Yes | 65 | 1.0 | No |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 75.1 | 75.1 | 0.0 | No | 70 | 3.0 | No |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 77.0 | 77.0 | 0.0 | Yes | 65 | 1.0 | No |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 60.9 | 61.2 | 0.3 | Yes | 65 | 2.0 | No |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 68.9 | 69.0 | 0.1 | No | 70 | n/a | No |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 79.0 | 79.1 | 0.1 | No | 70 | 3.0 | No |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 79.0 | 79.1 | 0.1 | No | 70 | 3.0 | No |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 79.1 | 79.2 | 0.1 | No | 70 | 3.0 | No |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 79.2 | 79.4 | 0.2 | Yes | 65 | 1.0 | No |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 80.4 | 82.1 | 1.7 | Yes | 65 | 1.0 | Yes |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 80.8 | 82.4 | 1.6 | Yes | 65 | 1.0 | Yes |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 82.4 | 83.0 | 0.6 | No | 70 | 3.0 | No |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 82.8 | 82.8 | 0.0 | Yes | 65 | 1.0 | No |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 82.9 | 82.9 | 0.0 | No | 70 | 3.0 | No |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 82.0 | 82.0 | 0.0 | Yes | 65 | 1.0 | No |

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | | | Noise Sensitive Land Use? | Exterior Noise Standard | Incremental Noise Level Increase Threshold[3] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No Project | With Project | Project Addition | | | Limit | Exceeded? |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 82.9 | 82.9 | 0.0 | Yes | 65 | 1.0 | No |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 73.4 | 73.5 | 0.1 | No | 70 | 3.0 | No |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 78.8 | 78.8 | 0.0 | No | 70 | 3.0 | No |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-2)?

## TABLE 7-9: HORIZON YEAR (2040) WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | | | Noise Sensitive Land Use? | Exterior Noise Standard | Incremental Noise Level Increase Threshold[3] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No Project | With Project | Project Addition | | | Limit | Exceeded? |
| 1 | US Hwy. 395 | n/o Luna Rd. | Non-Sensitive | 83.2 | 83.2 | 0.0 | No | 70 | 3.0 | No |
| 2 | US Hwy. 395 | s/o Luna Rd. | Sensitive | 83.1 | 83.1 | 0.0 | Yes | 65 | 1.0 | No |
| 3 | US Hwy. 395 | s/o Bear Valley Rd. | Sensitive | 83.3 | 83.4 | 0.1 | Yes | 65 | 1.0 | No |
| 4 | US Hwy. 395 | s/o Eucalyptus St. | Non-Sensitive | 83.3 | 83.3 | 0.0 | No | 70 | 3.0 | No |
| 5 | Baldy Mesa Rd. | n/o Phelan Rd. | Non-Sensitive | 75.7 | 75.7 | 0.0 | No | 70 | 3.0 | No |
| 6 | Baldy Mesa Rd. | s/o Phelan Rd. | Non-Sensitive | 71.5 | 71.5 | 0.0 | No | 70 | 3.0 | No |
| 7 | Verbena Rd. | n/o Phelan Rd. | Non-Sensitive | 62.8 | 63.0 | 0.2 | No | 70 | n/a | No |
| 8 | US Hwy. 395 | s/o Yucca Terrace Dr. | Non-Sensitive | 83.4 | 83.9 | 0.5 | No | 70 | 3.0 | No |
| 9 | US Hwy. 395 | s/o Main St. | Non-Sensitive | 85.1 | 85.1 | 0.0 | No | 70 | 3.0 | No |
| 10 | US Hwy. 395 | s/o Poplar St. | Sensitive | 83.0 | 83.0 | 0.0 | Yes | 65 | 1.0 | No |
| 11 | US Hwy. 395 | s/o Joshua St. | Non-Sensitive | 82.9 | 82.9 | 0.0 | No | 70 | 3.0 | No |
| 12 | Escondido Av. | n/o Sultana St. | Non-Sensitive | 81.9 | 81.9 | 0.0 | No | 70 | 3.0 | No |
| 13 | Escondido Av. | s/o Sultana St. | Non-Sensitive | 81.9 | 81.9 | 0.0 | No | 70 | 3.0 | No |
| 14 | Topaz Av. | n/o Main St. | Sensitive | 73.5 | 73.5 | 0.0 | Yes | 65 | 1.0 | No |
| 15 | Luna Rd. | e/o US Hwy. 395 | Non-Sensitive | 76.4 | 76.4 | 0.0 | No | 70 | 3.0 | No |
| 16 | Bear Valley Rd. | e/o US Hwy. 395 | Sensitive | 78.6 | 78.7 | 0.1 | Yes | 65 | 1.0 | No |
| 17 | Eucalyptus St. | w/o US Hwy. 395 | Sensitive | 62.2 | 62.4 | 0.2 | Yes | 65 | 2.0 | No |
| 18 | Eucalyptus St. | e/o US Hwy. 395 | Non-Sensitive | 70.2 | 70.3 | 0.1 | No | 70 | 3.0 | No |
| 19 | Phelan Rd. | w/o Baldy Mesa Rd. | Non-Sensitive | 79.6 | 79.6 | 0.0 | No | 70 | 3.0 | No |
| 20 | Phelan Rd. | w/o Verbena Rd. | Non-Sensitive | 79.6 | 79.6 | 0.0 | No | 70 | 3.0 | No |
| 21 | Phelan Rd. | w/o Bellflower St. | Non-Sensitive | 79.7 | 79.8 | 0.1 | No | 70 | 3.0 | No |
| 22 | Phelan Rd. | e/o Dwy. 1 | Sensitive | 79.8 | 80.0 | 0.2 | Yes | 65 | 1.0 | No |
| 23 | Main St. | w/o Mesa Linda St. | Sensitive | 80.6 | 82.3 | 1.7 | Yes | 65 | 1.0 | Yes |
| 24 | Main St. | w/o Cataba Rd. | Sensitive | 81.1 | 82.6 | 1.5 | Yes | 65 | 1.0 | Yes |
| 25 | Main St. | e/o Key Point Av. | Non-Sensitive | 83.0 | 83.5 | 0.5 | No | 70 | 3.0 | No |
| 26 | Main St. | e/o Mariposa Rd. | Sensitive | 83.7 | 83.7 | 0.0 | Yes | 65 | 1.0 | No |
| 27 | Main St. | w/o Escondido Av. | Non-Sensitive | 83.9 | 83.9 | 0.0 | No | 70 | 3.0 | No |
| 28 | Main St. | e/o Escondido Av. | Sensitive | 82.9 | 83.0 | 0.1 | Yes | 65 | 1.0 | No |

| ID | Road | Segment | Receiving Land Use[1] | CNEL at Receiving Land Use (dBA)[2] | | | Noise Sensitive Land Use? | Exterior Noise Standard | Incremental Noise Level Increase Threshold[3] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No Project | With Project | Project Addition | | | Limit | Exceeded? |
| 29 | Main St. | e/o Topaz Av. | Sensitive | 83.9 | 83.9 | 0.0 | Yes | 65 | 1.0 | No |
| 30 | Sultana St. | e/o Escondido Av. | Non-Sensitive | 74.6 | 74.6 | 0.0 | No | 70 | 3.0 | No |
| 31 | Joshua St. | e/o US Hwy. 395 | Non-Sensitive | 79.2 | 79.2 | 0.0 | No | 70 | 3.0 | No |

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-2)?

## 7.5 OFF-SITE TRAFFIC NOISE MITIGATION

To reduce the *potentially significant* Project traffic noise level increases on the two study area roadway segments (Segment #23 and Segment #24) for Existing plus Project, Opening Year Cumulative and Horizon Year Project conditions, potential noise mitigation measures are identified in this analysis. Potential mitigation measures discussed below include rubberized asphalt hot mix pavement and off-site noise barriers for the existing non-conforming residential use 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. (19) 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. (2) According to research conducted by Caltrans (19) and the Canadian Ministry of Transportation and Highways (20) a 4 dBA reduction in tire/pavement noise is attainable using rubberized asphalt under typical operating conditions.

The effectiveness of reducing traffic noise levels is higher on roadways with low percentages of heavy trucks, since the heavy truck engine and exhaust noise is not affected by rubberized alternative pavement due to the truck engine and exhaust stack height above the pavement itself. (19) Per Caltrans guidance a truck stack height is modeled using a height of 11.5 feet above the road. (4) (21) With the primary off-site traffic noise source consisting of heavy trucks with a stack height of 11.5 feet off the ground, the tire/pavement noise reduction benefits associated rubberized asphalt will be primarily limited to autos.

While the off-site Project-related traffic noise level increases would theoretically be reduced with the 4 dBA reduction provided by rubberized asphalt, the reduction would not provide reliable benefits for the noise levels generated by heavy truck traffic. This is, as previously stated, due to the noise source height difference between automobiles and trucks. While rubberized asphalt will provide some noise reduction, this noise study recognizes that this is only effective for tire-on-pavement noise at higher speeds and would not reduce truck-related off-site traffic noise levels associated with truck engine and exhaust stacks to less than significant impacts. Since the use of rubberized asphalt would not lower the off-site traffic noise levels below a level of significance, rubberized asphalt is not proposed as mitigation for the Project and the off-site Project-related traffic noise level increases at adjacent land uses would remain *significant.*

### 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. (4) As previously discussed, Caltrans guidance in the Highway Design Manual, Section 1102.3(3), indicates that for design purposes, *the noise barrier should intercept the line of sight from the exhaust stack of a truck to the receptor*, and an 11.5-foot-high truck stack height is assumed to represent the truck engine and exhaust noise source. (21) Therefore, any exterior noise barriers at receiving noise sensitive land uses experiencing Project-related traffic noise level increases would need to be high enough and long enough to block the line-of-sight from the noise source (at 11.5 feet high per Caltrans) to the receiver (at 5 feet high per FHWA guidance) in order to provide a 5 dBA reduction per FHWA guidance. (21)

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. (4) 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.

### 7.5.3 SIGNIFICANT OFF-SITE TRAFFIC NOISE IMPACTS

Both rubberized asphalt and off-site noise barriers are considered as potential noise mitigation measures to reduce the *potentially significant* off-site traffic noise level increases shown on Tables 7-7 to 7-9. However, neither form of mitigation would eliminate the off-site traffic noise level increases at the adjacent land uses to the impacted roadway segments. Therefore, the Project-related off-site traffic noise level increases at adjacent noise-sensitive land are considered a *significant and unavoidable* impact.

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# 8 SENSITIVE RECEIVER LOCATIONS

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

To describe the potential off-site Project noise levels, six receiver locations in the vicinity of the Project site were identified. 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 10120 Fremontia Road, approximately 662 feet northwest 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, L1, to describe the existing ambient noise environment.

R2: Location R2 represents the existing noise sensitive residence at 10368 US-395 approximately 2,010 feet northeast 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, L2, to describe the existing ambient noise environment.

R3: Location R3 represents the existing West Main Villas apartments at 9800 Mesa Linda Street, approximately 2,165 feet southeast 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, L3, is used to describe the existing ambient noise environment.

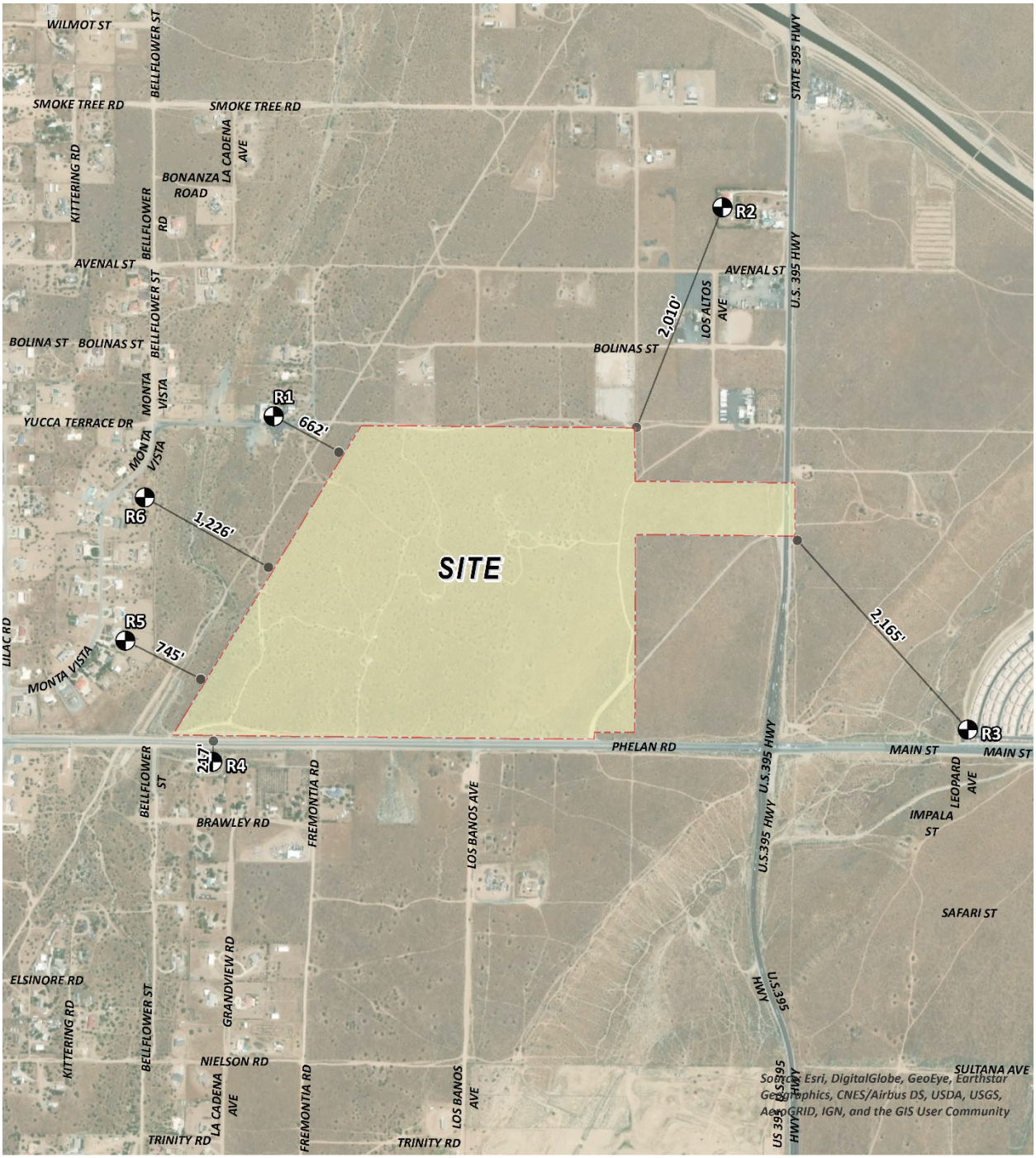
R4: Location R4 represents the existing noise sensitive residence at 11345 Phelan Road, approximately 217 feet south of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R4 is placed at the residential building

façade. A 24-hour noise measurement near this location, L4, is used to describe the existing ambient noise environment.

R5: Location R5 represents the existing noise sensitive residence at 9883 Monta Vista, approximately 745 feet west of the Project site. R5 is placed at the private outdoor living area (backyard) facing the Project site. A 24-hour noise measurement near this location, L5, is used to describe the existing ambient noise environment.

R6: Location R6 represents the existing noise sensitive residence at 9993 Monta Vista, approximately 1,226 feet west of the Project site. R5 is placed at the private outdoor living area (backyard) facing the Project site. A 24-hour noise measurement near this location, L6, is used to describe the existing ambient noise environment.

## EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS

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# 9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearby receiver locations, identified in Section 8, resulting from the operation of the proposed Hesperia Commerce Center II Project. Exhibit 9-A identifies the representative noise source locations used to assess the operational noise levels.

## 9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the expected typical of daytime and nighttime activities at the Project site. To present the potential worst-case noise conditions, this analysis assumes the Project would be operational 24 hours per day, seven days per week. Consistent with similar warehouse and light industrial uses, the Project business operations would primarily be conducted within the enclosed buildings, except for traffic movement, parking, as well as loading and unloading of trucks at designated loading bays. The on-site Project-related noise sources are expected to include: loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity.

## 9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity all operating continuously. These sources of noise activity will likely vary throughout the day.

### 9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precisions sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in "slow" mode to record noise levels in "A" weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (14)

## EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

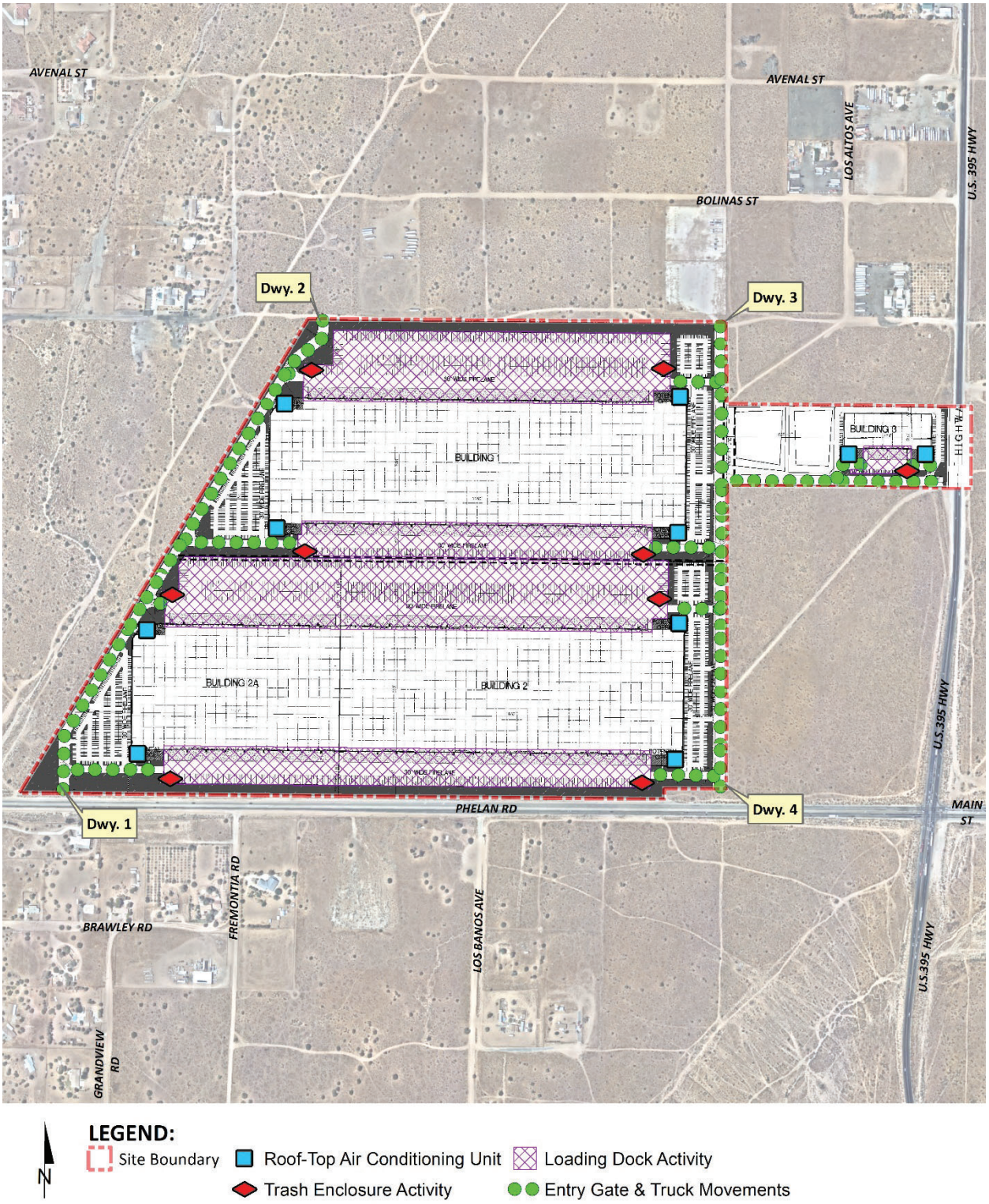

**TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS**

| Noise Source | Duration (hh:mm:ss) | Ref. Distance (Feet) | Noise Source Height (Feet) | Min./Hour[5] | | Reference Noise Level (dBA $L_{eq}$) | | Sound Power Level (dBA)[6] |
|---|---|---|---|---|---|---|---|---|
| | | | | Day | Night | @ Ref. Dist. | @ 50 Feet | |
| Loading Dock Activity[1] | 00:14:00 | 30' | 8' | 60 | 60 | 70.1 | 65.7 | 111.5 |
| Entry Gate & Truck Movements[2] | 00:15:00 | 20' | 8' | -[7] | -[7] | 64.0 | 58.0 | 89.7 |
| Roof-Top Air Conditioning Units[3] | 96:00:00 | 5' | 5' | 39 | 28 | 77.2 | 57.2 | 88.9 |
| Trash Enclosure Activity[4] | 00:00:32 | 8' | 5' | 5 | 5 | 72.7 | 56.8 | 89.0 |

[1] As measured by Urban Crossroads, Inc. at the Nature's Best Distribution Facility in the City of Chino.
[2] As measured by Urban Crossroads, Inc. at the Motivational Fulfillment & Logistics Services distribution facility in the City of Chino.
[3] Lennox SCA120 series 10-ton model packaged air conditioning unit.
[4] As measured by Urban Crossroads, Inc. at a commercial and office park trash enclosure in the City of Costa Mesa.
[5] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.
[6] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.
[7] Entry Gate & Truck Movements are calculate based on the number of events by time of day (See Table 9-2).

### 9.2.2 LOADING DOCK ACTIVITY

To describe the loading dock activities, a reference noise level measurement was collected to represent the truck activities at the Nature's Best distribution facility located at 16081 Fern Avenue in the City of Chino. The reference noise level measurement was taken in the center of the loading dock activity area and represents multiple concurrent noise sources resulting in a combined noise level of 65.7 dBA $L_{eq}$ at a uniform distance of 50 feet. Specifically, the reference noise level measurement represents one truck located approximately 30 feet from the noise level meter with another truck passing by to park roughly 20 feet away, both with their engines idling. Throughout the reference noise level measurement, a separate docked and running reefer truck was located approximately 50 feet east of the measurement location. Additional background noise sources included truck pass-by noise, truck drivers talking to each other next to docked trucks, and air brake release noise when trucks parked.

### 9.2.3 ENTRY GATE & TRUCK MOVEMENTS

An entry gate and truck movements reference noise level measurement were taken at the southern entry gate of the Motivational Fulfillment & Logistics Services distribution facility located at 6810 Bickmore Avenue in the City of Chino over a 15-minute period and represents multiple noise sources producing a reference noise level of 58.0 dBA $L_{eq}$ at 50 feet. The noise sources included at this measurement location account for the rattling and squeaking during normal opening and closing operations, the gate closure equipment, truck engines idling outside the entry gate, truck movements through the entry gate, and background truck court activities and forklift backup alarm noise.

Consistent with the *Hesperia Commerce Center II Traffic Impact Analysis*, the Project is expected to generate a total of approximately 11,898 trip-ends per day (actual vehicles) and includes 2,368 truck trip-ends per day. (18) This noise study relies on the actual Project trips (as opposed to the passenger car equivalents) to accurately account for the effect of individual truck trips on the study area roadway network. Using the estimated number of truck trips in combination with time of day vehicle splits, the number of entry gate and truck movements by driveway location were calculated. As shown on Table 9-2, this information is then used to calculate the entry gate and truck movements operational noise source activity based on the number of events by time of day.

**TABLE 9-2: ENTRY GATE & TRUCK MOVEMENTS BY LOCATION**

| Entry Gate & Truck Movement Location[1] | Total Project Truck Trips[2] | Trip Dist.[3] | | Truck Trips by Location[4] | Time of Day Vehicle Splits[5] | | | Truck Movements[6] | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | In | Out | | Day | Evening | Night | Day | Evening | Night |
| Driveway 1 | 2,368 | 20% | 5% | 296 | 63.02% | 10.79% | 26.19% | 187 | 32 | 78 |
| Driveway 2 | | 15% | 15% | 355 | 63.02% | 10.79% | 26.19% | 224 | 38 | 93 |
| Driveway 3 | | 25% | 30% | 651 | 63.02% | 10.79% | 26.19% | 410 | 70 | 170 |
| Driveway 4 | | 40% | 50% | 1066 | 63.02% | 10.79% | 26.19% | 672 | 115 | 279 |

[1] Driveway locations as shown on Exhibit 9-A.
[2] Total Project truck trips according to Table 4-2 of the Hesperia Commerce Center II TIA.
[3] Project truck trip distribution according to Figure 4-1 of the Hesperia Commerce Center II TIA.
[4] Calculated trip trucks per location represents the product of the total (inbound and outbound) project truck trips by and the trip distribution.
[5] Heavy truck time of day vehicle splits as shown on Table 6-3.
[6] Calculated time of day entry gate and truck movements by location.

### 9.2.4 ROOF-TOP AIR CONDITIONING UNITS

To assess the noise levels created by the roof-top air conditioning units, reference noise level measurements were collected from a Lennox SCA120 series 10-ton model packaged air conditioning unit. At 5 feet from the roof-top air conditioning unit, the exterior noise levels were measured at 77.2 dBA $L_{eq}$. At the uniform reference distance of 50 feet, the reference noise levels are 57.2 dBA $L_{eq}$.

Based on the typical operating conditions observed over a four-day measurement period, the roof-top air conditioning units are estimated to operate for and average 39 minutes per hour during the daytime hours, and 28 minutes per hour during the nighttime hours. These operating conditions reflect peak summer cooling requirements with measured temperatures approaching 96 degrees Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings. This reference noise level describes the expected roof-top air conditioning units located 5 feet above the roof for the planned air conditioning units at the Project site.

### 9.2.5 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure activity, Urban Crossroads collected a reference noise level measurement at an existing trash enclosure containing two dumpster bins. The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, trash dropping into the metal dumpster. The reference noise levels describe trash enclosure noise activities when trash is dropped into an empty metal dumpster, as would occur at the Project site. The measured reference noise level at the uniform 50-foot reference distance is 56.8 dBA $L_{eq}$ for the trash enclosure activity. The reference noise level describes the expected noise source activities associated with the trash enclosures for each of the Project buildings. Typical trash enclosure activities are estimated to occur for 5 minutes per hour.

## 9.3 CADNAA NOISE PREDICTION MODEL

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

Using the ISO 9613 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 protocol, the CadnaA noise prediction model relies on the reference sound power level (PWL) 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 (PWL) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish from intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment. The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.0 was used in the CadnaA noise analysis to account for hard site conditions. Appendix 9.1 includes the detailed noise model inputs.

## 9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, entry gate & truck movements, roof-top air conditioning units, and trash enclosure activity, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Tables 9-3 shows the Project

operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 50.0 to 53.9 dBA $L_{eq}$.

**TABLE 9-3: DAYTIME PROJECT OPERATIONAL NOISE LEVELS**

| Noise Source[1] | Operational Noise Levels by Receiver Location (dBA Leq) | | | | | |
|---|---|---|---|---|---|---|
| | R1 | R2 | R3 | R4 | R5 | R6 |
| Loading Dock Activity | 52.7 | 48.9 | 52.4 | 49.1 | 49.7 | 49.5 |
| Entry Gate & Truck Movements | 46.6 | 43.5 | 48.4 | 45.8 | 44.3 | 42.3 |
| Roof-Top Air Conditioning Units | 31.4 | 27.5 | 32.4 | 30.1 | 29.1 | 26.7 |
| Trash Enclosure Activity | 26.0 | 19.8 | 27.7 | 23.7 | 23.6 | 17.3 |
| **Total (All Noise Sources)** | **53.7** | **50.0** | **53.9** | **50.8** | **50.8** | **50.3** |

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

Table 9-4 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 49.4 to 53.1 dBA $L_{eq}$. The differences between the daytime and nighttime noise levels is largely related to the duration of noise activity (Table 9-1).

**TABLE 9-4: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS**

| Noise Source[1] | Operational Noise Levels by Receiver Location (dBA Leq) | | | | | |
|---|---|---|---|---|---|---|
| | R1 | R2 | R3 | R4 | R5 | R6 |
| Loading Dock Activity | 52.7 | 48.9 | 52.4 | 49.1 | 49.7 | 49.5 |
| Entry Gate & Truck Movements | 42.7 | 39.7 | 44.6 | 42.0 | 40.5 | 38.5 |
| Roof-Top Air Conditioning Units | 29.0 | 25.1 | 30.0 | 27.7 | 26.7 | 24.3 |
| Trash Enclosure Activity | 25.0 | 18.8 | 26.7 | 22.8 | 22.6 | 16.3 |
| **Total (All Noise Sources)** | **53.1** | **49.4** | **53.1** | **49.9** | **50.2** | **49.8** |

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

## 9.5 PROJECT OPERATIONAL NOISE LEVEL COMPLIANCE

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Hesperia exterior noise level standards at nearby noise-sensitive receiver locations. Table 9-5 shows the operational noise levels associated with Hesperia Commerce Center II Project will satisfy the City of Hesperia 60 dBA $L_{eq}$ daytime and 55 dBA $L_{eq}$ nighttime exterior noise level standards at all nearby receiver locations. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

**TABLE 9-5: OPERATIONAL NOISE LEVEL COMPLIANCE**

| Receiver Location[1] | Project Operational Noise Levels (dBA Leq)[2] | | Noise Level Standards (dBA Leq)[3] | | Noise Level Standards Exceeded?[4] | |
|---|---|---|---|---|---|---|
| | Daytime | Nighttime | Daytime | Nighttime | Daytime | Nighttime |
| R1 | 53.7 | 53.1 | 60 | 55 | No | No |
| R2 | 50.0 | 49.4 | 60 | 55 | No | No |
| R3 | 53.9 | 53.1 | 60 | 55 | No | No |
| R4 | 50.8 | 49.9 | 60 | 55 | No | No |
| R5 | 50.8 | 50.2 | 60 | 55 | No | No |
| R6 | 50.3 | 49.8 | 60 | 55 | No | No |

[1] See Exhibit 8-A for the receiver locations.
[2] Proposed Project operational noise levels as shown on Tables 9-3 and 9-4.
[3] Exterior noise level standards for residential land use, as shown on Table 3-1.
[4] Do the estimated Project operational noise source activities exceed the noise level standards?
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

## 9.6 PROJECT OPERATIONAL NOISE LEVEL INCREASES

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

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

Where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describe the Project noise level increases to the existing ambient noise environment. As indicated on Tables 9-6 and 9-7, the Project is not expected to generate a measurable daytime and nighttime operational noise level increase dBA $L_{eq}$ at the nearby receiver locations. Project-related operational noise level increases will satisfy the operational noise level increase significance criteria presented on Table 4-2. Therefore, the incremental Project operational noise level increase is considered *less than significant* at all receiver locations.

## 9.7 OPERATIONAL VIBRATION IMPACTS

The operation of the Project site will include heavy trucks moving on site to and from the loading dock areas. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. According to the FTA *Transit Noise and Vibration Impact Assessment Manual,* (8 p. 113) trucks rarely create vibration that exceeds 70 VdB or 0.004 PPV (in/sec) at 25 feet (unless there are bumps due to frequent potholes in the road). Trucks transiting on site will be travelling at very low speeds so it is expected that delivery truck vibration impacts will satisfy the City of Hesperia 0.2 PPV (in/sec) vibration threshold, and therefore, will be *less than significant*

**TABLE 9-6: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES**

| Receiver Location[1] | Total Project Operational Noise Level[2] | Measurement Location[3] | Reference Ambient Noise Levels[4] | Combined Project and Ambient[5] | Project Increase[6] | Noise Sensitive Land Use? | Increase Criteria[7] | Increase Criteria Exceeded?[7] |
|---|---|---|---|---|---|---|---|---|
| R1 | 53.7 | L1 | 54.7 | 57.2 | 2.5 | Yes | 5 | No |
| R2 | 50.0 | L2 | 58.8 | 59.3 | 0.5 | Yes | 3 | No |
| R3 | 53.9 | L3 | 59.1 | 60.2 | 1.1 | Yes | 3 | No |
| R4 | 50.8 | L4 | 70.6 | 70.6 | 0.0 | Yes | 1 | No |
| R5 | 50.8 | L5 | 52.8 | 54.9 | 2.1 | Yes | 5 | No |
| R6 | 50.3 | L6 | 50.4 | 53.4 | 3.0 | Yes | 5 | No |

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project daytime operational noise levels as shown on Table 9-3.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed daytime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-2.

## TABLE 9-7: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

| Receiver Location[1] | Total Project Operational Noise Level[2] | Measurement Location[3] | Reference Ambient Noise Levels[4] | Combined Project and Ambient[5] | Project Increase[6] | Noise Sensitive Land Use? | Increase Criteria[7] | Increase Criteria Exceeded?[7] |
|---|---|---|---|---|---|---|---|---|
| R1 | 53.1 | L1 | 54.9 | 57.1 | 2.2 | Yes | 5 | No |
| R2 | 49.4 | L2 | 58.9 | 59.4 | 0.5 | Yes | 3 | No |
| R3 | 53.1 | L3 | 59.2 | 60.2 | 1.0 | Yes | 3 | No |
| R4 | 49.9 | L4 | 71.6 | 71.6 | 0.0 | Yes | 1 | No |
| R5 | 50.2 | L5 | 54.1 | 55.6 | 1.5 | Yes | 5 | No |
| R6 | 49.8 | L6 | 51.5 | 53.8 | 2.3 | Yes | 5 | No |

[1] See Exhibit 8-A for the receiver locations.
[2] Total Project nighttime operational noise levels as shown on Table 9-3.
[3] Reference noise level measurement locations as shown on Exhibit 5-A.
[4] Observed nighttime ambient noise levels as shown on Table 5-1.
[5] Represents the combined ambient conditions plus the Project activities.
[6] The noise level increase expected with the addition of the proposed Project activities.
[7] Significance increase criteria as shown on Table 4-2.

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# 10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearest sensitive receiver locations previously described in Section 8. To prevent high levels of construction noise from impacting noise-sensitive land uses, City of Hesperia Municipal Code Section 16.20.125.E.3, states that construction activities are limited to the hours of 7:00 a.m. to 7:00 p.m. on any day and at any time on Sundays and federal holidays.

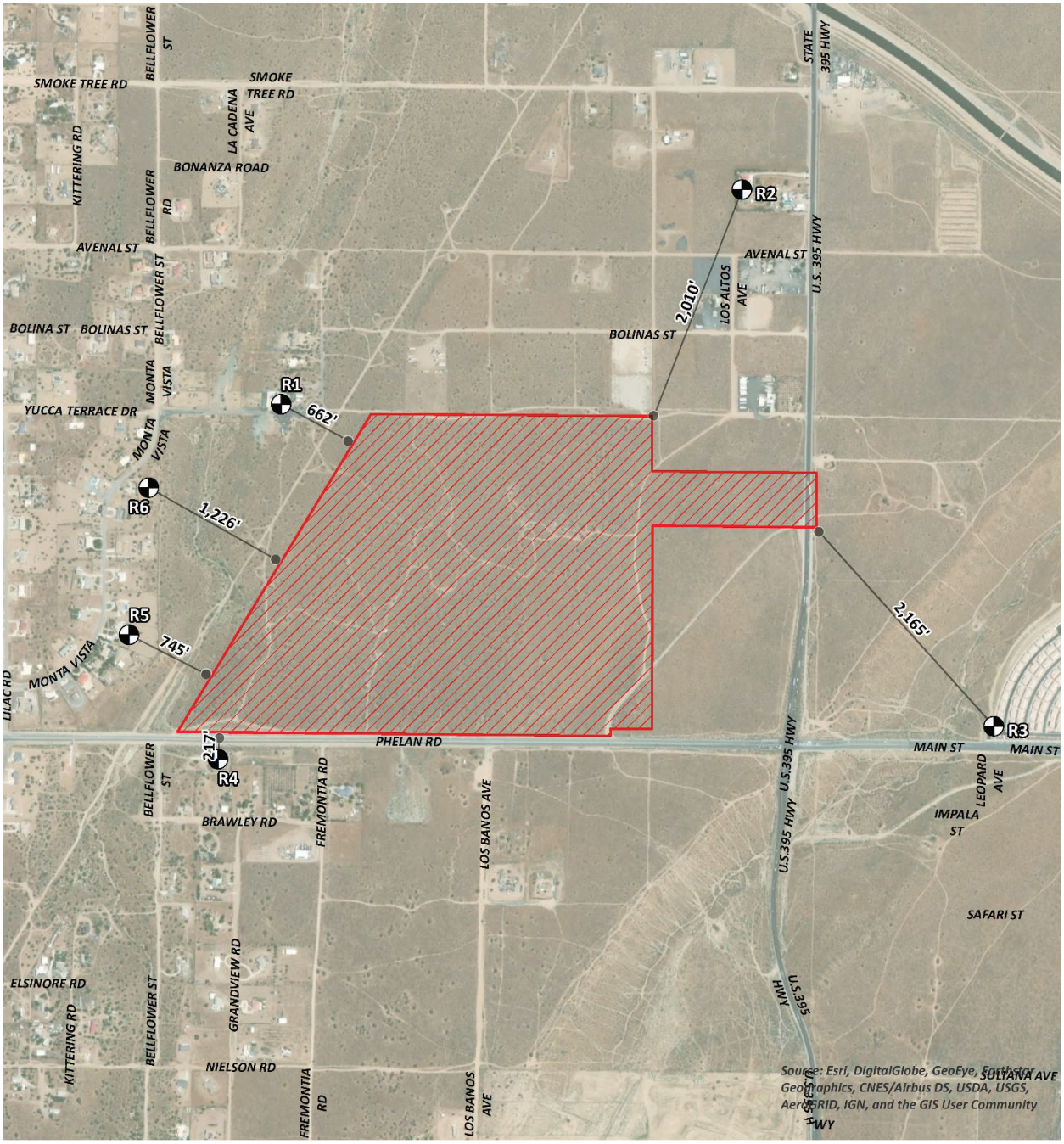
## 10.1 CONSTRUCTION NOISE LEVELS

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

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

This construction noise analysis was prepared using reference noise level measurements taken by Urban Crossroads, Inc. to describe the typical construction activity noise levels for each stage of Project construction. The construction reference noise level measurements represent a list of typical construction activity noise levels. Noise levels generated by heavy construction equipment can range from approximately 68 dBA to more than 80 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 80 dBA measured at 50 feet from the noise source to the receiver would be reduced to 74 dBA at 100 feet from the source to the receiver, and would be further reduced to 68 dBA at 200 feet from the source to the receiver.

## EXHIBIT 10-A: TYPICAL CONSTRUCTION NOISE SOURCE LOCATIONS




**LEGEND:**

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

## 10.2 Typical Construction Reference Noise Levels

To describe the Project typical construction noise levels, measurements were collected for similar activities at several construction sites. Table 10-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances of 30 feet and 50 feet, all construction noise level measurements presented on Table 10-1 have been adjusted for consistency to describe a uniform reference distance of 50 feet. Construction noise generated from concrete crushing activities and nighttime concrete pours are addressed separately, below.

**TABLE 10-1: TYPICAL CONSTRUCTION REFERENCE NOISE LEVELS**

| Construction Stage | Reference Construction Activity[1] | Reference Noise Level @ 50 Feet (dBA $L_{eq}$) | Highest Reference Noise Level (dBA $L_{eq}$) |
|---|---|---|---|
| Demolition | Demolition Activity | 67.9 | 71.9 |
| | Backhoe | 64.2 | |
| | Water Truck Pass-By & Backup Alarm | 71.9 | |
| Site Preparation | Scraper, Water Truck, & Dozer Activity | 75.3 | 75.3 |
| | Backhoe | 64.2 | |
| | Water Truck Pass-By & Backup Alarm | 71.9 | |
| Grading | Rough Grading Activities | 73.5 | 73.5 |
| | Water Truck Pass-By & Backup Alarm | 71.9 | |
| | Construction Vehicle Maintenance Activities | 67.5 | |
| Building Construction | Foundation Trenching | 68.2 | 71.6 |
| | Framing | 62.3 | |
| | Concrete Mixer Backup Alarms & Air Brakes | 71.6 | |
| Paving | Concrete Mixer Truck Movements | 71.2 | 71.2 |
| | Concrete Paver Activities | 65.6 | |
| | Concrete Mixer Pour & Paving Activities | 65.9 | |
| Architectural Coating | Air Compressors | 65.2 | 65.2 |
| | Generator | 64.9 | |
| | Crane | 62.3 | |

[1] Reference construction noise level measurements taken by Urban Crossroads, Inc.

## 10.3 Typical Construction Noise Analysis

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts with multiple pieces of equipment operating simultaneously at the nearest sensitive receiver locations were completed. This includes the additional noise attenuation provided by the existing intervening building structures and noise barriers located between the Project site and the nearest receiver locations.

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 10-2, the construction noise levels are expected to range from 60.6 to 73.6 dBA $L_{eq}$, and the highest construction levels are expected to range from 64.7 to 73.6 dBA $L_{eq}$ at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

**TABLE 10-2: TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY**

| Receiver Location[1] | Construction Noise Levels (dBA $L_{eq}$) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Demolition | Site Preparation | Grading | Building Construction | Paving | Architectural Coating | Highest Levels[2] |
| R1 | 68.7 | 72.1 | 70.3 | 68.4 | 68.0 | 68.0 | 72.1 |
| R2 | 61.3 | 64.7 | 62.9 | 61.0 | 60.6 | 60.6 | 64.7 |
| R3 | 70.2 | 73.6 | 71.8 | 69.9 | 69.5 | 69.5 | 73.6 |
| R4 | 67.3 | 70.7 | 68.9 | 67.0 | 66.6 | 66.6 | 70.7 |
| R5 | 66.4 | 69.8 | 68.0 | 66.1 | 65.7 | 65.7 | 69.8 |
| R6 | 62.7 | 66.1 | 64.3 | 62.4 | 62.0 | 62.0 | 66.1 |

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Construction noise level calculations based on distance from the project site boundaries (construction activity area) to nearby receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

## 10.4 TYPICAL CONSTRUCTION NOISE LEVEL COMPLIANCE

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

**TABLE 10-3: TYPICAL CONSTRUCTION NOISE LEVEL COMPLIANCE**

| Receiver Location[1] | Construction Noise Levels (dBA $L_{eq}$) | | |
|---|---|---|---|
| | Highest Construction Noise Levels[2] | Threshold[3] | Threshold Exceeded?[4] |
| R1 | 72.1 | 80 | No |
| R2 | 64.7 | 80 | No |
| R3 | 73.6 | 80 | No |
| R4 | 70.7 | 80 | No |
| R5 | 69.8 | 80 | No |
| R6 | 66.1 | 80 | No |

[1] Noise receiver locations are shown on Exhibit 10-A.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations as shown on Table 10-2.
[3] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

## 10.6 TYPICAL 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). (8) 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 10-4. 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 10-4: 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

Table 10-5 presents the expected typical construction equipment vibration levels at the nearest receiver locations. At distances ranging from 217 feet to 2,165 feet from typical Project construction activities (at the Project site boundary), construction vibration velocity levels are estimated at 0.003 PPV (in/sec). Based on the City of Hesperia vibration standards, the unmitigated Project construction vibration levels will satisfy the 0.2 PPV (in/sec) threshold at all the nearby sensitive receiver locations. Therefore, the vibration impacts due to Project construction are considered *less than significant*.

Further, vibration levels at the site of the closest sensitive receiver are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating simultaneously adjacent to the Project site perimeter. Moreover, construction at the Project site will be restricted to daytime hours consistent with City requirements thereby eliminating potential vibration impacts during the sensitive nighttime hours.

**TABLE 10-5: TYPICAL CONSTRUCTION EQUIPMENT VIBRATION LEVELS**

| Receiver[1] | Distance to Const. Activity (Feet) | Receiver PPV Levels (in/sec)[2] | | | | | Threshold PPV (in/sec)[3] | Threshold Exceeded?[4] |
|---|---|---|---|---|---|---|---|---|
| | | Small Bulldozer | Jack-hammer | Loaded Trucks | Large Bulldozer | Peak Vibration | | |
| R1 | 662' | 0.000 | 0.000 | 0.001 | 0.001 | 0.001 | 0.2 | No |
| R2 | 2,010' | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.2 | No |
| R3 | 2,165' | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.2 | No |
| R4 | 217' | 0.000 | 0.001 | 0.003 | 0.003 | 0.003 | 0.2 | No |
| R5 | 745' | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.2 | No |
| R6 | 1,226' | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.2 | No |

[1] Receiver locations are shown on Exhibit 10-A.
[2] Based on the Vibration Source Levels of Construction Equipment included on Table 10-4.
[3] City of Hesperia Municipal Code, Section 16.20.130 (Appendix 3.1)
[4] Does the vibration level exceed the maximum acceptable vibration threshold?

# 11 REFERENCES


1. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
2. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
3. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
4. **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.
5. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
6. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
7. **Occupational Safety and Health Administration.** *Standard 29 CRF, Part 1910.*
8. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
9. **Office of Planning and Research.** *State of California General Plan Guidelines.* October 2017.
10. **State of California.** *2016 California Green Building Standards Code.* January 2017.
11. **City of Hesperia.** *General Plan Noise Element.* 2010.
12. —. *Municipal Code, Section 16.20.*
13. **California Court of Appeal.** *King and Gardiner Farms, LLC v. County of Kern (2020) .* 45 Cal.App.5th 814, 893,
14. **American National Standards Institute (ANSI).** *Specification for Sound Level Meters ANSI S1.4-2014/IEC 61672-1:2013.*
15. **U.S. Department of Transportation, Federal Highway Administration.** *FHWA Highway Traffic Noise Prediction Model.* December 1978. FHWA-RD-77-108.
16. **California Department of Transportation Environmental Program, Office of Environmental Engineering.** *Use of California Vehicle Noise Reference Energy Mean Emission Levels (Calveno REMELs) in FHWA Highway Traffic Noise Prediction.* September 1995. TAN 95-03.
17. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
18. **Urban Crossroads, Inc.** *Hesperia Commerce Center II Traffic Impact Analysis.* July 2020.
19. **California Department of Transportation Environmental Program.** *I-80 Davis OGAC Pavement Noise Study.* September 2001.
20. **Canadian Ministry of Transportation and Highways, Highway Environment Branch.** *Open-Graded Asphalt 'Quiet Pavement' - Assessment of Traffic Noise Reduction Performance.* November 1995.
21. **California Department of Transportation.** *Highway Design Manual, Chapter 1100 Highway Traffic Noise Abatement.* November 2017.

# 12 CERTIFICATION

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

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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 Orange • February, 2011
FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013

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# APPENDIX 3.1:

# CITY OF HESPERIA MUNICIPAL CODE

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16.20.125 - Noise.

A. Noise Measurement. Noise will be measured with a sound level meter, which meets the standards of the American National Standards Institute (ANSI Section S1.4-1979, Type 1 or Type 2). Noise levels shall be measured using the "A" weighted sound pressure level scale in decibels (ref. pressure = 20 micro-newtons per meter squared). The unit of measure shall be designated as dB(A). The building official shall be the noise control officer.

B. Noise Standards.

1. The following table describes the noise standard for emanations from any source, as it affects adjacent properties:

## NOISE STANDARDS

| Affected Land Use (Receiving Noise) | Maximum Noise Level | Time Period |
|---|---|---|
| A-1, A-2, R-1, R-3 and RR Zone Districts | 55 dB(A) | 10:00 p.m. - 7:00 a.m. |
| A-1, A-2, R-1, R-3 and RR Zone Districts | 60 dB(A)* | 7:00 a.m. - 10:00 p.m. |
| C-1, C-2, C-3, C-4, C-R, AP, and P-I Zone Districts | 65 dB(A)* | Anytime |
| I-1 and I-2 Zone Districts | 70 dB(A)* | Anytime |

* Due to wind noise, the maximum permissible noise level may be adjusted so that it is no greater than five dB(A) above the ambient noise level.

2. No person shall operate or cause to be operated any source of sound at any location or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level, when measured on any other property, either incorporated or unincorporated, to exceed:

a. The noise standard for that receiving land use (as specified in subsection (B)(1) of this section) for a cumulative period of more than thirty (30) minutes in any hour; or

b. The noise standard plus five dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or

c. The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour; or

d. The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one minute in any hour; or

e. The noise standard plus twenty (20) dB(A) for any period of time.

C. If the measured ambient level exceeds any of the first four noise limit categories above, the allowable noise exposure standard shall be increased to reflect the ambient noise level. If the

ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under this category shall be increased to reflect the maximum ambient noise level.

D. If the alleged offense consists entirely of impact noise or simple tone noise, each of the noise levels in subsection (B)(1) of this section shall be reduced by five dB(A).

E. Exempt Noises. The following sources of noise are exempt:

1. Motor vehicles not under the control of the industrial use;

2. Emergency equipment, vehicles and devices;

3. Temporary construction, repair, or demolition activities between seven a.m. and seven p.m. except Sundays and federal holidays.

(Ord. 2002-07 Exh. A, 2002; Amended during 1997 codification; Ord. 75 § 2 (part), 1990; SBCC § 87.1305)

16.20.130 - Vibration.

A. Vibration Standard. No ground vibration shall be allowed which can be felt without the aid of instruments at or beyond the lot line; nor will any vibration be permitted which produces a particle velocity greater than or equal to 0.2 inches per second measured at or beyond the lot line.

B. Vibration Measurement. Vibration velocity shall be measured with a seismograph or other instrument capable of measuring and recording displacement and frequency, particle velocity or acceleration. Readings are to be made at points of maximum vibration along any lot line next to a residential or commercial district or a community industrial lot.

C. Exempt Vibrations. The following sources of vibration are not regulated by this code:

1. Motor vehicles not under the control of the industrial use;

2. Temporary construction, maintenance or demolition activities between seven a.m. and seven p.m. except Sundays and federal holidays.

(SBCC § 87.1310)

# APPENDIX 5.1:

# STUDY AREA PHOTOS

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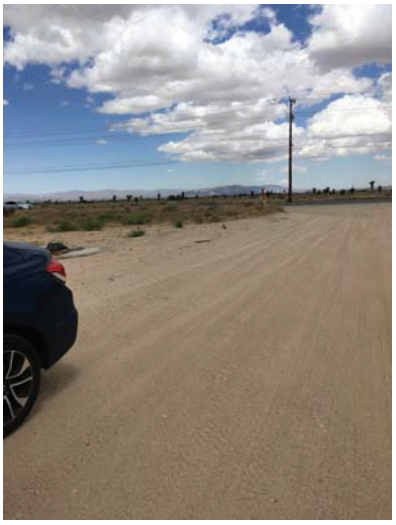
# JN: 12780 Study Area Photos

L1_E
34, 26' 2.060000", 117, 24' 47.690000"

L1_N
34, 26' 2.150000", 117, 24' 47.770000"

L1_S
34, 26' 1.910000", 117, 24' 47.690000"

L1_W
34, 26' 1.860000", 117, 24' 47.690000"

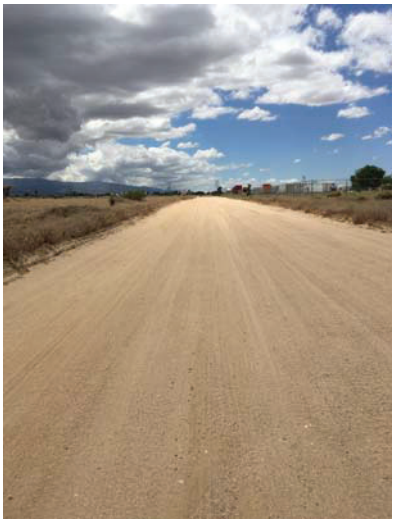


L2_E
34, 26' 9.030000", 117, 24' 0.360000"

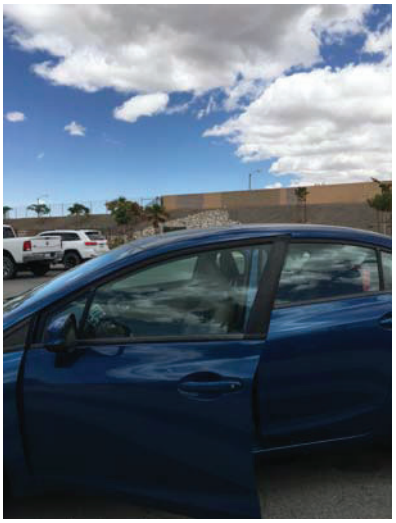
L2_N
34, 26' 8.980000", 117, 24' 0.360000"

# JN: 12780 Study Area Photos

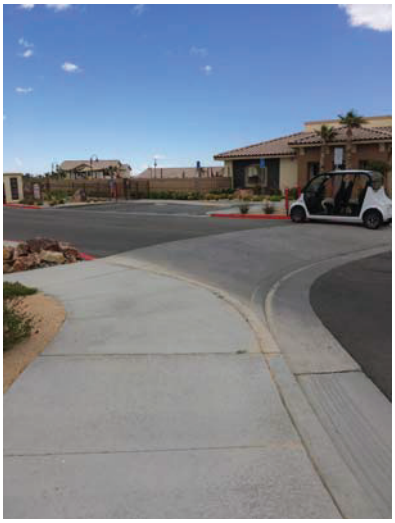
L2_S
34, 26' 9.030000", 117, 24' 0.440000"



L2_W
34, 26' 9.050000", 117, 24' 0.440000"



L3_E
34, 25' 39.720000", 117, 23' 27.160000"



L3_N
34, 25' 39.940000", 117, 23' 27.490000"

L3_S
34, 25' 39.730000", 117, 23' 26.910000"

L3_W
34, 25' 39.710000", 117, 23' 26.830000"

# JN: 12780 Study Area Photos

L4_E
34, 25' 35.600000", 117, 24' 44.420000"

L4_N
34, 25' 35.640000", 117, 24' 44.500000"

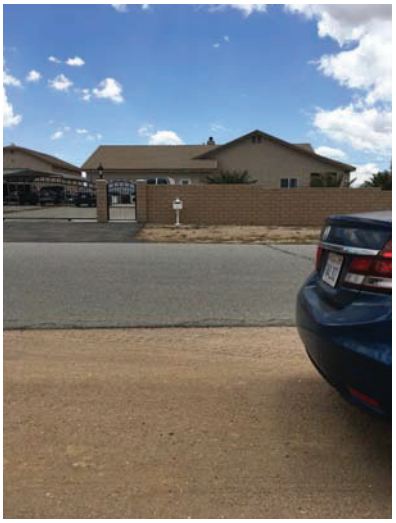
L4_S
34, 25' 35.570000", 117, 24' 44.420000"

L4_W
34, 25' 35.590000", 117, 24' 44.450000"

L5_E
34, 25' 40.350000", 117, 25' 13.830000"

L5_N
34, 25' 40.350000", 117, 25' 13.830000"

# JN: 12780 Study Area Photos



L5_S
34, 25' 40.520000", 117, 25' 13.940000"

L5_W
34, 25' 40.520000", 117, 25' 13.940000"

L6_E
34, 25' 58.600000", 117, 25' 2.410000"

L6_N
34, 26' 3.490000", 117, 24' 59.830000"

L6_S
34, 25' 58.530000", 117, 25' 2.270000"

L6_W
34, 25' 58.530000", 117, 25' 2.190000"

# APPENDIX 5.2:

# NOISE LEVEL MEASUREMENT WORKSHEETS

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# 24-Hour Noise Level Measurement Summary

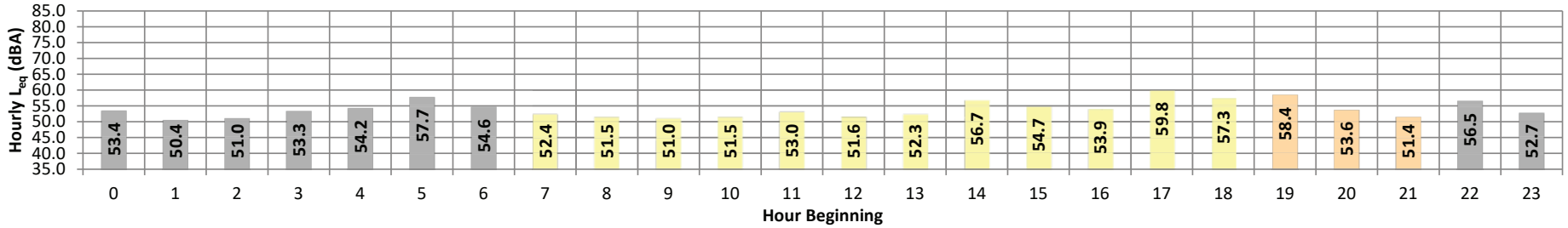
*Date:* Wednesday, May 20, 2020
*Project:* Hesperia Commerce Center II

*Location:* L1 - Located northwest of the Project site on Yucca Terrace Drive near existing single-family residential home at 10120 Fremontia Road.

*Meter:* Piccolo I

*JN:* 12780
*Analyst:* P. Mara

***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 | 53.4 | 65.6 | 44.7 | 61.0 | 60.0 | 60.0 | 59.0 | 52.0 | 50.0 | 47.0 | 46.0 | 46.0 | 53.4 | 10.0 | 63.4 |
| | 1 | 50.4 | 68.7 | 44.8 | 54.0 | 53.0 | 52.0 | 52.0 | 50.0 | 49.0 | 47.0 | 46.0 | 46.0 | 50.4 | 10.0 | 60.4 |
| | 2 | 51.0 | 59.3 | 47.0 | 56.0 | 55.0 | 53.0 | 53.0 | 51.0 | 50.0 | 48.0 | 48.0 | 47.0 | 51.0 | 10.0 | 61.0 |
| | 3 | 53.3 | 66.1 | 48.2 | 59.0 | 58.0 | 56.0 | 56.0 | 53.0 | 52.0 | 50.0 | 49.0 | 49.0 | 53.3 | 10.0 | 63.3 |
| | 4 | 54.2 | 62.8 | 50.7 | 58.0 | 58.0 | 56.0 | 56.0 | 54.0 | 53.0 | 52.0 | 51.0 | 51.0 | 54.2 | 10.0 | 64.2 |
| | 5 | 57.7 | 82.9 | 49.6 | 68.0 | 60.0 | 57.0 | 56.0 | 55.0 | 54.0 | 52.0 | 51.0 | 50.0 | 57.7 | 10.0 | 67.7 |
| | 6 | 54.6 | 64.8 | 49.3 | 59.0 | 59.0 | 57.0 | 57.0 | 55.0 | 53.0 | 51.0 | 50.0 | 50.0 | 54.6 | 10.0 | 64.6 |
| Day | 7 | 52.4 | 66.7 | 44.9 | 60.0 | 58.0 | 57.0 | 56.0 | 52.0 | 50.0 | 47.0 | 46.0 | 46.0 | 52.4 | 0.0 | 52.4 |
| | 8 | 51.5 | 70.8 | 45.4 | 57.0 | 55.0 | 54.0 | 53.0 | 51.0 | 49.0 | 47.0 | 46.0 | 46.0 | 51.5 | 0.0 | 51.5 |
| | 9 | 51.0 | 71.0 | 45.2 | 59.0 | 57.0 | 54.0 | 52.0 | 49.0 | 48.0 | 46.0 | 46.0 | 45.0 | 51.0 | 0.0 | 51.0 |
| | 10 | 51.5 | 74.8 | 45.4 | 59.0 | 58.0 | 55.0 | 54.0 | 50.0 | 48.0 | 47.0 | 46.0 | 46.0 | 51.5 | 0.0 | 51.5 |
| | 11 | 53.0 | 73.8 | 45.9 | 64.0 | 60.0 | 56.0 | 54.0 | 51.0 | 49.0 | 48.0 | 47.0 | 46.0 | 53.0 | 0.0 | 53.0 |
| | 12 | 51.6 | 66.6 | 46.6 | 60.0 | 58.0 | 55.0 | 53.0 | 51.0 | 49.0 | 48.0 | 48.0 | 47.0 | 51.6 | 0.0 | 51.6 |
| | 13 | 52.3 | 67.2 | 46.3 | 60.0 | 59.0 | 56.0 | 54.0 | 52.0 | 50.0 | 48.0 | 48.0 | 47.0 | 52.3 | 0.0 | 52.3 |
| | 14 | 56.7 | 75.5 | 47.4 | 67.0 | 65.0 | 61.0 | 59.0 | 54.0 | 51.0 | 49.0 | 49.0 | 48.0 | 56.7 | 0.0 | 56.7 |
| | 15 | 54.7 | 73.3 | 48.2 | 64.0 | 62.0 | 59.0 | 57.0 | 53.0 | 51.0 | 50.0 | 49.0 | 49.0 | 54.7 | 0.0 | 54.7 |
| | 16 | 53.9 | 70.9 | 47.0 | 65.0 | 62.0 | 58.0 | 56.0 | 52.0 | 50.0 | 48.0 | 48.0 | 47.0 | 53.9 | 0.0 | 53.9 |
| | 17 | 59.8 | 81.6 | 45.7 | 73.0 | 67.0 | 61.0 | 59.0 | 54.0 | 50.0 | 48.0 | 47.0 | 46.0 | 59.8 | 0.0 | 59.8 |
| | 18 | 57.3 | 78.9 | 45.4 | 70.0 | 65.0 | 60.0 | 57.0 | 52.0 | 50.0 | 48.0 | 47.0 | 46.0 | 57.3 | 0.0 | 57.3 |
| Evening | 19 | 58.4 | 84.1 | 47.4 | 62.0 | 59.0 | 56.0 | 56.0 | 53.0 | 52.0 | 49.0 | 49.0 | 48.0 | 58.4 | 5.0 | 63.4 |
| | 20 | 53.6 | 64.9 | 47.4 | 62.0 | 60.0 | 57.0 | 56.0 | 53.0 | 51.0 | 49.0 | 49.0 | 48.0 | 53.6 | 5.0 | 58.6 |
| | 21 | 51.4 | 65.4 | 46.0 | 56.0 | 55.0 | 54.0 | 53.0 | 52.0 | 50.0 | 48.0 | 48.0 | 47.0 | 51.4 | 5.0 | 56.4 |
| Night | 22 | 56.5 | 83.0 | 46.7 | 59.0 | 58.0 | 56.0 | 55.0 | 53.0 | 51.0 | 49.0 | 48.0 | 47.0 | 56.5 | 10.0 | 66.5 |
| | 23 | 52.7 | 64.7 | 45.6 | 60.0 | 59.0 | 56.0 | 55.0 | 52.0 | 51.0 | 48.0 | 47.0 | 46.0 | 52.7 | 10.0 | 62.7 |

| Timeframe | Hour | $L_{eq}$ | $L_{max}$ | $L_{min}$ | L1% | L2% | L5% | L8% | L25% | L50% | L90% | L95% | L99% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | Min | 51.0 | 66.6 | 44.9 | 57.0 | 55.0 | 54.0 | 52.0 | 49.0 | 48.0 | 46.0 | 46.0 | 45.0 |
| | Max | 59.8 | 81.6 | 48.2 | 73.0 | 67.0 | 61.0 | 59.0 | 54.0 | 51.0 | 50.0 | 49.0 | 49.0 |
| Energy Average | | 54.8 | Average: | | 63.2 | 60.5 | 57.2 | 55.3 | 51.8 | 49.6 | 47.8 | 47.3 | 46.6 |
| Evening | Min | 51.4 | 64.9 | 46.0 | 56.0 | 55.0 | 54.0 | 53.0 | 52.0 | 50.0 | 48.0 | 48.0 | 47.0 |
| | Max | 58.4 | 84.1 | 47.4 | 62.0 | 60.0 | 57.0 | 56.0 | 53.0 | 52.0 | 49.0 | 49.0 | 48.0 |
| Energy Average | | 55.5 | Average: | | 60.0 | 58.0 | 55.7 | 55.0 | 52.7 | 51.0 | 48.7 | 48.7 | 47.7 |
| Night | Min | 50.4 | 59.3 | 44.7 | 54.0 | 53.0 | 52.0 | 52.0 | 50.0 | 49.0 | 47.0 | 46.0 | 46.0 |
| | Max | 57.7 | 83.0 | 50.7 | 68.0 | 60.0 | 60.0 | 59.0 | 55.0 | 54.0 | 52.0 | 51.0 | 51.0 |
| Energy Average | | 54.3 | Average: | | 59.3 | 57.8 | 55.9 | 55.4 | 52.8 | 51.4 | 49.3 | 48.4 | 48.0 |

***$L_{eq}$ (dBA)***

| 24-Hour | Daytime | Nighttime |
|---|---|---|
| **54.7** | **54.9** | **54.3** |

***24-Hour CNEL (dBA)***

**61.2**

# 24-Hour Noise Level Measurement Summary

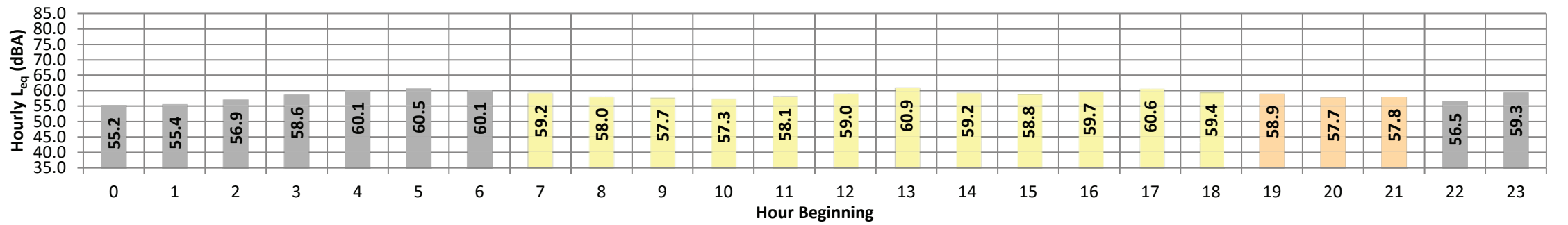
*Date:* Wednesday, May 20, 2020
*Project:* Hesperia Commerce Center II

*Location:* L2 - Located northeast of the Project site on Bolinas Street near existing Vacant Land.

*Meter:* Piccolo I

*JN:* 12780
*Analyst:* P. Mara

***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 | 55.2 | 73.8 | 36.7 | 67.0 | 65.0 | 61.0 | 59.0 | 52.0 | 46.0 | 39.0 | 39.0 | 38.0 | 55.2 | 10.0 | 65.2 |
| | 1 | 55.4 | 76.6 | 38.9 | 67.0 | 64.0 | 61.0 | 58.0 | 53.0 | 47.0 | 40.0 | 40.0 | 39.0 | 55.4 | 10.0 | 65.4 |
| | 2 | 56.9 | 78.3 | 39.0 | 67.0 | 65.0 | 62.0 | 60.0 | 56.0 | 51.0 | 42.0 | 41.0 | 39.0 | 56.9 | 10.0 | 66.9 |
| | 3 | 58.6 | 75.0 | 39.1 | 67.0 | 66.0 | 64.0 | 62.0 | 58.0 | 55.0 | 46.0 | 43.0 | 41.0 | 58.6 | 10.0 | 68.6 |
| | 4 | 60.1 | 79.6 | 44.4 | 68.0 | 67.0 | 65.0 | 63.0 | 60.0 | 57.0 | 50.0 | 48.0 | 46.0 | 60.1 | 10.0 | 70.1 |
| | 5 | 60.5 | 81.6 | 42.1 | 69.0 | 68.0 | 65.0 | 64.0 | 60.0 | 57.0 | 49.0 | 46.0 | 43.0 | 60.5 | 10.0 | 70.5 |
| | 6 | 60.1 | 74.0 | 39.0 | 69.0 | 68.0 | 65.0 | 64.0 | 60.0 | 57.0 | 47.0 | 44.0 | 40.0 | 60.1 | 10.0 | 70.1 |
| Day | 7 | 59.2 | 77.0 | 39.0 | 69.0 | 67.0 | 64.0 | 63.0 | 58.0 | 55.0 | 46.0 | 44.0 | 41.0 | 59.2 | 0.0 | 59.2 |
| | 8 | 58.0 | 77.6 | 36.1 | 67.0 | 66.0 | 64.0 | 62.0 | 57.0 | 53.0 | 44.0 | 42.0 | 39.0 | 58.0 | 0.0 | 58.0 |
| | 9 | 57.7 | 75.2 | 38.9 | 66.0 | 65.0 | 63.0 | 62.0 | 57.0 | 54.0 | 46.0 | 43.0 | 40.0 | 57.7 | 0.0 | 57.7 |
| | 10 | 57.3 | 74.9 | 36.1 | 66.0 | 65.0 | 63.0 | 61.0 | 57.0 | 53.0 | 43.0 | 41.0 | 38.0 | 57.3 | 0.0 | 57.3 |
| | 11 | 58.1 | 78.0 | 36.1 | 67.0 | 66.0 | 63.0 | 62.0 | 57.0 | 53.0 | 43.0 | 41.0 | 39.0 | 58.1 | 0.0 | 58.1 |
| | 12 | 59.0 | 81.2 | 37.9 | 68.0 | 66.0 | 64.0 | 62.0 | 58.0 | 54.0 | 45.0 | 43.0 | 39.0 | 59.0 | 0.0 | 59.0 |
| | 13 | 60.9 | 84.2 | 37.6 | 70.0 | 67.0 | 64.0 | 63.0 | 59.0 | 55.0 | 47.0 | 44.0 | 40.0 | 60.9 | 0.0 | 60.9 |
| | 14 | 59.2 | 84.9 | 41.2 | 68.0 | 66.0 | 63.0 | 62.0 | 58.0 | 55.0 | 48.0 | 46.0 | 43.0 | 59.2 | 0.0 | 59.2 |
| | 15 | 58.8 | 76.7 | 43.5 | 69.0 | 66.0 | 63.0 | 62.0 | 58.0 | 55.0 | 48.0 | 47.0 | 45.0 | 58.8 | 0.0 | 58.8 |
| | 16 | 59.7 | 81.1 | 41.9 | 69.0 | 67.0 | 64.0 | 63.0 | 58.0 | 55.0 | 48.0 | 46.0 | 44.0 | 59.7 | 0.0 | 59.7 |
| | 17 | 60.6 | 84.7 | 42.9 | 70.0 | 68.0 | 65.0 | 63.0 | 59.0 | 56.0 | 49.0 | 47.0 | 45.0 | 60.6 | 0.0 | 60.6 |
| | 18 | 59.4 | 77.5 | 44.5 | 68.0 | 66.0 | 64.0 | 63.0 | 59.0 | 56.0 | 49.0 | 48.0 | 46.0 | 59.4 | 0.0 | 59.4 |
| Evening | 19 | 58.9 | 79.7 | 44.3 | 68.0 | 66.0 | 64.0 | 62.0 | 58.0 | 55.0 | 48.0 | 47.0 | 46.0 | 58.9 | 5.0 | 63.9 |
| | 20 | 57.7 | 74.6 | 45.0 | 67.0 | 65.0 | 63.0 | 62.0 | 57.0 | 53.5 | 48.0 | 47.0 | 46.0 | 57.7 | 5.0 | 62.7 |
| | 21 | 57.8 | 79.2 | 43.4 | 68.0 | 66.0 | 63.0 | 61.0 | 56.0 | 52.0 | 46.0 | 45.0 | 44.0 | 57.8 | 5.0 | 62.8 |
| Night | 22 | 56.5 | 73.2 | 42.9 | 66.0 | 65.0 | 62.0 | 60.0 | 55.0 | 51.0 | 45.0 | 45.0 | 44.0 | 56.5 | 10.0 | 66.5 |
| | 23 | 59.3 | 81.3 | 43.0 | 69.0 | 66.0 | 64.0 | 62.0 | 55.0 | 50.0 | 45.0 | 45.0 | 43.0 | 59.3 | 10.0 | 69.3 |

| Timeframe | Hour | $L_{eq}$ | $L_{max}$ | $L_{min}$ | L1% | L2% | L5% | L8% | L25% | L50% | L90% | L95% | L99% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | Min | 57.3 | 74.9 | 36.1 | 66.0 | 65.0 | 63.0 | 61.0 | 57.0 | 53.0 | 43.0 | 41.0 | 38.0 |
| | Max | 60.9 | 84.9 | 44.5 | 70.0 | 68.0 | 65.0 | 63.0 | 59.0 | 56.0 | 49.0 | 48.0 | 46.0 |
| Energy Average | | 59.1 | Average: | | 68.1 | 66.3 | 63.7 | 62.3 | 57.9 | 54.5 | 46.3 | 44.3 | 41.6 |
| Evening | Min | 57.7 | 74.6 | 43.4 | 67.0 | 65.0 | 63.0 | 61.0 | 56.0 | 52.0 | 46.0 | 45.0 | 44.0 |
| | Max | 58.9 | 79.7 | 45.0 | 68.0 | 66.0 | 64.0 | 62.0 | 58.0 | 55.0 | 48.0 | 47.0 | 46.0 |
| Energy Average | | 58.2 | Average: | | 67.7 | 65.7 | 63.3 | 61.7 | 57.0 | 53.5 | 47.3 | 46.3 | 45.3 |
| Night | Min | 55.2 | 73.2 | 36.7 | 66.0 | 64.0 | 61.0 | 58.0 | 52.0 | 46.0 | 39.0 | 39.0 | 38.0 |
| | Max | 60.5 | 81.6 | 44.4 | 69.0 | 68.0 | 65.0 | 64.0 | 60.0 | 57.0 | 50.0 | 48.0 | 46.0 |
| Energy Average | | 58.5 | Average: | | 67.7 | 66.0 | 63.2 | 61.3 | 56.6 | 52.3 | 44.8 | 43.4 | 41.4 |

***$L_{eq}$ (dBA)***

| 24-Hour | Daytime | Nighttime |
|---|---|---|
| 58.8 | 58.9 | 58.5 |

***24-Hour CNEL (dBA)***

**65.2**

# 24-Hour Noise Level Measurement Summary

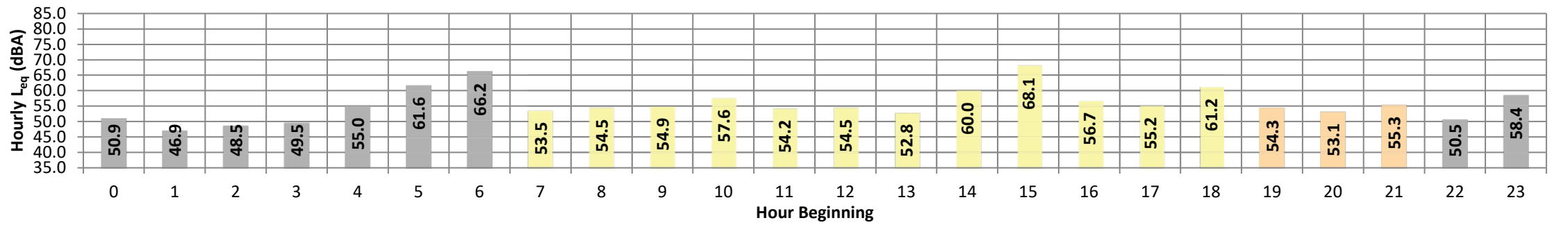
*Date:* Wednesday, May 20, 2020
*Project:* Hesperia Commerce Center II

*Location:* L3 - Located east of the Project site on Mesa Linda Street near the West Main Villas multi-family homes.

*Meter:* Piccolo I

*JN:* 12780
*Analyst:* P. Mara

***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 | 50.9 | 79.0 | 40.5 | 59.0 | 56.0 | 52.0 | 50.0 | 47.0 | 45.0 | 42.0 | 40.0 | 40.0 | 50.9 | 10.0 | 60.9 |
| | 1 | 46.9 | 66.8 | 39.1 | 55.0 | 52.0 | 49.0 | 48.0 | 46.0 | 44.0 | 41.0 | 40.0 | 40.0 | 46.9 | 10.0 | 56.9 |
| | 2 | 48.5 | 68.2 | 41.9 | 58.0 | 55.0 | 51.0 | 50.0 | 47.0 | 46.0 | 43.0 | 43.0 | 42.0 | 48.5 | 10.0 | 58.5 |
| | 3 | 49.5 | 67.8 | 42.9 | 58.0 | 55.0 | 52.0 | 51.0 | 49.0 | 47.0 | 44.0 | 44.0 | 43.0 | 49.5 | 10.0 | 59.5 |
| | 4 | 55.0 | 78.9 | 44.8 | 65.0 | 63.0 | 58.0 | 56.0 | 51.0 | 49.0 | 47.0 | 46.0 | 45.0 | 55.0 | 10.0 | 65.0 |
| | 5 | 61.6 | 91.1 | 44.3 | 68.0 | 64.0 | 58.0 | 56.0 | 52.0 | 49.0 | 47.0 | 46.0 | 45.0 | 61.6 | 10.0 | 71.6 |
| | 6 | 66.2 | 96.7 | 42.1 | 66.0 | 63.0 | 58.0 | 56.0 | 52.0 | 50.0 | 46.0 | 44.0 | 42.0 | 66.2 | 10.0 | 76.2 |
| Day | 7 | 53.5 | 71.3 | 40.9 | 66.0 | 63.0 | 59.0 | 56.0 | 50.0 | 47.0 | 43.0 | 42.0 | 42.0 | 53.5 | 0.0 | 53.5 |
| | 8 | 54.5 | 80.4 | 40.0 | 65.0 | 62.0 | 58.0 | 55.0 | 49.0 | 46.0 | 42.0 | 41.0 | 40.0 | 54.5 | 0.0 | 54.5 |
| | 9 | 54.9 | 75.9 | 39.1 | 67.0 | 64.0 | 59.0 | 56.0 | 49.0 | 46.0 | 42.0 | 41.0 | 40.0 | 54.9 | 0.0 | 54.9 |
| | 10 | 57.6 | 86.0 | 39.1 | 70.0 | 65.0 | 59.0 | 57.0 | 50.0 | 46.0 | 41.0 | 40.0 | 40.0 | 57.6 | 0.0 | 57.6 |
| | 11 | 54.2 | 80.3 | 39.0 | 65.0 | 61.0 | 56.0 | 54.0 | 49.0 | 45.0 | 41.0 | 40.0 | 39.0 | 54.2 | 0.0 | 54.2 |
| | 12 | 54.5 | 77.4 | 39.1 | 65.0 | 62.0 | 59.0 | 57.0 | 51.0 | 47.0 | 41.0 | 40.0 | 40.0 | 54.5 | 0.0 | 54.5 |
| | 13 | 52.8 | 72.6 | 39.1 | 64.0 | 61.0 | 57.0 | 55.0 | 50.0 | 46.0 | 42.0 | 41.0 | 40.0 | 52.8 | 0.0 | 52.8 |
| | 14 | 60.0 | 87.1 | 39.1 | 71.0 | 67.0 | 61.0 | 58.0 | 52.0 | 47.0 | 42.0 | 41.0 | 40.0 | 60.0 | 0.0 | 60.0 |
| | 15 | 68.1 | 96.2 | 39.9 | 76.0 | 70.0 | 63.0 | 61.0 | 54.0 | 49.0 | 43.0 | 42.0 | 41.0 | 68.1 | 0.0 | 68.1 |
| | 16 | 56.7 | 81.3 | 40.2 | 67.0 | 65.0 | 60.0 | 58.0 | 52.0 | 48.0 | 43.0 | 42.0 | 40.0 | 56.7 | 0.0 | 56.7 |
| | 17 | 55.2 | 76.9 | 39.1 | 66.0 | 63.0 | 59.0 | 57.0 | 52.0 | 48.0 | 43.0 | 42.0 | 40.0 | 55.2 | 0.0 | 55.2 |
| | 18 | 61.2 | 91.3 | 40.8 | 66.0 | 63.0 | 60.0 | 57.0 | 51.0 | 48.0 | 43.0 | 42.0 | 41.0 | 61.2 | 0.0 | 61.2 |
| Evening | 19 | 54.3 | 76.0 | 42.3 | 65.0 | 62.0 | 59.0 | 57.0 | 52.0 | 49.0 | 45.0 | 44.0 | 43.0 | 54.3 | 5.0 | 59.3 |
| | 20 | 53.1 | 71.9 | 41.9 | 63.0 | 61.0 | 58.0 | 56.0 | 52.0 | 49.0 | 46.0 | 45.0 | 43.0 | 53.1 | 5.0 | 58.1 |
| | 21 | 55.3 | 78.2 | 42.0 | 67.0 | 62.0 | 57.0 | 54.0 | 49.0 | 46.0 | 44.0 | 43.0 | 43.0 | 55.3 | 5.0 | 60.3 |
| Night | 22 | 50.5 | 73.1 | 40.6 | 62.0 | 59.0 | 53.0 | 51.0 | 47.0 | 45.0 | 43.0 | 42.0 | 41.0 | 50.5 | 10.0 | 60.5 |
| | 23 | 58.4 | 88.2 | 40.6 | 68.0 | 61.0 | 52.0 | 49.0 | 45.0 | 44.0 | 42.0 | 41.0 | 40.0 | 58.4 | 10.0 | 68.4 |

| Timeframe | Hour | $L_{eq}$ | $L_{max}$ | $L_{min}$ | L1% | L2% | L5% | L8% | L25% | L50% | L90% | L95% | L99% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | Min | 52.8 | 71.3 | 39.0 | 64.0 | 61.0 | 56.0 | 54.0 | 49.0 | 45.0 | 41.0 | 40.0 | 39.0 |
| | Max | 68.1 | 96.2 | 40.9 | 76.0 | 70.0 | 63.0 | 61.0 | 54.0 | 49.0 | 43.0 | 42.0 | 42.0 |
| Energy Average | | 59.9 | Average: | | 67.3 | 63.8 | 59.2 | 56.8 | 50.8 | 46.9 | 42.2 | 41.2 | 40.3 |
| Evening | Min | 53.1 | 71.9 | 41.9 | 63.0 | 61.0 | 57.0 | 54.0 | 49.0 | 46.0 | 44.0 | 43.0 | 43.0 |
| | Max | 55.3 | 78.2 | 42.3 | 67.0 | 62.0 | 59.0 | 57.0 | 52.0 | 49.0 | 46.0 | 45.0 | 43.0 |
| Energy Average | | 54.3 | Average: | | 65.0 | 61.7 | 58.0 | 55.7 | 51.0 | 48.0 | 45.0 | 44.0 | 43.0 |
| Night | Min | 46.9 | 66.8 | 39.1 | 55.0 | 52.0 | 49.0 | 48.0 | 45.0 | 44.0 | 41.0 | 40.0 | 40.0 |
| | Max | 66.2 | 96.7 | 44.8 | 68.0 | 64.0 | 58.0 | 56.0 | 52.0 | 50.0 | 47.0 | 46.0 | 45.0 |
| Energy Average | | 58.9 | Average: | | 62.1 | 58.7 | 53.7 | 51.9 | 48.4 | 46.6 | 43.9 | 42.9 | 42.0 |

***$L_{eq}$ (dBA)***

| 24-Hour | Daytime | Nighttime |
|---|---|---|
| 59.1 | 59.2 | 58.9 |

***24-Hour CNEL (dBA)***

**65.5**

# 24-Hour Noise Level Measurement Summary

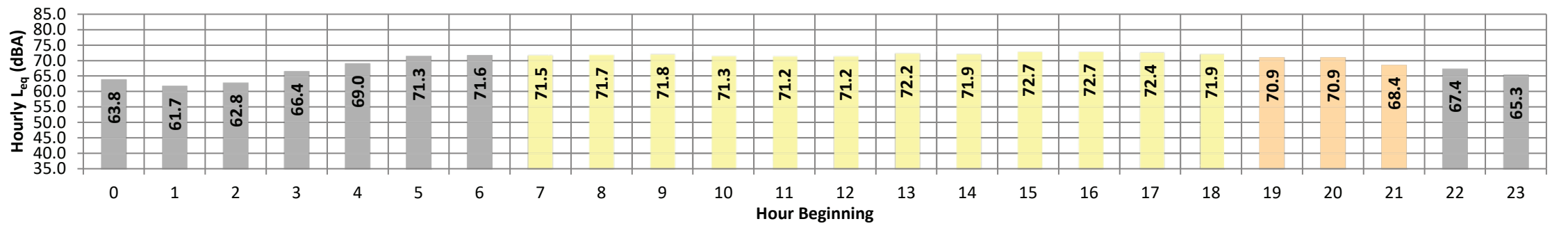
*Date:* Wednesday, May 20, 2020
*Project:* Hesperia Commerce Center II

L4 - Located south of the Project site on Phelan Road near existing single-family residential home at 9565 Fremontia Road.

*Meter:* Piccolo I

*JN:* 12780
*Analyst:* P. Mara

***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 | 63.8 | 85.5 | 33.6 | 76.0 | 74.0 | 70.0 | 68.0 | 54.0 | 45.0 | 37.0 | 36.0 | 35.0 | 63.8 | 10.0 | 73.8 |
| | 1 | 61.7 | 83.7 | 33.6 | 75.0 | 73.0 | 67.0 | 63.0 | 48.0 | 40.0 | 36.0 | 35.0 | 35.0 | 61.7 | 10.0 | 71.7 |
| | 2 | 62.8 | 83.2 | 35.4 | 76.0 | 74.0 | 69.0 | 65.0 | 48.0 | 41.0 | 36.0 | 36.0 | 36.0 | 62.8 | 10.0 | 72.8 |
| | 3 | 66.4 | 85.2 | 36.2 | 78.0 | 77.0 | 74.0 | 72.0 | 58.0 | 51.0 | 37.0 | 36.0 | 36.0 | 66.4 | 10.0 | 76.4 |
| | 4 | 69.0 | 85.4 | 38.4 | 79.0 | 78.0 | 76.0 | 75.0 | 67.0 | 55.0 | 45.0 | 43.0 | 41.0 | 69.0 | 10.0 | 79.0 |
| | 5 | 71.3 | 87.0 | 41.7 | 80.0 | 79.0 | 78.0 | 76.0 | 71.0 | 61.0 | 48.0 | 46.0 | 43.0 | 71.3 | 10.0 | 81.3 |
| | 6 | 71.6 | 89.4 | 40.5 | 80.0 | 79.0 | 78.0 | 77.0 | 72.0 | 63.0 | 47.0 | 45.0 | 42.0 | 71.6 | 10.0 | 81.6 |
| Day | 7 | 71.5 | 84.2 | 38.3 | 79.0 | 78.0 | 77.0 | 76.0 | 73.0 | 66.0 | 45.0 | 42.0 | 39.0 | 71.5 | 0.0 | 71.5 |
| | 8 | 71.7 | 84.6 | 38.3 | 79.0 | 78.0 | 77.0 | 76.0 | 73.0 | 68.0 | 48.0 | 44.0 | 40.0 | 71.7 | 0.0 | 71.7 |
| | 9 | 71.8 | 88.4 | 36.6 | 79.0 | 78.0 | 77.0 | 76.0 | 73.0 | 68.0 | 47.0 | 43.0 | 39.0 | 71.8 | 0.0 | 71.8 |
| | 10 | 71.3 | 84.3 | 36.6 | 79.0 | 78.0 | 76.0 | 76.0 | 72.0 | 68.0 | 47.0 | 43.0 | 39.0 | 71.3 | 0.0 | 71.3 |
| | 11 | 71.2 | 83.7 | 36.6 | 78.0 | 77.0 | 76.0 | 75.0 | 73.0 | 68.0 | 46.0 | 42.0 | 38.0 | 71.2 | 0.0 | 71.2 |
| | 12 | 71.2 | 83.1 | 36.6 | 78.0 | 77.0 | 76.0 | 75.0 | 73.0 | 68.0 | 48.0 | 43.0 | 38.0 | 71.2 | 0.0 | 71.2 |
| | 13 | 72.2 | 93.1 | 36.6 | 80.0 | 78.0 | 76.0 | 76.0 | 73.0 | 69.0 | 47.0 | 42.0 | 38.0 | 72.2 | 0.0 | 72.2 |
| | 14 | 71.9 | 85.0 | 36.6 | 80.0 | 78.0 | 77.0 | 76.0 | 73.0 | 69.0 | 47.0 | 42.0 | 38.0 | 71.9 | 0.0 | 71.9 |
| | 15 | 72.7 | 93.3 | 36.6 | 80.0 | 79.0 | 77.0 | 76.0 | 73.0 | 70.0 | 53.0 | 47.0 | 38.0 | 72.7 | 0.0 | 72.7 |
| | 16 | 72.7 | 89.9 | 36.6 | 80.0 | 78.0 | 77.0 | 76.0 | 74.0 | 70.0 | 49.0 | 43.0 | 38.0 | 72.7 | 0.0 | 72.7 |
| | 17 | 72.4 | 86.3 | 36.6 | 80.0 | 79.0 | 77.0 | 76.0 | 73.0 | 70.0 | 48.0 | 44.0 | 39.0 | 72.4 | 0.0 | 72.4 |
| | 18 | 71.9 | 86.3 | 37.1 | 80.0 | 78.0 | 77.0 | 76.0 | 73.0 | 68.0 | 45.0 | 42.0 | 38.0 | 71.9 | 0.0 | 71.9 |
| Evening | 19 | 70.9 | 85.9 | 38.3 | 79.0 | 78.0 | 77.0 | 76.0 | 72.0 | 65.0 | 46.0 | 43.0 | 40.0 | 70.9 | 5.0 | 75.9 |
| | 20 | 70.9 | 89.8 | 36.6 | 80.0 | 78.0 | 76.0 | 75.0 | 71.0 | 63.0 | 45.0 | 42.0 | 39.0 | 70.9 | 5.0 | 75.9 |
| | 21 | 68.4 | 82.9 | 34.3 | 78.0 | 77.0 | 75.0 | 74.0 | 68.0 | 56.0 | 41.0 | 38.0 | 36.0 | 68.4 | 5.0 | 73.4 |
| Night | 22 | 67.4 | 83.2 | 36.4 | 77.0 | 77.0 | 74.0 | 73.0 | 66.0 | 52.0 | 39.0 | 37.0 | 36.0 | 67.4 | 10.0 | 77.4 |
| | 23 | 65.3 | 80.9 | 33.6 | 76.0 | 75.0 | 72.0 | 71.0 | 61.0 | 47.0 | 37.0 | 36.0 | 36.0 | 65.3 | 10.0 | 75.3 |

| Timeframe | Hour | $L_{eq}$ | $L_{max}$ | $L_{min}$ | L1% | L2% | L5% | L8% | L25% | L50% | L90% | L95% | L99% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | Min | 71.2 | 83.1 | 36.6 | 78.0 | 77.0 | 76.0 | 75.0 | 72.0 | 66.0 | 45.0 | 42.0 | 38.0 |
| | Max | 72.7 | 93.3 | 38.3 | 80.0 | 79.0 | 77.0 | 76.0 | 74.0 | 70.0 | 53.0 | 47.0 | 40.0 |
| Energy Average | | 71.9 | Average: | | 79.3 | 78.0 | 76.7 | 75.8 | 73.0 | 68.5 | 47.5 | 43.1 | 38.5 |
| Evening | Min | 68.4 | 82.9 | 34.3 | 78.0 | 77.0 | 75.0 | 74.0 | 68.0 | 56.0 | 41.0 | 38.0 | 36.0 |
| | Max | 70.9 | 89.8 | 38.3 | 80.0 | 78.0 | 77.0 | 76.0 | 72.0 | 65.0 | 46.0 | 43.0 | 40.0 |
| Energy Average | | 70.2 | Average: | | 79.0 | 77.7 | 76.0 | 75.0 | 70.3 | 61.3 | 44.0 | 41.0 | 38.3 |
| Night | Min | 61.7 | 80.9 | 33.6 | 75.0 | 73.0 | 67.0 | 63.0 | 48.0 | 40.0 | 36.0 | 35.0 | 35.0 |
| | Max | 71.6 | 89.4 | 41.7 | 80.0 | 79.0 | 78.0 | 77.0 | 72.0 | 63.0 | 48.0 | 46.0 | 43.0 |
| Energy Average | | 67.9 | Average: | | 77.4 | 76.2 | 73.1 | 71.1 | 60.6 | 50.6 | 40.2 | 38.9 | 37.8 |

***$L_{eq}$ (dBA)***

| 24-Hour | Daytime | Nighttime |
|---|---|---|
| **70.6** | **71.6** | **67.9** |

***24-Hour CNEL (dBA)***

**75.4**

# 24-Hour Noise Level Measurement Summary

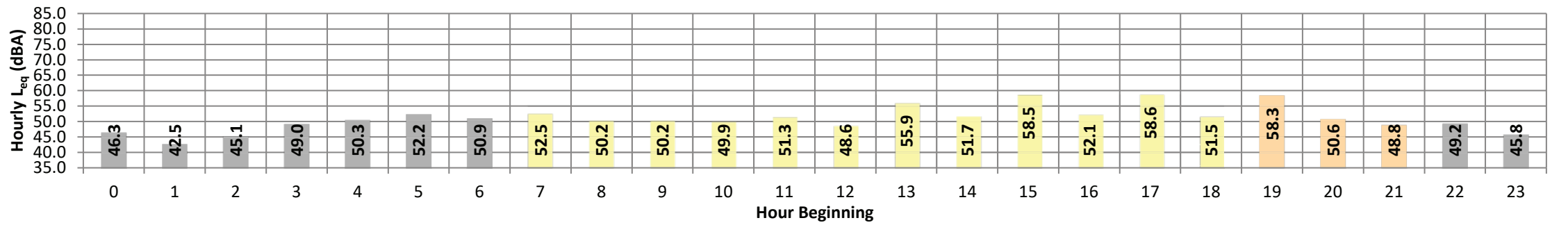
*Date:* Wednesday, May 20, 2020
*Project:* Hesperia Commerce Center II

L5 - Located southeast of the Project site on Monte Vista near existing single-family residential home at 9751 Monta Vista.

*Meter:* Piccolo I

*JN:* 12780
*Analyst:* P. Mara

***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 | 46.3 | 65.5 | 35.2 | 56.0 | 54.0 | 52.0 | 50.0 | 45.0 | 41.0 | 35.0 | 35.0 | 35.0 | 46.3 | 10.0 | 56.3 |
| | 1 | 42.5 | 58.7 | 35.2 | 52.0 | 50.0 | 48.0 | 46.0 | 41.0 | 38.0 | 35.0 | 35.0 | 35.0 | 42.5 | 10.0 | 52.5 |
| | 2 | 45.1 | 64.1 | 35.2 | 56.0 | 53.0 | 50.0 | 48.0 | 43.0 | 39.0 | 35.0 | 35.0 | 35.0 | 45.1 | 10.0 | 55.1 |
| | 3 | 49.0 | 67.9 | 35.2 | 60.0 | 56.0 | 53.0 | 52.0 | 47.0 | 43.0 | 38.0 | 38.0 | 35.0 | 49.0 | 10.0 | 59.0 |
| | 4 | 50.3 | 67.6 | 38.1 | 59.0 | 57.0 | 55.0 | 53.0 | 50.0 | 47.0 | 42.0 | 41.0 | 38.0 | 50.3 | 10.0 | 60.3 |
| | 5 | 52.2 | 72.4 | 39.0 | 61.0 | 59.0 | 56.0 | 55.0 | 52.0 | 49.0 | 44.0 | 42.0 | 40.0 | 52.2 | 10.0 | 62.2 |
| | 6 | 50.9 | 67.5 | 38.2 | 62.0 | 60.0 | 55.0 | 53.0 | 49.0 | 47.0 | 41.0 | 40.0 | 39.0 | 50.9 | 10.0 | 60.9 |
| Day | 7 | 52.5 | 74.6 | 38.1 | 64.0 | 61.0 | 55.0 | 53.0 | 49.0 | 46.0 | 41.0 | 40.0 | 38.0 | 52.5 | 0.0 | 52.5 |
| | 8 | 50.2 | 64.9 | 35.2 | 61.0 | 59.0 | 56.0 | 54.0 | 49.0 | 45.0 | 39.0 | 38.0 | 36.0 | 50.2 | 0.0 | 50.2 |
| | 9 | 50.2 | 73.7 | 35.2 | 62.0 | 59.0 | 55.0 | 52.0 | 46.0 | 43.0 | 38.0 | 37.0 | 35.0 | 50.2 | 0.0 | 50.2 |
| | 10 | 49.9 | 67.9 | 35.2 | 63.0 | 60.0 | 54.0 | 51.0 | 46.0 | 43.0 | 38.0 | 38.0 | 35.0 | 49.9 | 0.0 | 49.9 |
| | 11 | 51.3 | 78.2 | 35.2 | 61.0 | 59.0 | 53.0 | 50.0 | 46.0 | 42.0 | 38.0 | 37.0 | 35.0 | 51.3 | 0.0 | 51.3 |
| | 12 | 48.6 | 67.3 | 35.2 | 60.0 | 58.0 | 53.0 | 51.0 | 46.0 | 43.0 | 38.0 | 37.0 | 35.0 | 48.6 | 0.0 | 48.6 |
| | 13 | 55.9 | 83.6 | 35.2 | 66.0 | 66.0 | 60.0 | 56.0 | 47.0 | 43.0 | 38.0 | 38.0 | 35.0 | 55.9 | 0.0 | 55.9 |
| | 14 | 51.7 | 78.5 | 35.2 | 62.0 | 60.0 | 54.0 | 52.0 | 47.0 | 44.0 | 39.0 | 38.0 | 35.0 | 51.7 | 0.0 | 51.7 |
| | 15 | 58.5 | 88.2 | 35.2 | 67.0 | 63.0 | 59.0 | 56.0 | 50.0 | 47.0 | 40.0 | 38.0 | 37.0 | 58.5 | 0.0 | 58.5 |
| | 16 | 52.1 | 76.8 | 35.2 | 62.0 | 61.0 | 57.0 | 55.0 | 49.0 | 46.0 | 40.0 | 38.0 | 35.0 | 52.1 | 0.0 | 52.1 |
| | 17 | 58.6 | 85.2 | 35.2 | 70.0 | 64.0 | 58.0 | 56.0 | 50.0 | 46.0 | 40.0 | 38.0 | 35.0 | 58.6 | 0.0 | 58.6 |
| | 18 | 51.5 | 73.9 | 37.8 | 62.0 | 60.0 | 56.0 | 54.0 | 50.0 | 47.0 | 41.0 | 39.0 | 38.0 | 51.5 | 0.0 | 51.5 |
| Evening | 19 | 58.3 | 88.1 | 38.1 | 63.0 | 60.0 | 56.0 | 54.0 | 51.0 | 48.0 | 42.0 | 41.0 | 39.0 | 58.3 | 5.0 | 63.3 |
| | 20 | 50.6 | 69.5 | 37.9 | 61.0 | 58.0 | 54.0 | 53.0 | 49.0 | 47.0 | 41.0 | 40.0 | 38.0 | 50.6 | 5.0 | 55.6 |
| | 21 | 48.8 | 69.9 | 35.2 | 59.0 | 57.0 | 53.0 | 51.0 | 48.0 | 44.0 | 38.0 | 38.0 | 35.0 | 48.8 | 5.0 | 53.8 |
| Night | 22 | 49.2 | 70.1 | 35.2 | 59.0 | 58.0 | 55.0 | 53.0 | 47.0 | 43.0 | 38.0 | 38.0 | 35.0 | 49.2 | 10.0 | 59.2 |
| | 23 | 45.8 | 63.9 | 35.2 | 55.0 | 53.0 | 51.0 | 50.0 | 45.0 | 41.0 | 35.0 | 35.0 | 35.0 | 45.8 | 10.0 | 55.8 |

| Timeframe | Hour | $L_{eq}$ | $L_{max}$ | $L_{min}$ | L1% | L2% | L5% | L8% | L25% | L50% | L90% | L95% | L99% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | Min | 48.6 | 64.9 | 35.2 | 60.0 | 58.0 | 53.0 | 50.0 | 46.0 | 42.0 | 38.0 | 37.0 | 35.0 |
| | Max | 58.6 | 88.2 | 38.1 | 70.0 | 66.0 | 60.0 | 56.0 | 50.0 | 47.0 | 41.0 | 40.0 | 38.0 |
| Energy Average | | 53.9 | Average: | | 63.3 | 60.8 | 55.8 | 53.3 | 47.9 | 44.6 | 39.2 | 38.0 | 35.8 |
| Evening | Min | 48.8 | 69.5 | 35.2 | 59.0 | 57.0 | 53.0 | 51.0 | 48.0 | 44.0 | 38.0 | 38.0 | 35.0 |
| | Max | 58.3 | 88.1 | 38.1 | 63.0 | 60.0 | 56.0 | 54.0 | 51.0 | 48.0 | 42.0 | 41.0 | 39.0 |
| Energy Average | | 54.6 | Average: | | 61.0 | 58.3 | 54.3 | 52.7 | 49.3 | 46.3 | 40.3 | 39.7 | 37.3 |
| Night | Min | 42.5 | 58.7 | 35.2 | 52.0 | 50.0 | 48.0 | 46.0 | 41.0 | 38.0 | 35.0 | 35.0 | 35.0 |
| | Max | 52.2 | 72.4 | 39.0 | 62.0 | 60.0 | 56.0 | 55.0 | 52.0 | 49.0 | 44.0 | 42.0 | 40.0 |
| Energy Average | | 48.8 | Average: | | 57.8 | 55.6 | 52.8 | 51.1 | 46.6 | 43.1 | 38.1 | 37.7 | 36.3 |

***$L_{eq}$ (dBA)***

| 24-Hour | Daytime | Nighttime |
|---|---|---|
| **52.8** | **54.1** | **48.8** |

***24-Hour CNEL (dBA)***

**57.2**

# 24-Hour Noise Level Measurement Summary

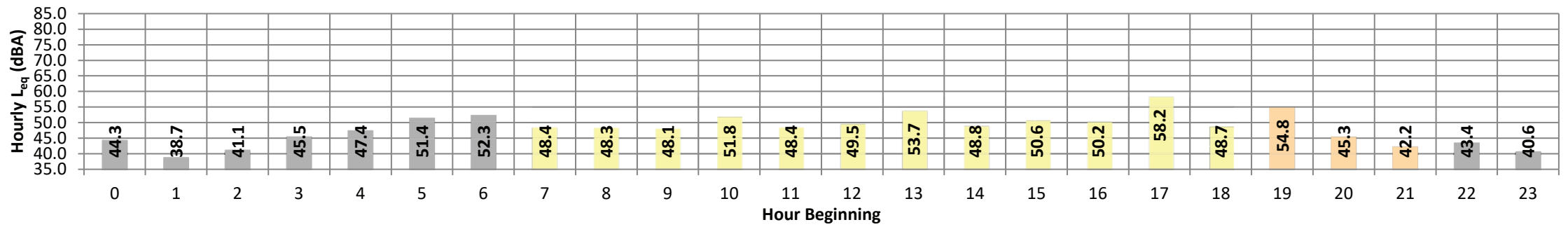
*Date:* Wednesday, May 20, 2020
*Project:* Hesperia Commerce Center II

L6 - Located east of the Project site on Monte Vista near existing single-family residential home at 10040 Monta Vista.

*Meter:* Piccolo I

*JN:* 12780
*Analyst:* P. Mara

***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 | 44.3 | 69.0 | 36.1 | 52.0 | 50.0 | 47.0 | 46.0 | 42.0 | 39.0 | 36.0 | 36.0 | 36.0 | 44.3 | 10.0 | 54.3 |
| | 1 | 38.7 | 61.9 | 36.1 | 44.0 | 42.0 | 41.0 | 40.0 | 38.0 | 36.0 | 36.0 | 36.0 | 36.0 | 38.7 | 10.0 | 48.7 |
| | 2 | 41.1 | 65.9 | 36.1 | 45.0 | 44.0 | 42.0 | 41.0 | 39.0 | 37.0 | 36.0 | 36.0 | 36.0 | 41.1 | 10.0 | 51.1 |
| | 3 | 45.5 | 69.7 | 36.1 | 55.0 | 47.0 | 44.0 | 43.0 | 41.0 | 39.0 | 37.0 | 36.0 | 36.0 | 45.5 | 10.0 | 55.5 |
| | 4 | 47.4 | 74.6 | 36.1 | 57.0 | 50.0 | 47.0 | 45.0 | 43.0 | 42.0 | 39.0 | 39.0 | 36.0 | 47.4 | 10.0 | 57.4 |
| | 5 | 51.4 | 69.4 | 40.8 | 61.0 | 58.0 | 55.0 | 54.0 | 50.0 | 48.0 | 45.0 | 43.0 | 42.0 | 51.4 | 10.0 | 61.4 |
| | 6 | 52.3 | 67.8 | 36.1 | 63.0 | 61.0 | 59.0 | 57.0 | 49.0 | 46.0 | 41.0 | 40.0 | 39.0 | 52.3 | 10.0 | 62.3 |
| Day | 7 | 48.4 | 70.5 | 36.1 | 60.0 | 56.0 | 51.0 | 48.0 | 44.0 | 41.0 | 39.0 | 38.0 | 37.0 | 48.4 | 0.0 | 48.4 |
| | 8 | 48.3 | 69.1 | 36.1 | 61.0 | 57.0 | 52.0 | 49.0 | 44.0 | 42.0 | 39.0 | 39.0 | 38.0 | 48.3 | 0.0 | 48.3 |
| | 9 | 48.1 | 68.5 | 36.5 | 61.0 | 57.0 | 51.0 | 48.0 | 44.0 | 42.0 | 39.0 | 39.0 | 38.0 | 48.1 | 0.0 | 48.1 |
| | 10 | 51.8 | 75.0 | 36.1 | 65.0 | 62.0 | 53.0 | 50.0 | 45.0 | 42.0 | 39.0 | 37.0 | 36.0 | 51.8 | 0.0 | 51.8 |
| | 11 | 48.4 | 70.9 | 36.1 | 60.0 | 57.0 | 53.0 | 50.0 | 44.0 | 42.0 | 38.0 | 37.0 | 36.0 | 48.4 | 0.0 | 48.4 |
| | 12 | 49.5 | 73.0 | 36.1 | 61.0 | 57.0 | 53.0 | 50.0 | 46.0 | 44.0 | 40.0 | 39.0 | 37.0 | 49.5 | 0.0 | 49.5 |
| | 13 | 53.7 | 84.3 | 36.1 | 63.0 | 59.0 | 52.0 | 49.0 | 45.0 | 42.0 | 38.0 | 36.0 | 36.0 | 53.7 | 0.0 | 53.7 |
| | 14 | 48.8 | 72.6 | 36.1 | 61.0 | 56.0 | 50.0 | 48.0 | 45.0 | 40.0 | 36.0 | 36.0 | 36.0 | 48.8 | 0.0 | 48.8 |
| | 15 | 50.6 | 74.5 | 36.1 | 64.0 | 60.0 | 52.0 | 48.0 | 42.0 | 40.0 | 38.0 | 36.0 | 36.0 | 50.6 | 0.0 | 50.6 |
| | 16 | 50.2 | 75.5 | 36.1 | 62.0 | 59.0 | 54.0 | 51.0 | 44.0 | 40.0 | 38.0 | 36.0 | 36.0 | 50.2 | 0.0 | 50.2 |
| | 17 | 58.2 | 85.7 | 36.1 | 67.0 | 63.0 | 59.0 | 57.0 | 47.0 | 42.0 | 36.0 | 36.0 | 36.0 | 58.2 | 0.0 | 58.2 |
| | 18 | 48.7 | 69.7 | 36.1 | 61.0 | 57.0 | 52.0 | 49.0 | 45.0 | 43.0 | 40.0 | 39.0 | 38.0 | 48.7 | 0.0 | 48.7 |
| Evening | 19 | 54.8 | 82.2 | 36.1 | 63.0 | 57.0 | 51.0 | 48.0 | 45.0 | 43.0 | 37.0 | 36.0 | 36.0 | 54.8 | 5.0 | 59.8 |
| | 20 | 45.3 | 68.9 | 36.1 | 56.0 | 50.0 | 46.0 | 44.0 | 41.0 | 39.0 | 36.0 | 36.0 | 36.0 | 45.3 | 5.0 | 50.3 |
| | 21 | 42.2 | 65.2 | 36.1 | 50.0 | 46.0 | 43.0 | 42.0 | 39.0 | 38.0 | 36.0 | 36.0 | 36.0 | 42.2 | 5.0 | 47.2 |
| Night | 22 | 43.4 | 69.9 | 36.1 | 47.0 | 44.0 | 42.0 | 41.0 | 39.0 | 38.0 | 36.0 | 36.0 | 36.0 | 43.4 | 10.0 | 53.4 |
| | 23 | 40.6 | 65.8 | 36.1 | 50.0 | 45.0 | 42.0 | 41.0 | 39.0 | 37.0 | 36.0 | 36.0 | 36.0 | 40.6 | 10.0 | 50.6 |

| Timeframe | Hour | $L_{eq}$ | $L_{max}$ | $L_{min}$ | L1% | L2% | L5% | L8% | L25% | L50% | L90% | L95% | L99% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | Min | 48.1 | 68.5 | 36.1 | 60.0 | 56.0 | 50.0 | 48.0 | 42.0 | 40.0 | 36.0 | 36.0 | 36.0 |
| | Max | 58.2 | 85.7 | 36.5 | 67.0 | 63.0 | 59.0 | 57.0 | 47.0 | 44.0 | 40.0 | 39.0 | 38.0 |
| Energy Average | | 51.7 | Average: | | 62.2 | 58.3 | 52.7 | 49.8 | 44.6 | 41.7 | 38.3 | 37.3 | 36.7 |
| Evening | Min | 42.2 | 65.2 | 36.1 | 50.0 | 46.0 | 43.0 | 42.0 | 39.0 | 38.0 | 36.0 | 36.0 | 36.0 |
| | Max | 54.8 | 82.2 | 36.1 | 63.0 | 57.0 | 51.0 | 48.0 | 45.0 | 43.0 | 37.0 | 36.0 | 36.0 |
| Energy Average | | 50.7 | Average: | | 56.3 | 51.0 | 46.7 | 44.7 | 41.7 | 40.0 | 36.3 | 36.0 | 36.0 |
| Night | Min | 38.7 | 61.9 | 36.1 | 44.0 | 42.0 | 41.0 | 40.0 | 38.0 | 36.0 | 36.0 | 36.0 | 36.0 |
| | Max | 52.3 | 74.6 | 40.8 | 63.0 | 61.0 | 59.0 | 57.0 | 50.0 | 48.0 | 45.0 | 43.0 | 42.0 |
| Energy Average | | 47.3 | Average: | | 52.7 | 49.0 | 46.6 | 45.3 | 42.2 | 40.2 | 38.0 | 37.6 | 37.0 |

***$L_{eq}$ (dBA)***

| 24-Hour | Daytime | Nighttime |
|---|---|---|
| **50.4** | **51.5** | **47.3** |

***24-Hour CNEL (dBA)***

**55.1**

# APPENDIX 7.1:

# OFF-SITE TRAFFIC NOISE CONTOURS

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* n/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,862 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,238 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.02 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.54 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.75 | -0.18 | -1.20 | -5.32 | 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 | 67.8 | 67.0 | 65.1 | 72.0 | 72.4 |
| Medium Trucks: | 70.5 | 68.3 | 65.7 | 64.8 | 71.8 | 72.1 |
| Heavy Trucks: | 75.3 | 72.7 | 71.1 | 70.2 | 77.0 | 77.3 |
| Vehicle Noise: | 77.5 | 75.0 | 73.3 | 72.2 | 79.1 | 79.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 250 | 540 | 1,163 | 2,505 |
| CNEL: | 262 | 565 | 1,218 | 2,623 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,348 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,909 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.67 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.23 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.44 | -0.18 | -1.20 | -5.32 | 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: | 69.7 | 67.1 | 66.3 | 64.4 | 71.3 | 71.7 |
| Medium Trucks: | 69.8 | 67.6 | 65.0 | 64.1 | 71.1 | 71.4 |
| Heavy Trucks: | 74.6 | 72.1 | 70.4 | 69.5 | 76.3 | 76.6 |
| Vehicle Noise: | 76.8 | 74.3 | 72.7 | 71.5 | 78.4 | 78.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 225 | 485 | 1,045 | 2,252 |
| CNEL: | 236 | 508 | 1,095 | 2,359 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Bear Valley Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 22,779 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,137 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.18 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.74 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.95 | -0.18 | -1.20 | -5.32 | 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 | 67.6 | 66.8 | 64.9 | 71.8 | 72.2 |
| Medium Trucks: | 70.3 | 68.1 | 65.5 | 64.6 | 71.6 | 71.9 |
| Heavy Trucks: | 75.1 | 72.5 | 70.9 | 70.0 | 76.8 | 77.1 |
| Vehicle Noise: | 77.3 | 74.8 | 73.1 | 72.0 | 78.9 | 79.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 243 | 523 | 1,127 | 2,428 |
| CNEL: | 254 | 548 | 1,180 | 2,543 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Eucalyptus St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,878 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,240 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.03 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.54 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.75 | -0.18 | -1.20 | -5.32 | 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 | 67.8 | 67.0 | 65.1 | 72.0 | 72.4 |
| Medium Trucks: | 70.5 | 68.3 | 65.7 | 64.8 | 71.8 | 72.1 |
| Heavy Trucks: | 75.3 | 72.8 | 71.1 | 70.2 | 77.0 | 77.3 |
| Vehicle Noise: | 77.5 | 75.0 | 73.3 | 72.2 | 79.1 | 79.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 251 | 540 | 1,163 | 2,506 |
| CNEL: | 262 | 565 | 1,218 | 2,624 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 6,265 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 588 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -5.78 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -16.35 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -15.56 | 0.41 | -1.20 | -5.41 | 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: | 65.2 | 62.6 | 61.7 | 59.9 | 66.8 | 67.1 |
| Medium Trucks: | 65.3 | 63.1 | 60.5 | 59.6 | 66.6 | 66.9 |
| Heavy Trucks: | 70.0 | 67.5 | 65.9 | 65.0 | 71.8 | 72.1 |
| Vehicle Noise: | 72.2 | 69.8 | 68.1 | 67.0 | 73.9 | 74.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 94 | 203 | 437 | 942 |
| CNEL: | 99 | 213 | 458 | 987 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* s/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 2,389 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 224 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -9.97 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -20.54 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -19.75 | 0.41 | -1.20 | -5.41 | 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: | 61.0 | 58.4 | 57.6 | 55.7 | 62.6 | 62.9 |
| Medium Trucks: | 61.1 | 58.9 | 56.3 | 55.4 | 62.4 | 62.7 |
| Heavy Trucks: | 65.9 | 63.3 | 61.7 | 60.8 | 67.6 | 67.9 |
| Vehicle Noise: | 68.1 | 65.6 | 63.9 | 62.8 | 69.7 | 70.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 50 | 107 | 230 | 495 |
| CNEL: | 52 | 112 | 241 | 519 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Verbena Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 192 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 18 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 25.0 | feet |
| Centerline Dist. to Observer: | 25.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 22.494 |
| Medium Trucks: | 22.098 |
| Heavy Trucks: | 22.136 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -19.54 | 5.10 | -1.20 | -4.41 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -30.10 | 5.22 | -1.20 | -4.85 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -29.31 | 5.20 | -1.20 | -5.94 | 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: | 50.9 | 48.3 | 47.4 | 45.6 | 52.5 | 52.8 |
| Medium Trucks: | 51.6 | 49.4 | 46.8 | 45.9 | 52.9 | 53.2 |
| Heavy Trucks: | 57.7 | 55.2 | 53.5 | 52.6 | 59.4 | 59.7 |
| Vehicle Noise: | 59.3 | 56.8 | 55.2 | 54.1 | 61.0 | 61.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 6 | 13 | 29 | 62 |
| CNEL: | 7 | 14 | 30 | 65 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Yucca Terrace Dr.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 25,536 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,395 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.32 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.25 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.46 | 1.73 | -1.20 | -5.30 | 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 | 70.0 | 69.2 | 67.3 | 74.2 | 74.5 |
| Medium Trucks: | 72.7 | 70.5 | 67.9 | 67.0 | 74.0 | 74.3 |
| Heavy Trucks: | 77.5 | 74.9 | 73.3 | 72.4 | 79.2 | 79.5 |
| Vehicle Noise: | 79.7 | 77.2 | 75.5 | 74.4 | 81.3 | 81.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 368 | 792 | 1,707 | 3,678 |
| CNEL: | 385 | 830 | 1,788 | 3,853 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Main St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 22,673 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,127 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.20 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.76 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.97 | 1.73 | -1.20 | -5.30 | 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 | 69.5 | 68.6 | 66.8 | 73.7 | 74.0 |
| Medium Trucks: | 72.2 | 70.0 | 67.4 | 66.5 | 73.5 | 73.8 |
| Heavy Trucks: | 77.0 | 74.4 | 72.8 | 71.9 | 78.7 | 79.0 |
| Vehicle Noise: | 79.1 | 76.7 | 75.0 | 73.9 | 80.8 | 81.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 340 | 732 | 1,577 | 3,398 |
| CNEL: | 356 | 767 | 1,652 | 3,559 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Poplar St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 22,662 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,126 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.20 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.77 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.98 | 1.73 | -1.20 | -5.30 | 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 | 69.5 | 68.6 | 66.8 | 73.7 | 74.0 |
| Medium Trucks: | 72.2 | 70.0 | 67.4 | 66.5 | 73.5 | 73.8 |
| Heavy Trucks: | 76.9 | 74.4 | 72.8 | 71.9 | 78.7 | 79.0 |
| Vehicle Noise: | 79.1 | 76.7 | 75.0 | 73.9 | 80.8 | 81.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 340 | 732 | 1,577 | 3,397 |
| CNEL: | 356 | 767 | 1,651 | 3,558 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Joshua St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 24,326 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,282 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.11 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.46 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.67 | 1.73 | -1.20 | -5.30 | 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 | 69.8 | 68.9 | 67.1 | 74.0 | 74.3 |
| Medium Trucks: | 72.5 | 70.3 | 67.7 | 66.8 | 73.8 | 74.1 |
| Heavy Trucks: | 77.3 | 74.7 | 73.1 | 72.2 | 79.0 | 79.3 |
| Vehicle Noise: | 79.5 | 77.0 | 75.3 | 74.2 | 81.1 | 81.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 356 | 767 | 1,653 | 3,561 |
| CNEL: | 373 | 804 | 1,731 | 3,730 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Escondido Av.
*Road Segment:* n/o Sultana St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,716 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,943 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | -0.18 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.74 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.95 | 2.25 | -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: | 71.0 | 68.5 | 67.6 | 65.8 | 72.6 | 73.0 |
| Medium Trucks: | 71.3 | 69.1 | 66.5 | 65.6 | 72.6 | 72.9 |
| Heavy Trucks: | 76.5 | 74.0 | 72.3 | 71.4 | 78.2 | 78.5 |
| Vehicle Noise: | 78.5 | 76.0 | 74.4 | 73.3 | 80.1 | 80.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 237 | 510 | 1,099 | 2,367 |
| CNEL: | 248 | 534 | 1,150 | 2,478 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Escondido Av.
*Road Segment:* s/o Sultana St.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,716 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,943 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | -0.18 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.74 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.95 | 2.25 | -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: | 71.0 | 68.5 | 67.6 | 65.8 | 72.6 | 73.0 |
| Medium Trucks: | 71.3 | 69.1 | 66.5 | 65.6 | 72.6 | 72.9 |
| Heavy Trucks: | 76.5 | 74.0 | 72.3 | 71.4 | 78.2 | 78.5 |
| Vehicle Noise: | 78.5 | 76.0 | 74.4 | 73.3 | 80.1 | 80.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 237 | 510 | 1,099 | 2,367 |
| CNEL: | 248 | 534 | 1,150 | 2,478 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Topaz Av.
*Road Segment:* n/o Main St.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 3,199 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 300 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -7.32 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -17.89 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -17.10 | 3.70 | -1.20 | -5.77 | 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: | 61.6 | 59.1 | 58.2 | 56.4 | 63.2 | 63.6 |
| Medium Trucks: | 62.3 | 60.1 | 57.6 | 56.7 | 63.7 | 63.9 |
| Heavy Trucks: | 68.4 | 65.9 | 64.2 | 63.3 | 70.1 | 70.4 |
| Vehicle Noise: | 70.0 | 67.6 | 65.9 | 64.8 | 71.7 | 72.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 39 | 84 | 180 | 389 |
| CNEL: | 41 | 88 | 189 | 407 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Luna Rd.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 7,673 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 720 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 34.0 | feet |
| Centerline Dist. to Observer: | 34.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 32.202 |
| Medium Trucks: | 31.927 |
| Heavy Trucks: | 31.953 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -3.52 | 2.76 | -1.20 | -4.53 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -14.09 | 2.82 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -13.30 | 2.81 | -1.20 | -5.67 | 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 | 62.0 | 61.1 | 59.3 | 66.2 | 66.5 |
| Medium Trucks: | 65.2 | 63.0 | 60.5 | 59.6 | 66.6 | 66.8 |
| Heavy Trucks: | 71.3 | 68.8 | 67.1 | 66.2 | 73.0 | 73.3 |
| Vehicle Noise: | 73.0 | 70.5 | 68.8 | 67.7 | 74.6 | 74.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 69 | 148 | 320 | 689 |
| CNEL: | 72 | 155 | 335 | 721 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Bear Valley Rd.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 12,845 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,205 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -2.67 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -13.23 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -12.44 | -0.18 | -1.20 | -5.32 | 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 | 65.1 | 64.3 | 62.4 | 69.3 | 69.7 |
| Medium Trucks: | 67.8 | 65.6 | 63.0 | 62.1 | 69.1 | 69.4 |
| Heavy Trucks: | 72.6 | 70.1 | 68.4 | 67.5 | 74.3 | 74.6 |
| Vehicle Noise: | 74.8 | 72.3 | 70.7 | 69.5 | 76.4 | 76.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 166 | 357 | 769 | 1,657 |
| CNEL: | 174 | 374 | 806 | 1,736 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Eucalyptus St.
*Road Segment:* w/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 320 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 30 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -18.70 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -29.27 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -28.48 | -0.18 | -1.20 | -5.32 | 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: | 51.7 | 49.1 | 48.2 | 46.4 | 53.3 | 53.6 |
| Medium Trucks: | 51.8 | 49.6 | 47.0 | 46.1 | 53.1 | 53.4 |
| Heavy Trucks: | 56.5 | 54.0 | 52.4 | 51.5 | 58.3 | 58.6 |
| Vehicle Noise: | 58.7 | 56.3 | 54.6 | 53.5 | 60.4 | 60.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 14 | 30 | 66 | 141 |
| CNEL: | 15 | 32 | 69 | 148 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Eucalyptus St.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 1,610 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 151 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 50 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| 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: | 71.78 | -11.68 | 0.79 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -22.25 | 0.82 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -21.46 | 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: | 59.7 | 57.1 | 56.2 | 54.4 | 61.3 | 61.6 |
| Medium Trucks: | 59.8 | 57.6 | 55.0 | 54.1 | 61.1 | 61.4 |
| Heavy Trucks: | 64.6 | 62.0 | 60.4 | 59.5 | 66.3 | 66.6 |
| Vehicle Noise: | 66.8 | 64.3 | 62.6 | 61.5 | 68.4 | 68.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 39 | 84 | 181 | 390 |
| CNEL: | 41 | 88 | 190 | 408 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Baldy Mesa Rd.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 15,549 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,458 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.84 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.40 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.61 | 0.41 | -1.20 | -5.41 | 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 | 66.6 | 65.7 | 63.9 | 70.7 | 71.1 |
| Medium Trucks: | 69.2 | 67.0 | 64.4 | 63.5 | 70.5 | 70.8 |
| Heavy Trucks: | 74.0 | 71.5 | 69.8 | 68.9 | 75.7 | 76.0 |
| Vehicle Noise: | 76.2 | 73.7 | 72.1 | 71.0 | 77.8 | 78.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 173 | 372 | 802 | 1,727 |
| CNEL: | 181 | 390 | 840 | 1,809 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Verbena Rd.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 15,453 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,449 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.86 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.43 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.64 | 0.41 | -1.20 | -5.41 | 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 | 66.5 | 65.7 | 63.8 | 70.7 | 71.1 |
| Medium Trucks: | 69.2 | 67.0 | 64.4 | 63.5 | 70.5 | 70.8 |
| Heavy Trucks: | 74.0 | 71.4 | 69.8 | 68.9 | 75.7 | 76.0 |
| Vehicle Noise: | 76.2 | 73.7 | 72.0 | 70.9 | 77.8 | 78.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 172 | 371 | 798 | 1,720 |
| CNEL: | 180 | 388 | 836 | 1,801 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2019)
Road Name: Phelan Rd.
Road Segment: w/o Bellflower St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 15,874 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,489 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.75 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.31 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.52 | 0.41 | -1.20 | -5.41 | 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 | 66.6 | 65.8 | 63.9 | 70.8 | 71.2 |
| Medium Trucks: | 69.3 | 67.1 | 64.5 | 63.6 | 70.6 | 70.9 |
| Heavy Trucks: | 74.1 | 71.6 | 69.9 | 69.0 | 75.8 | 76.1 |
| Vehicle Noise: | 76.3 | 73.8 | 72.2 | 71.0 | 77.9 | 78.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 175 | 377 | 813 | 1,751 |
| CNEL: | 183 | 395 | 851 | 1,834 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2019)
Road Name: Phelan Rd.
Road Segment: e/o Dwy. 1
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 16,327 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,532 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.62 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.19 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.40 | 0.41 | -1.20 | -5.41 | 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 | 66.8 | 65.9 | 64.1 | 70.9 | 71.3 |
| Medium Trucks: | 69.4 | 67.2 | 64.6 | 63.7 | 70.7 | 71.0 |
| Heavy Trucks: | 74.2 | 71.7 | 70.0 | 69.1 | 75.9 | 76.2 |
| Vehicle Noise: | 76.4 | 73.9 | 72.3 | 71.2 | 78.0 | 78.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 178 | 384 | 828 | 1,784 |
| CNEL: | 187 | 403 | 867 | 1,869 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2019)
Road Name: Main St.
Road Segment: w/o Mesa Linda St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 17,996 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,688 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | -0.79 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -11.35 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -10.56 | 1.58 | -1.20 | -5.34 | 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 | 67.2 | 66.3 | 64.5 | 71.4 | 71.7 |
| Medium Trucks: | 70.0 | 67.8 | 65.2 | 64.3 | 71.3 | 71.6 |
| Heavy Trucks: | 75.2 | 72.7 | 71.0 | 70.1 | 76.9 | 77.2 |
| Vehicle Noise: | 77.2 | 74.7 | 73.1 | 72.0 | 78.8 | 79.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 233 | 502 | 1,082 | 2,331 |
| CNEL: | 244 | 526 | 1,133 | 2,441 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing (2019)
Road Name: Main St.
Road Segment: w/o Catabra Rd.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 19,799 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,857 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | -0.37 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.94 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -10.15 | 1.58 | -1.20 | -5.34 | 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 | 67.6 | 66.7 | 64.9 | 71.8 | 72.1 |
| Medium Trucks: | 70.4 | 68.2 | 65.7 | 64.8 | 71.8 | 72.0 |
| Heavy Trucks: | 75.6 | 73.1 | 71.4 | 70.5 | 77.3 | 77.6 |
| Vehicle Noise: | 77.6 | 75.2 | 73.5 | 72.4 | 79.3 | 79.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 248 | 535 | 1,153 | 2,484 |
| CNEL: | 260 | 560 | 1,208 | 2,602 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Main St.
*Road Segment:* e/o Key Point Av.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 30,634 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,873 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.52 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.04 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.25 | 1.58 | -1.20 | -5.34 | 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 | 69.5 | 68.6 | 66.8 | 73.7 | 74.0 |
| Medium Trucks: | 72.3 | 70.1 | 67.6 | 66.7 | 73.7 | 73.9 |
| Heavy Trucks: | 77.5 | 75.0 | 73.3 | 72.4 | 79.2 | 79.5 |
| Vehicle Noise: | 79.5 | 77.1 | 75.4 | 74.3 | 81.2 | 81.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 332 | 716 | 1,543 | 3,323 |
| CNEL: | 348 | 750 | 1,615 | 3,480 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Main St.
*Road Segment:* e/o Mariposa Rd.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 39,544 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,709 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.63 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.93 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.14 | 1.20 | -1.20 | -5.34 | 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 | 70.2 | 69.4 | 67.5 | 74.4 | 74.8 |
| Medium Trucks: | 73.1 | 70.9 | 68.3 | 67.4 | 74.4 | 74.7 |
| Heavy Trucks: | 78.2 | 75.7 | 74.1 | 73.2 | 80.0 | 80.3 |
| Vehicle Noise: | 80.3 | 77.8 | 76.1 | 75.0 | 81.9 | 82.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 372 | 802 | 1,728 | 3,722 |
| CNEL: | 390 | 840 | 1,809 | 3,898 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Main St.
*Road Segment:* w/o Escondido Av.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 41,069 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,852 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.80 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.77 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.98 | 1.20 | -1.20 | -5.34 | 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: | 73.0 | 70.4 | 69.5 | 67.7 | 74.6 | 74.9 |
| Medium Trucks: | 73.2 | 71.0 | 68.5 | 67.6 | 74.6 | 74.8 |
| Heavy Trucks: | 78.4 | 75.9 | 74.2 | 73.3 | 80.1 | 80.4 |
| Vehicle Noise: | 80.4 | 78.0 | 76.3 | 75.2 | 82.1 | 82.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 382 | 822 | 1,772 | 3,817 |
| CNEL: | 400 | 861 | 1,856 | 3,998 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Main St.
*Road Segment:* e/o Escondido Av.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 33,268 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,121 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.88 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.68 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.89 | 1.20 | -1.20 | -5.34 | 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 | 69.5 | 68.6 | 66.8 | 73.7 | 74.0 |
| Medium Trucks: | 72.3 | 70.1 | 67.5 | 66.6 | 73.6 | 73.9 |
| Heavy Trucks: | 77.5 | 75.0 | 73.3 | 72.4 | 79.2 | 79.5 |
| Vehicle Noise: | 79.5 | 77.0 | 75.4 | 74.3 | 81.1 | 81.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 332 | 715 | 1,540 | 3,317 |
| CNEL: | 347 | 748 | 1,612 | 3,474 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Main St.
*Road Segment:* e/o Topaz Av.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 30,474 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,858 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.09 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.48 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.69 | 1.73 | -1.20 | -5.30 | 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: | 73.4 | 70.8 | 69.9 | 68.1 | 75.0 | 75.3 |
| Medium Trucks: | 73.5 | 71.3 | 68.7 | 67.8 | 74.8 | 75.1 |
| Heavy Trucks: | 78.2 | 75.7 | 74.1 | 73.2 | 80.0 | 80.3 |
| Vehicle Noise: | 80.4 | 78.0 | 76.3 | 75.2 | 82.1 | 82.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 414 | 892 | 1,921 | 4,139 |
| CNEL: | 433 | 934 | 2,012 | 4,334 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Sultana St.
*Road Segment:* e/o Escondido Av.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 4,122 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 387 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -6.22 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -16.78 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -15.99 | 3.70 | -1.20 | -5.77 | 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: | 62.7 | 60.2 | 59.3 | 57.5 | 64.3 | 64.7 |
| Medium Trucks: | 63.4 | 61.2 | 58.7 | 57.8 | 64.8 | 65.0 |
| Heavy Trucks: | 69.5 | 67.0 | 65.3 | 64.4 | 71.2 | 71.5 |
| Vehicle Noise: | 71.1 | 68.7 | 67.0 | 65.9 | 72.8 | 73.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 46 | 99 | 214 | 460 |
| CNEL: | 48 | 104 | 224 | 482 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing (2019)
*Road Name:* Joshua St.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 4,420 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 415 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 50 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 40.0 | feet |
| Centerline Dist. to Observer: | 40.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 31.623 |
| Medium Trucks: | 31.342 |
| Heavy Trucks: | 31.369 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -7.30 | 2.88 | -1.20 | -4.59 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -17.86 | 2.94 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -17.07 | 2.93 | -1.20 | -5.56 | 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: | 66.2 | 63.6 | 62.7 | 60.9 | 67.8 | 68.1 |
| Medium Trucks: | 66.3 | 64.1 | 61.5 | 60.6 | 67.6 | 67.9 |
| Heavy Trucks: | 71.1 | 68.5 | 66.9 | 66.0 | 72.8 | 73.1 |
| Vehicle Noise: | 73.2 | 70.8 | 69.1 | 68.0 | 74.9 | 75.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 85 | 182 | 393 | 846 |
| CNEL: | 89 | 191 | 411 | 886 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* n/o Luna Rd.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 24,170 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,267 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.53% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.51% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.95% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.06 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.40 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.63 | -0.18 | -1.20 | -5.32 | 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 | 67.9 | 67.0 | 65.2 | 72.0 | 72.4 |
| Medium Trucks: | 70.6 | 68.4 | 65.9 | 64.9 | 72.0 | 72.2 |
| Heavy Trucks: | 75.4 | 72.9 | 71.2 | 70.3 | 77.1 | 77.4 |
| Vehicle Noise: | 77.6 | 75.1 | 73.4 | 72.3 | 79.2 | 79.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 255 | 549 | 1,182 | 2,547 |
| CNEL: | 267 | 575 | 1,238 | 2,667 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* s/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,752 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,947 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.56% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.50% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.93% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.60 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.06 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.31 | -0.18 | -1.20 | -5.32 | 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 | 67.2 | 66.3 | 64.5 | 71.4 | 71.7 |
| Medium Trucks: | 70.0 | 67.8 | 65.2 | 64.3 | 71.3 | 71.6 |
| Heavy Trucks: | 74.7 | 72.2 | 70.6 | 69.6 | 76.4 | 76.7 |
| Vehicle Noise: | 76.9 | 74.4 | 72.8 | 71.7 | 78.5 | 78.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 230 | 495 | 1,067 | 2,298 |
| CNEL: | 241 | 519 | 1,117 | 2,407 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* s/o Bear Valley Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,564 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,210 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.85% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.37% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.78% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.03 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.59 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.83 | -0.18 | -1.20 | -5.32 | 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 | 67.8 | 66.9 | 65.1 | 72.0 | 72.3 |
| Medium Trucks: | 70.4 | 68.2 | 65.7 | 64.8 | 71.8 | 72.0 |
| Heavy Trucks: | 75.2 | 72.7 | 71.0 | 70.1 | 76.9 | 77.2 |
| Vehicle Noise: | 77.4 | 74.9 | 73.3 | 72.2 | 79.0 | 79.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 248 | 534 | 1,151 | 2,479 |
| CNEL: | 260 | 559 | 1,205 | 2,596 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* s/o Eucalyptus St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 24,949 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,340 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.04% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.28% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.68% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.23 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.39 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.63 | -0.18 | -1.20 | -5.32 | 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 | 68.0 | 67.2 | 65.3 | 72.2 | 72.6 |
| Medium Trucks: | 70.6 | 68.4 | 65.9 | 64.9 | 72.0 | 72.2 |
| Heavy Trucks: | 75.4 | 72.9 | 71.2 | 70.3 | 77.1 | 77.4 |
| Vehicle Noise: | 77.6 | 75.1 | 73.5 | 72.4 | 79.2 | 79.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 256 | 552 | 1,188 | 2,560 |
| CNEL: | 268 | 578 | 1,245 | 2,681 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Baldy Mesa Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 6,551 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 615 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.52% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.04% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.44% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -5.55 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -16.35 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -15.56 | 0.41 | -1.20 | -5.41 | 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: | 65.4 | 62.8 | 62.0 | 60.1 | 67.0 | 67.4 |
| Medium Trucks: | 65.3 | 63.1 | 60.5 | 59.6 | 66.6 | 66.9 |
| Heavy Trucks: | 70.0 | 67.5 | 65.9 | 65.0 | 71.8 | 72.1 |
| Vehicle Noise: | 72.3 | 69.8 | 68.2 | 67.1 | 73.9 | 74.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 95 | 204 | 440 | 949 |
| CNEL: | 99 | 214 | 461 | 994 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Baldy Mesa Rd.
*Road Segment:* s/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 2,579 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 242 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 85.01% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.82% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.17% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -9.58 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -20.54 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -19.75 | 0.41 | -1.20 | -5.41 | 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: | 61.4 | 58.8 | 57.9 | 56.1 | 63.0 | 63.3 |
| Medium Trucks: | 61.1 | 58.9 | 56.3 | 55.4 | 62.4 | 62.7 |
| Heavy Trucks: | 65.9 | 63.3 | 61.7 | 60.8 | 67.6 | 67.9 |
| Vehicle Noise: | 68.1 | 65.7 | 64.0 | 62.9 | 69.8 | 70.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 50 | 108 | 233 | 501 |
| CNEL: | 53 | 113 | 244 | 525 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Verbena Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 287 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 27 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 25.0 | feet |
| Centerline Dist. to Observer: | 25.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 89.18% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 4.92% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 5.90% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 22.494 |
| Medium Trucks: | 22.098 |
| Heavy Trucks: | 22.136 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -17.52 | 5.10 | -1.20 | -4.41 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -30.10 | 5.22 | -1.20 | -4.85 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -29.31 | 5.20 | -1.20 | -5.94 | 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: | 52.9 | 50.3 | 49.5 | 47.6 | 54.5 | 54.8 |
| Medium Trucks: | 51.6 | 49.4 | 46.8 | 45.9 | 52.9 | 53.2 |
| Heavy Trucks: | 57.7 | 55.2 | 53.5 | 52.6 | 59.4 | 59.7 |
| Vehicle Noise: | 59.7 | 57.2 | 55.6 | 54.5 | 61.3 | 61.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 7 | 14 | 31 | 66 |
| CNEL: | 7 | 15 | 32 | 69 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* s/o Yucca Terrace Dr.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 28,914 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,712 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 82.92% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.91% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 9.17% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.81 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.39 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.75 | 1.73 | -1.20 | -5.30 | 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 | 70.5 | 69.6 | 67.8 | 74.7 | 75.0 |
| Medium Trucks: | 73.5 | 71.3 | 68.8 | 67.9 | 74.9 | 75.1 |
| Heavy Trucks: | 78.2 | 75.7 | 74.0 | 73.1 | 79.9 | 80.2 |
| Vehicle Noise: | 80.4 | 77.9 | 76.2 | 75.1 | 82.0 | 82.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 409 | 881 | 1,899 | 4,091 |
| CNEL: | 428 | 923 | 1,988 | 4,284 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* s/o Main St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 24,579 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,305 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 85.07% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.79% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.14% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.22 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.76 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.97 | 1.73 | -1.20 | -5.30 | 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 | 69.9 | 69.0 | 67.2 | 74.1 | 74.4 |
| Medium Trucks: | 72.2 | 70.0 | 67.4 | 66.5 | 73.5 | 73.8 |
| Heavy Trucks: | 77.0 | 74.4 | 72.8 | 71.9 | 78.7 | 79.0 |
| Vehicle Noise: | 79.2 | 76.8 | 75.1 | 74.0 | 80.9 | 81.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 344 | 742 | 1,598 | 3,442 |
| CNEL: | 361 | 777 | 1,674 | 3,606 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* s/o Poplar St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 24,568 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,304 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 85.07% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.79% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.14% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.21 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.77 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.98 | 1.73 | -1.20 | -5.30 | 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 | 69.9 | 69.0 | 67.2 | 74.1 | 74.4 |
| Medium Trucks: | 72.2 | 70.0 | 67.4 | 66.5 | 73.5 | 73.8 |
| Heavy Trucks: | 76.9 | 74.4 | 72.8 | 71.9 | 78.7 | 79.0 |
| Vehicle Noise: | 79.2 | 76.8 | 75.1 | 74.0 | 80.9 | 81.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 344 | 741 | 1,597 | 3,441 |
| CNEL: | 360 | 777 | 1,673 | 3,605 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* US Hwy. 395
*Road Segment:* s/o Joshua St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 25,851 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,425 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.77% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.92% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.31% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.42 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.46 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.67 | 1.73 | -1.20 | -5.30 | 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 | 70.1 | 69.3 | 67.4 | 74.3 | 74.6 |
| Medium Trucks: | 72.5 | 70.3 | 67.7 | 66.8 | 73.8 | 74.1 |
| Heavy Trucks: | 77.3 | 74.7 | 73.1 | 72.2 | 79.0 | 79.3 |
| Vehicle Noise: | 79.5 | 77.1 | 75.4 | 74.3 | 81.1 | 81.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 360 | 775 | 1,669 | 3,596 |
| CNEL: | 377 | 811 | 1,748 | 3,767 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Escondido Av.
*Road Segment:* n/o Sultana St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 21,097 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 1,979 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.11% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.23% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.67% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | -0.08 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.74 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.95 | 2.25 | -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: | 71.1 | 68.6 | 67.7 | 65.9 | 72.7 | 73.1 |
| Medium Trucks: | 71.3 | 69.1 | 66.5 | 65.6 | 72.6 | 72.9 |
| Heavy Trucks: | 76.5 | 74.0 | 72.3 | 71.4 | 78.2 | 78.5 |
| Vehicle Noise: | 78.5 | 76.0 | 74.4 | 73.3 | 80.1 | 80.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 237 | 511 | 1,101 | 2,373 |
| CNEL: | 248 | 535 | 1,153 | 2,485 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Escondido Av.
*Road Segment:* s/o Sultana St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 20,906 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 1,961 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.96% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.29% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.75% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | -0.13 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.74 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.95 | 2.25 | -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: | 71.1 | 68.5 | 67.6 | 65.8 | 72.7 | 73.0 |
| Medium Trucks: | 71.3 | 69.1 | 66.5 | 65.6 | 72.6 | 72.9 |
| Heavy Trucks: | 76.5 | 74.0 | 72.3 | 71.4 | 78.2 | 78.5 |
| Vehicle Noise: | 78.5 | 76.0 | 74.4 | 73.3 | 80.1 | 80.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 237 | 511 | 1,100 | 2,370 |
| CNEL: | 248 | 535 | 1,152 | 2,482 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Topaz Av.
*Road Segment:* n/o Main St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 3,295 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 309 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.28% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.15% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.57% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -7.17 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -17.89 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -17.10 | 3.70 | -1.20 | -5.77 | 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: | 61.8 | 59.2 | 58.3 | 56.5 | 63.4 | 63.7 |
| Medium Trucks: | 62.3 | 60.1 | 57.6 | 56.7 | 63.7 | 63.9 |
| Heavy Trucks: | 68.4 | 65.9 | 64.2 | 63.3 | 70.1 | 70.4 |
| Vehicle Noise: | 70.1 | 67.6 | 65.9 | 64.9 | 71.7 | 72.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 39 | 84 | 181 | 390 |
| CNEL: | 41 | 88 | 190 | 408 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Luna Rd.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 7,768 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 729 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 34.0 | feet |
| Centerline Dist. to Observer: | 34.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.01% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.27% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.72% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 32.202 |
| Medium Trucks: | 31.927 |
| Heavy Trucks: | 31.953 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -3.46 | 2.76 | -1.20 | -4.53 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -14.09 | 2.82 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -13.30 | 2.81 | -1.20 | -5.67 | 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 | 62.0 | 61.2 | 59.3 | 66.2 | 66.6 |
| Medium Trucks: | 65.2 | 63.0 | 60.5 | 59.6 | 66.6 | 66.8 |
| Heavy Trucks: | 71.3 | 68.8 | 67.1 | 66.2 | 73.0 | 73.3 |
| Vehicle Noise: | 73.0 | 70.5 | 68.8 | 67.8 | 74.6 | 74.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 69 | 149 | 320 | 690 |
| CNEL: | 72 | 156 | 335 | 722 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Bear Valley Rd.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 13,227 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,241 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.28% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.15% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.57% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -2.52 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -13.23 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -12.44 | -0.18 | -1.20 | -5.32 | 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: | 67.9 | 65.3 | 64.4 | 62.6 | 69.5 | 69.8 |
| Medium Trucks: | 67.8 | 65.6 | 63.0 | 62.1 | 69.1 | 69.4 |
| Heavy Trucks: | 72.6 | 70.1 | 68.4 | 67.5 | 74.3 | 74.6 |
| Vehicle Noise: | 74.8 | 72.3 | 70.7 | 69.6 | 76.4 | 76.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 167 | 359 | 773 | 1,665 |
| CNEL: | 174 | 376 | 810 | 1,744 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Eucalyptus St.
*Road Segment:* w/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 415 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 39 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 87.53% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 5.67% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 6.80% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -17.38 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -29.27 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -28.48 | -0.18 | -1.20 | -5.32 | 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: | 53.0 | 50.4 | 49.6 | 47.7 | 54.6 | 55.0 |
| Medium Trucks: | 51.8 | 49.6 | 47.0 | 46.1 | 53.1 | 53.4 |
| Heavy Trucks: | 56.5 | 54.0 | 52.4 | 51.5 | 58.3 | 58.6 |
| Vehicle Noise: | 59.0 | 56.6 | 55.0 | 53.8 | 60.7 | 61.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 15 | 32 | 69 | 148 |
| CNEL: | 15 | 33 | 72 | 155 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Eucalyptus St.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 1,801 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 169 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 50 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 85.53% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.58% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 7.89% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| 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: | 71.78 | -11.11 | 0.79 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -22.25 | 0.82 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -21.46 | 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: | 60.3 | 57.7 | 56.8 | 55.0 | 61.9 | 62.2 |
| Medium Trucks: | 59.8 | 57.6 | 55.0 | 54.1 | 61.1 | 61.4 |
| Heavy Trucks: | 64.6 | 62.0 | 60.4 | 59.5 | 66.3 | 66.6 |
| Vehicle Noise: | 66.9 | 64.4 | 62.8 | 61.6 | 68.5 | 68.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 40 | 86 | 184 | 397 |
| CNEL: | 42 | 90 | 193 | 416 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Phelan Rd.
*Road Segment:* w/o Baldy Mesa Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 15,930 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,494 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.20% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.18% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.62% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.71 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.40 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.61 | 0.41 | -1.20 | -5.41 | 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 | 66.7 | 65.8 | 64.0 | 70.9 | 71.2 |
| Medium Trucks: | 69.2 | 67.0 | 64.4 | 63.5 | 70.5 | 70.8 |
| Heavy Trucks: | 74.0 | 71.5 | 69.8 | 68.9 | 75.7 | 76.0 |
| Vehicle Noise: | 76.2 | 73.8 | 72.1 | 71.0 | 77.8 | 78.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 173 | 373 | 805 | 1,733 |
| CNEL: | 182 | 391 | 843 | 1,816 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Phelan Rd.
*Road Segment:* w/o Verbena Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 16,311 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,530 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.67% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.97% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.36% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.59 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.43 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.64 | 0.41 | -1.20 | -5.41 | 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 | 66.8 | 65.9 | 64.1 | 71.0 | 71.3 |
| Medium Trucks: | 69.2 | 67.0 | 64.4 | 63.5 | 70.5 | 70.8 |
| Heavy Trucks: | 74.0 | 71.4 | 69.8 | 68.9 | 75.7 | 76.0 |
| Vehicle Noise: | 76.2 | 73.8 | 72.1 | 71.0 | 77.8 | 78.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 173 | 374 | 805 | 1,735 |
| CNEL: | 182 | 391 | 843 | 1,817 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Phelan Rd.
*Road Segment:* w/o Bellflower St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 16,827 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,578 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.73% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.94% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.33% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.45 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.31 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.52 | 0.41 | -1.20 | -5.41 | 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 | 66.9 | 66.1 | 64.2 | 71.1 | 71.5 |
| Medium Trucks: | 69.3 | 67.1 | 64.5 | 63.6 | 70.6 | 70.9 |
| Heavy Trucks: | 74.1 | 71.6 | 69.9 | 69.0 | 75.8 | 76.1 |
| Vehicle Noise: | 76.3 | 73.9 | 72.2 | 71.1 | 78.0 | 78.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 177 | 381 | 820 | 1,767 |
| CNEL: | 185 | 399 | 859 | 1,851 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Phelan Rd.
Road Segment: e/o Dwy. 1
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 17,398 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 1,632 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 48 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 52.0 feet |
| Centerline Dist. to Observer: | 52.0 feet |
| Barrier Distance to Observer: | 0.0 feet |
| Observer Height (Above Pad): | 5.0 feet |
| Pad Elevation: | 0.0 feet |
| Road Elevation: | 0.0 feet |
| Road Grade: | 0.0% |
| Left View: | -90.0 degrees |
| Right View: | 90.0 degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.13% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.25% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.62% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -1.33 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.98 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -11.23 | 0.41 | -1.20 | -5.41 | 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 | 67.1 | 66.2 | 64.4 | 71.2 | 71.6 |
| Medium Trucks: | 69.6 | 67.4 | 64.9 | 63.9 | 71.0 | 71.2 |
| Heavy Trucks: | 74.4 | 71.9 | 70.2 | 69.3 | 76.1 | 76.4 |
| Vehicle Noise: | 76.6 | 74.1 | 72.5 | 71.4 | 78.2 | 78.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 184 | 397 | 854 | 1,840 |
| CNEL: | 193 | 415 | 895 | 1,928 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Main St.
Road Segment: w/o Mesa Linda St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 25,964 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,435 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 92 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 80.12% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 9.50% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 10.39% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.61 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.65 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.26 | 1.58 | -1.20 | -5.34 | 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 | 68.6 | 67.7 | 65.9 | 72.8 | 73.1 |
| Medium Trucks: | 72.7 | 70.5 | 67.9 | 67.0 | 74.0 | 74.3 |
| Heavy Trucks: | 77.5 | 75.0 | 73.3 | 72.4 | 79.2 | 79.5 |
| Vehicle Noise: | 79.4 | 77.0 | 75.3 | 74.2 | 81.1 | 81.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 328 | 707 | 1,523 | 3,281 |
| CNEL: | 343 | 740 | 1,594 | 3,435 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Main St.
Road Segment: w/o Catabra Rd.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 27,767 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,605 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 92 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 80.36% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 9.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 10.28% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.91 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.43 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.02 | 1.58 | -1.20 | -5.34 | 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 | 68.9 | 68.0 | 66.2 | 73.1 | 73.4 |
| Medium Trucks: | 73.0 | 70.8 | 68.2 | 67.3 | 74.3 | 74.6 |
| Heavy Trucks: | 77.7 | 75.2 | 73.6 | 72.7 | 79.5 | 79.8 |
| Vehicle Noise: | 79.7 | 77.2 | 75.5 | 74.5 | 81.3 | 81.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 341 | 735 | 1,583 | 3,411 |
| CNEL: | 357 | 769 | 1,658 | 3,571 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing + Project
Road Name: Main St.
Road Segment: e/o Key Point Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 35,035 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,286 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 92 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 82.80% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.98% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 9.22% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.05 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.11 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.48 | 1.58 | -1.20 | -5.34 | 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 | 70.0 | 69.2 | 67.3 | 74.2 | 74.6 |
| Medium Trucks: | 73.3 | 71.1 | 68.5 | 67.6 | 74.6 | 74.9 |
| Heavy Trucks: | 78.3 | 75.8 | 74.1 | 73.2 | 80.0 | 80.3 |
| Vehicle Noise: | 80.3 | 77.8 | 76.1 | 75.0 | 81.9 | 82.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 373 | 804 | 1,733 | 3,734 |
| CNEL: | 391 | 842 | 1,815 | 3,910 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Main St.
*Road Segment:* e/o Mariposa Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 40,497 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,799 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.19% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.19% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.62% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.75 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.93 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.14 | 1.20 | -1.20 | -5.34 | 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: | 72.9 | 70.4 | 69.5 | 67.7 | 74.5 | 74.9 |
| Medium Trucks: | 73.1 | 70.9 | 68.3 | 67.4 | 74.4 | 74.7 |
| Heavy Trucks: | 78.2 | 75.7 | 74.1 | 73.2 | 80.0 | 80.3 |
| Vehicle Noise: | 80.3 | 77.8 | 76.2 | 75.0 | 81.9 | 82.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 374 | 805 | 1,734 | 3,735 |
| CNEL: | 391 | 843 | 1,816 | 3,912 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Main St.
*Road Segment:* w/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 42,022 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,942 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.18% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.19% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.63% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.91 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.77 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.98 | 1.20 | -1.20 | -5.34 | 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 | 70.5 | 69.7 | 67.8 | 74.7 | 75.0 |
| Medium Trucks: | 73.2 | 71.0 | 68.5 | 67.6 | 74.6 | 74.8 |
| Heavy Trucks: | 78.4 | 75.9 | 74.2 | 73.3 | 80.1 | 80.4 |
| Vehicle Noise: | 80.4 | 78.0 | 76.3 | 75.2 | 82.1 | 82.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 383 | 825 | 1,778 | 3,830 |
| CNEL: | 401 | 864 | 1,862 | 4,011 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Main St.
*Road Segment:* e/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 33,840 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,174 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.09% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.23% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.68% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.97 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.68 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.89 | 1.20 | -1.20 | -5.34 | 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 | 69.6 | 68.7 | 66.9 | 73.7 | 74.1 |
| Medium Trucks: | 72.3 | 70.1 | 67.5 | 66.6 | 73.6 | 73.9 |
| Heavy Trucks: | 77.5 | 75.0 | 73.3 | 72.4 | 79.2 | 79.5 |
| Vehicle Noise: | 79.5 | 77.1 | 75.4 | 74.3 | 81.2 | 81.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 333 | 716 | 1,543 | 3,325 |
| CNEL: | 348 | 750 | 1,616 | 3,482 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Main St.
*Road Segment:* e/o Topaz Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 30,760 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,885 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.96% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.29% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.74% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.13 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.48 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.69 | 1.73 | -1.20 | -5.30 | 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: | 73.4 | 70.8 | 70.0 | 68.1 | 75.0 | 75.4 |
| Medium Trucks: | 73.5 | 71.3 | 68.7 | 67.8 | 74.8 | 75.1 |
| Heavy Trucks: | 78.2 | 75.7 | 74.1 | 73.2 | 80.0 | 80.3 |
| Vehicle Noise: | 80.4 | 78.0 | 76.3 | 75.2 | 82.1 | 82.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 414 | 893 | 1,924 | 4,145 |
| CNEL: | 434 | 935 | 2,015 | 4,341 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Sultana St.
*Road Segment:* e/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 4,312 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 405 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.53% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.03% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.44% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -5.99 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -16.78 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -15.99 | 3.70 | -1.20 | -5.77 | 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: | 63.0 | 60.4 | 59.5 | 57.7 | 64.6 | 64.9 |
| Medium Trucks: | 63.4 | 61.2 | 58.7 | 57.8 | 64.8 | 65.0 |
| Heavy Trucks: | 69.5 | 67.0 | 65.3 | 64.4 | 71.2 | 71.5 |
| Vehicle Noise: | 71.2 | 68.7 | 67.0 | 66.0 | 72.8 | 73.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 46 | 100 | 215 | 463 |
| CNEL: | 48 | 104 | 225 | 484 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* Existing + Project
*Road Name:* Joshua St.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 4,802 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 450 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 50 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 40.0 | feet |
| Centerline Dist. to Observer: | 40.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 85.10% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.77% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.13% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 31.623 |
| Medium Trucks: | 31.342 |
| Heavy Trucks: | 31.369 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -6.87 | 2.88 | -1.20 | -4.59 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -17.86 | 2.94 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -17.07 | 2.93 | -1.20 | -5.56 | 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: | 66.6 | 64.0 | 63.1 | 61.3 | 68.2 | 68.5 |
| Medium Trucks: | 66.3 | 64.1 | 61.5 | 60.6 | 67.6 | 67.9 |
| Heavy Trucks: | 71.1 | 68.5 | 66.9 | 66.0 | 72.8 | 73.1 |
| Vehicle Noise: | 73.3 | 70.9 | 69.2 | 68.1 | 75.0 | 75.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 86 | 185 | 398 | 857 |
| CNEL: | 90 | 193 | 417 | 898 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* US Hwy. 395
*Road Segment:* n/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 28,362 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,660 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.77 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.79 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.00 | -0.18 | -1.20 | -5.32 | 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 | 68.6 | 67.7 | 65.9 | 72.8 | 73.1 |
| Medium Trucks: | 71.2 | 69.0 | 66.5 | 65.6 | 72.6 | 72.8 |
| Heavy Trucks: | 76.0 | 73.5 | 71.9 | 70.9 | 77.8 | 78.0 |
| Vehicle Noise: | 78.2 | 75.8 | 74.1 | 73.0 | 79.8 | 80.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 281 | 605 | 1,304 | 2,810 |
| CNEL: | 294 | 634 | 1,366 | 2,943 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 24,674 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,314 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.17 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.40 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.61 | -0.18 | -1.20 | -5.32 | 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 | 68.0 | 67.1 | 65.3 | 72.2 | 72.5 |
| Medium Trucks: | 70.6 | 68.4 | 65.9 | 64.9 | 72.0 | 72.2 |
| Heavy Trucks: | 75.4 | 72.9 | 71.3 | 70.3 | 77.1 | 77.4 |
| Vehicle Noise: | 77.6 | 75.1 | 73.5 | 72.4 | 79.2 | 79.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 256 | 552 | 1,189 | 2,561 |
| CNEL: | 268 | 578 | 1,245 | 2,682 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Bear Valley Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 27,178 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,549 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.59 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.98 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.19 | -0.18 | -1.20 | -5.32 | 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 | 68.4 | 67.5 | 65.7 | 72.6 | 72.9 |
| Medium Trucks: | 71.1 | 68.9 | 66.3 | 65.4 | 72.4 | 72.7 |
| Heavy Trucks: | 75.8 | 73.3 | 71.7 | 70.7 | 77.6 | 77.9 |
| Vehicle Noise: | 78.0 | 75.6 | 73.9 | 72.8 | 79.7 | 80.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 273 | 588 | 1,268 | 2,732 |
| CNEL: | 286 | 616 | 1,328 | 2,861 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Eucalyptus St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 28,296 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,654 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.76 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.80 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.01 | -0.18 | -1.20 | -5.32 | 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 | 68.6 | 67.7 | 65.9 | 72.7 | 73.1 |
| Medium Trucks: | 71.2 | 69.0 | 66.4 | 65.5 | 72.5 | 72.8 |
| Heavy Trucks: | 76.0 | 73.5 | 71.8 | 70.9 | 77.7 | 78.0 |
| Vehicle Noise: | 78.2 | 75.7 | 74.1 | 73.0 | 79.8 | 80.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 281 | 605 | 1,302 | 2,806 |
| CNEL: | 294 | 633 | 1,364 | 2,939 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 6,519 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 611 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -5.61 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -16.18 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -15.39 | 0.41 | -1.20 | -5.41 | 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: | 65.4 | 62.8 | 61.9 | 60.1 | 67.0 | 67.3 |
| Medium Trucks: | 65.4 | 63.2 | 60.7 | 59.8 | 66.8 | 67.0 |
| Heavy Trucks: | 70.2 | 67.7 | 66.1 | 65.1 | 72.0 | 72.2 |
| Vehicle Noise: | 72.4 | 70.0 | 68.3 | 67.2 | 74.0 | 74.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 97 | 208 | 449 | 967 |
| CNEL: | 101 | 218 | 470 | 1,013 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* s/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 2,485 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 233 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -9.80 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -20.36 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -19.57 | 0.41 | -1.20 | -5.41 | 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: | 61.2 | 58.6 | 57.7 | 55.9 | 62.8 | 63.1 |
| Medium Trucks: | 61.2 | 59.1 | 56.5 | 55.6 | 62.6 | 62.8 |
| Heavy Trucks: | 66.0 | 63.5 | 61.9 | 60.9 | 67.8 | 68.1 |
| Vehicle Noise: | 68.2 | 65.8 | 64.1 | 63.0 | 69.9 | 70.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 51 | 110 | 236 | 509 |
| CNEL: | 53 | 115 | 247 | 533 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Verbena Rd.
Road Segment: n/o Phelan Rd.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 200 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 19 vehicles |
| Vehicle Speed: | 40 mph |
| Near/Far Lane Distance: | 24 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 25.0 feet |
| Centerline Dist. to Observer: | 25.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 22.494 |
| Medium Trucks: | 22.098 |
| Heavy Trucks: | 22.136 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -19.37 | 5.10 | -1.20 | -4.41 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -29.93 | 5.22 | -1.20 | -4.85 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -29.14 | 5.20 | -1.20 | -5.94 | 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: | 51.0 | 48.5 | 47.6 | 45.8 | 52.6 | 53.0 |
| Medium Trucks: | 51.8 | 49.6 | 47.0 | 46.1 | 53.1 | 53.4 |
| Heavy Trucks: | 57.9 | 55.3 | 53.7 | 52.8 | 59.6 | 59.9 |
| Vehicle Noise: | 59.5 | 57.0 | 55.3 | 54.3 | 61.1 | 61.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 6 | 14 | 30 | 64 |
| CNEL: | 7 | 14 | 31 | 67 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: US Hwy. 395
Road Segment: s/o Yucca Terrace Dr.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 32,744 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,071 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.40 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.17 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.38 | 1.73 | -1.20 | -5.30 | 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 | 71.1 | 70.2 | 68.4 | 75.3 | 75.6 |
| Medium Trucks: | 73.8 | 71.6 | 69.0 | 68.1 | 75.1 | 75.4 |
| Heavy Trucks: | 78.5 | 76.0 | 74.4 | 73.5 | 80.3 | 80.6 |
| Vehicle Noise: | 80.7 | 78.3 | 76.6 | 75.5 | 82.4 | 82.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 434 | 935 | 2,015 | 4,342 |
| CNEL: | 455 | 980 | 2,111 | 4,547 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: US Hwy. 395
Road Segment: s/o Main St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 27,011 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,534 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.56 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.00 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.21 | 1.73 | -1.20 | -5.30 | 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 | 70.3 | 69.4 | 67.6 | 74.4 | 74.8 |
| Medium Trucks: | 72.9 | 70.7 | 68.1 | 67.2 | 74.3 | 74.5 |
| Heavy Trucks: | 77.7 | 75.2 | 73.5 | 72.6 | 79.4 | 79.7 |
| Vehicle Noise: | 79.9 | 77.4 | 75.8 | 74.7 | 81.5 | 81.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 382 | 823 | 1,772 | 3,819 |
| CNEL: | 400 | 862 | 1,856 | 4,000 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: US Hwy. 395
Road Segment: s/o Poplar St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 27,426 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,573 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.63 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.94 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.15 | 1.73 | -1.20 | -5.30 | 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: | 72.9 | 70.3 | 69.5 | 67.6 | 74.5 | 74.9 |
| Medium Trucks: | 73.0 | 70.8 | 68.2 | 67.3 | 74.3 | 74.6 |
| Heavy Trucks: | 77.8 | 75.3 | 73.6 | 72.7 | 79.5 | 79.8 |
| Vehicle Noise: | 80.0 | 77.5 | 75.8 | 74.7 | 81.6 | 81.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 386 | 831 | 1,791 | 3,858 |
| CNEL: | 404 | 870 | 1,875 | 4,040 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: US Hwy. 395
Road Segment: s/o Joshua St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 28,574 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,680 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.81 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.76 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.97 | 1.73 | -1.20 | -5.30 | 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 | 70.5 | 69.6 | 67.8 | 74.7 | 75.0 |
| Medium Trucks: | 73.2 | 71.0 | 68.4 | 67.5 | 74.5 | 74.8 |
| Heavy Trucks: | 78.0 | 75.4 | 73.8 | 72.9 | 79.7 | 80.0 |
| Vehicle Noise: | 80.2 | 77.7 | 76.0 | 74.9 | 81.8 | 82.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 396 | 854 | 1,840 | 3,965 |
| CNEL: | 415 | 895 | 1,927 | 4,152 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Escondido Av.
Road Segment: n/o Sultana St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,770 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,230 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.42 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.14 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.35 | 2.25 | -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: | 71.6 | 69.1 | 68.2 | 66.4 | 73.2 | 73.6 |
| Medium Trucks: | 71.9 | 69.7 | 67.1 | 66.2 | 73.2 | 73.5 |
| Heavy Trucks: | 77.1 | 74.6 | 72.9 | 72.0 | 78.8 | 79.1 |
| Vehicle Noise: | 79.1 | 76.6 | 75.0 | 73.9 | 80.7 | 81.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 259 | 559 | 1,204 | 2,594 |
| CNEL: | 272 | 585 | 1,261 | 2,716 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Escondido Av.
Road Segment: s/o Sultana St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,770 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,230 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.42 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.14 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.35 | 2.25 | -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: | 71.6 | 69.1 | 68.2 | 66.4 | 73.2 | 73.6 |
| Medium Trucks: | 71.9 | 69.7 | 67.1 | 66.2 | 73.2 | 73.5 |
| Heavy Trucks: | 77.1 | 74.6 | 72.9 | 72.0 | 78.8 | 79.1 |
| Vehicle Noise: | 79.1 | 76.6 | 75.0 | 73.9 | 80.7 | 81.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 259 | 559 | 1,204 | 2,594 |
| CNEL: | 272 | 585 | 1,261 | 2,716 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Topaz Av.
Road Segment: n/o Main St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 3,343 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 314 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -7.13 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -17.69 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -16.90 | 3.70 | -1.20 | -5.77 | 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: | 61.8 | 59.2 | 58.4 | 56.5 | 63.4 | 63.8 |
| Medium Trucks: | 62.5 | 60.3 | 57.7 | 56.8 | 63.9 | 64.1 |
| Heavy Trucks: | 68.6 | 66.1 | 64.4 | 63.5 | 70.3 | 70.6 |
| Vehicle Noise: | 70.2 | 67.8 | 66.1 | 65.0 | 71.9 | 72.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 40 | 86 | 186 | 400 |
| CNEL: | 42 | 90 | 194 | 419 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Luna Rd.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 7,999 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 750 vehicles |
| Vehicle Speed: | 40 mph |
| Near/Far Lane Distance: | 24 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 34.0 feet |
| Centerline Dist. to Observer: | 34.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 32.202 |
| Medium Trucks: | 31.927 |
| Heavy Trucks: | 31.953 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -3.34 | 2.76 | -1.20 | -4.53 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -13.91 | 2.82 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -13.12 | 2.81 | -1.20 | -5.67 | 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: | 64.7 | 62.2 | 61.3 | 59.5 | 66.3 | 66.7 |
| Medium Trucks: | 65.4 | 63.2 | 60.6 | 59.7 | 66.7 | 67.0 |
| Heavy Trucks: | 71.5 | 69.0 | 67.3 | 66.4 | 73.2 | 73.5 |
| Vehicle Noise: | 73.1 | 70.7 | 69.0 | 67.9 | 74.8 | 75.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 71 | 153 | 329 | 708 |
| CNEL: | 74 | 160 | 344 | 741 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Bear Valley Rd.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 13,776 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 1,292 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 62.0 feet |
| Centerline Dist. to Observer: | 62.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -2.36 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.93 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -12.14 | -0.18 | -1.20 | -5.32 | 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 | 65.4 | 64.6 | 62.7 | 69.6 | 70.0 |
| Medium Trucks: | 68.1 | 65.9 | 63.3 | 62.4 | 69.4 | 69.7 |
| Heavy Trucks: | 72.9 | 70.4 | 68.7 | 67.8 | 74.6 | 74.9 |
| Vehicle Noise: | 75.1 | 72.6 | 71.0 | 69.8 | 76.7 | 77.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 174 | 374 | 806 | 1,737 |
| CNEL: | 182 | 392 | 844 | 1,819 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Eucalyptus St.
*Road Segment:* w/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 341 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 32 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 62.0 feet |
| Centerline Dist. to Observer: | 62.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -18.43 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -28.99 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -28.20 | -0.18 | -1.20 | -5.32 | 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: | 52.0 | 49.4 | 48.5 | 46.7 | 53.6 | 53.9 |
| Medium Trucks: | 52.0 | 49.8 | 47.3 | 46.3 | 53.4 | 53.6 |
| Heavy Trucks: | 56.8 | 54.3 | 52.7 | 51.7 | 58.6 | 58.8 |
| Vehicle Noise: | 59.0 | 56.6 | 54.9 | 53.8 | 60.6 | 60.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 15 | 32 | 68 | 147 |
| CNEL: | 15 | 33 | 72 | 154 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Eucalyptus St.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 1,691 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 159 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 50 feet |

**Site Data**

| | |
|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| 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: | 71.78 | -11.47 | 0.79 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -22.04 | 0.82 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -21.25 | 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: | 59.9 | 57.3 | 56.5 | 54.6 | 61.5 | 61.9 |
| Medium Trucks: | 60.0 | 57.8 | 55.2 | 54.3 | 61.3 | 61.6 |
| Heavy Trucks: | 64.8 | 62.2 | 60.6 | 59.7 | 66.5 | 66.8 |
| Vehicle Noise: | 67.0 | 64.5 | 62.8 | 61.7 | 68.6 | 68.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 40 | 87 | 187 | 403 |
| CNEL: | 42 | 91 | 196 | 422 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Baldy Mesa Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 19,241 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,805 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.91 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.48 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.69 | 0.41 | -1.20 | -5.41 | 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: | 70.1 | 67.5 | 66.6 | 64.8 | 71.7 | 72.0 |
| Medium Trucks: | 70.1 | 67.9 | 65.4 | 64.5 | 71.5 | 71.7 |
| Heavy Trucks: | 74.9 | 72.4 | 70.8 | 69.8 | 76.7 | 76.9 |
| Vehicle Noise: | 77.1 | 74.7 | 73.0 | 71.9 | 78.7 | 79.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 199 | 429 | 924 | 1,990 |
| CNEL: | 208 | 449 | 968 | 2,085 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Verbena Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 19,141 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,795 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.93 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.50 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.71 | 0.41 | -1.20 | -5.41 | 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 | 67.5 | 66.6 | 64.8 | 71.6 | 72.0 |
| Medium Trucks: | 70.1 | 67.9 | 65.3 | 64.4 | 71.4 | 71.7 |
| Heavy Trucks: | 74.9 | 72.4 | 70.7 | 69.8 | 76.6 | 76.9 |
| Vehicle Noise: | 77.1 | 74.6 | 73.0 | 71.9 | 78.7 | 79.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 198 | 427 | 921 | 1,984 |
| CNEL: | 208 | 448 | 964 | 2,077 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Bellflower St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 19,579 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,837 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.84 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.40 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.61 | 0.41 | -1.20 | -5.41 | 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: | 70.1 | 67.6 | 66.7 | 64.9 | 71.7 | 72.1 |
| Medium Trucks: | 70.2 | 68.0 | 65.4 | 64.5 | 71.5 | 71.8 |
| Heavy Trucks: | 75.0 | 72.5 | 70.8 | 69.9 | 76.7 | 77.0 |
| Vehicle Noise: | 77.2 | 74.7 | 73.1 | 72.0 | 78.8 | 79.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 201 | 434 | 935 | 2,014 |
| CNEL: | 211 | 454 | 979 | 2,109 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Phelan Rd.
*Road Segment:* e/o Dwy. 1
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,051 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,881 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.73 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.30 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.51 | 0.41 | -1.20 | -5.41 | 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 | 67.7 | 66.8 | 65.0 | 71.8 | 72.2 |
| Medium Trucks: | 70.3 | 68.1 | 65.5 | 64.6 | 71.6 | 71.9 |
| Heavy Trucks: | 75.1 | 72.6 | 70.9 | 70.0 | 76.8 | 77.1 |
| Vehicle Noise: | 77.3 | 74.8 | 73.2 | 72.1 | 78.9 | 79.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 205 | 441 | 950 | 2,046 |
| CNEL: | 214 | 462 | 995 | 2,143 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Main St.
*Road Segment:* w/o Mesa Linda St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,919 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,244 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.45 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.12 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.33 | 1.58 | -1.20 | -5.34 | 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 | 68.4 | 67.6 | 65.7 | 72.6 | 72.9 |
| Medium Trucks: | 71.3 | 69.1 | 66.5 | 65.6 | 72.6 | 72.9 |
| Heavy Trucks: | 76.4 | 73.9 | 72.3 | 71.3 | 78.2 | 78.5 |
| Vehicle Noise: | 78.4 | 76.0 | 74.3 | 73.2 | 80.1 | 80.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 282 | 607 | 1,308 | 2,818 |
| CNEL: | 295 | 636 | 1,370 | 2,951 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Main St.
*Road Segment:* w/o Catabra Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 26,165 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,454 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.84 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.73 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.94 | 1.58 | -1.20 | -5.34 | 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 | 68.8 | 67.9 | 66.1 | 73.0 | 73.3 |
| Medium Trucks: | 71.7 | 69.5 | 66.9 | 66.0 | 73.0 | 73.3 |
| Heavy Trucks: | 76.8 | 74.3 | 72.7 | 71.7 | 78.6 | 78.8 |
| Vehicle Noise: | 78.8 | 76.4 | 74.7 | 73.6 | 80.5 | 80.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 299 | 645 | 1,389 | 2,992 |
| CNEL: | 313 | 675 | 1,454 | 3,133 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Main St.
*Road Segment:* e/o Key Point Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 38,235 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,586 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.48 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.08 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.29 | 1.58 | -1.20 | -5.34 | 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: | 73.0 | 70.5 | 69.6 | 67.8 | 74.6 | 75.0 |
| Medium Trucks: | 73.3 | 71.1 | 68.5 | 67.6 | 74.6 | 74.9 |
| Heavy Trucks: | 78.5 | 75.9 | 74.3 | 73.4 | 80.2 | 80.5 |
| Vehicle Noise: | 80.5 | 78.0 | 76.3 | 75.3 | 82.1 | 82.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 385 | 830 | 1,788 | 3,852 |
| CNEL: | 403 | 869 | 1,873 | 4,034 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYC (2021)
*Road Name:* Main St.
*Road Segment:* e/o Mariposa Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 45,113 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 4,232 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.20 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.36 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.57 | 1.20 | -1.20 | -5.34 | 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: | 73.4 | 70.8 | 69.9 | 68.1 | 75.0 | 75.3 |
| Medium Trucks: | 73.6 | 71.4 | 68.9 | 68.0 | 75.0 | 75.2 |
| Heavy Trucks: | 78.8 | 76.3 | 74.6 | 73.7 | 80.5 | 80.8 |
| Vehicle Noise: | 80.8 | 78.4 | 76.7 | 75.6 | 82.5 | 82.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 406 | 876 | 1,886 | 4,064 |
| CNEL: | 426 | 917 | 1,975 | 4,256 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Main St.
Road Segment: w/o Escondido Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 46,700 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 4,380 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.35 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.21 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.42 | 1.20 | -1.20 | -5.34 | 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 | 71.0 | 70.1 | 68.3 | 75.1 | 75.5 |
| Medium Trucks: | 73.8 | 71.6 | 69.0 | 68.1 | 75.1 | 75.4 |
| Heavy Trucks: | 79.0 | 76.4 | 74.8 | 73.9 | 80.7 | 81.0 |
| Vehicle Noise: | 81.0 | 78.5 | 76.8 | 75.7 | 82.6 | 82.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 416 | 896 | 1,930 | 4,159 |
| CNEL: | 436 | 938 | 2,021 | 4,355 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Main St.
Road Segment: e/o Escondido Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 37,911 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,556 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.45 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.12 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.33 | 1.20 | -1.20 | -5.34 | 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 | 70.1 | 69.2 | 67.3 | 74.2 | 74.6 |
| Medium Trucks: | 72.9 | 70.7 | 68.1 | 67.2 | 74.2 | 74.5 |
| Heavy Trucks: | 78.1 | 75.5 | 73.9 | 73.0 | 79.8 | 80.1 |
| Vehicle Noise: | 80.1 | 77.6 | 75.9 | 74.8 | 81.7 | 82.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 362 | 780 | 1,680 | 3,619 |
| CNEL: | 379 | 817 | 1,759 | 3,790 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Main St.
Road Segment: e/o Topaz Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 34,673 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,252 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.65 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.92 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.13 | 1.73 | -1.20 | -5.30 | 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: | 73.9 | 71.3 | 70.5 | 68.6 | 75.5 | 75.9 |
| Medium Trucks: | 74.0 | 71.8 | 69.2 | 68.3 | 75.3 | 75.6 |
| Heavy Trucks: | 78.8 | 76.3 | 74.6 | 73.7 | 80.5 | 80.8 |
| Vehicle Noise: | 81.0 | 78.5 | 76.9 | 75.8 | 82.6 | 82.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 451 | 972 | 2,094 | 4,510 |
| CNEL: | 472 | 1,018 | 2,193 | 4,724 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Sultana St.
Road Segment: e/o Escondido Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 4,456 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 418 vehicles |
| Vehicle Speed: | 40 mph |
| Near/Far Lane Distance: | 23 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 30.0 feet |
| Centerline Dist. to Observer: | 30.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -5.88 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -16.45 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -15.66 | 3.70 | -1.20 | -5.77 | 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: | 63.1 | 60.5 | 59.6 | 57.8 | 64.7 | 65.0 |
| Medium Trucks: | 63.8 | 61.6 | 59.0 | 58.1 | 65.1 | 65.4 |
| Heavy Trucks: | 69.8 | 67.3 | 65.7 | 64.8 | 71.6 | 71.9 |
| Vehicle Noise: | 71.5 | 69.0 | 67.3 | 66.3 | 73.1 | 73.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 48 | 104 | 225 | 485 |
| CNEL: | 51 | 109 | 236 | 508 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYC (2021)
Road Name: Joshua St.
Road Segment: e/o US Hwy. 395

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 10,141 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 951 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 50 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 40.0 feet |
| Centerline Dist. to Observer: | 40.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 31.623 |
| Medium Trucks: | 31.342 |
| Heavy Trucks: | 31.369 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -3.69 | 2.88 | -1.20 | -4.59 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -14.26 | 2.94 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -13.47 | 2.93 | -1.20 | -5.56 | 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 | 67.2 | 66.3 | 64.5 | 71.4 | 71.7 |
| Medium Trucks: | 69.9 | 67.7 | 65.1 | 64.2 | 71.2 | 71.5 |
| Heavy Trucks: | 74.7 | 72.1 | 70.5 | 69.6 | 76.4 | 76.7 |
| Vehicle Noise: | 76.9 | 74.4 | 72.7 | 71.6 | 78.5 | 78.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 147 | 317 | 683 | 1,471 |
| CNEL: | 154 | 332 | 715 | 1,541 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2021)
Road Name: US Hwy. 395
Road Segment: n/o Luna Rd.

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 28,670 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,689 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 62.0 feet |
| Centerline Dist. to Observer: | 62.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.58% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.49% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.93% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.81 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.67 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.90 | -0.18 | -1.20 | -5.32 | 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 | 68.6 | 67.8 | 65.9 | 72.8 | 73.1 |
| Medium Trucks: | 71.4 | 69.2 | 66.6 | 65.7 | 72.7 | 73.0 |
| Heavy Trucks: | 76.1 | 73.6 | 72.0 | 71.0 | 77.9 | 78.1 |
| Vehicle Noise: | 78.3 | 75.8 | 74.2 | 73.1 | 79.9 | 80.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 285 | 614 | 1,323 | 2,850 |
| CNEL: | 298 | 643 | 1,385 | 2,985 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2021)
Road Name: US Hwy. 395
Road Segment: s/o Luna Rd.

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 25,078 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,352 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 62.0 feet |
| Centerline Dist. to Observer: | 62.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.60% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.48% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.92% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.23 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.26 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.49 | -0.18 | -1.20 | -5.32 | 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 | 68.0 | 67.2 | 65.3 | 72.2 | 72.6 |
| Medium Trucks: | 70.8 | 68.6 | 66.0 | 65.1 | 72.1 | 72.4 |
| Heavy Trucks: | 75.5 | 73.0 | 71.4 | 70.4 | 77.3 | 77.6 |
| Vehicle Noise: | 77.7 | 75.3 | 73.6 | 72.5 | 79.3 | 79.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 260 | 561 | 1,209 | 2,604 |
| CNEL: | 273 | 588 | 1,266 | 2,727 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: OYCP (2021)
Road Name: US Hwy. 395
Road Segment: s/o Bear Valley Rd.

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 27,963 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,623 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 62.0 feet |
| Centerline Dist. to Observer: | 62.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.85% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.37% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.79% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.71 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.85 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.08 | -0.18 | -1.20 | -5.32 | 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 | 68.5 | 67.7 | 65.8 | 72.7 | 73.1 |
| Medium Trucks: | 71.2 | 69.0 | 66.4 | 65.5 | 72.5 | 72.8 |
| Heavy Trucks: | 75.9 | 73.4 | 71.8 | 70.9 | 77.7 | 78.0 |
| Vehicle Noise: | 78.1 | 75.7 | 74.0 | 72.9 | 79.8 | 80.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 278 | 599 | 1,290 | 2,779 |
| CNEL: | 291 | 627 | 1,351 | 2,911 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Eucalyptus St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 29,367 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,755 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.00% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.29% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.70% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.93 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.68 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.91 | -0.18 | -1.20 | -5.32 | 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: | 71.3 | 68.7 | 67.9 | 66.0 | 72.9 | 73.3 |
| Medium Trucks: | 71.4 | 69.2 | 66.6 | 65.7 | 72.7 | 73.0 |
| Heavy Trucks: | 76.1 | 73.6 | 71.9 | 71.0 | 77.8 | 78.1 |
| Vehicle Noise: | 78.3 | 75.9 | 74.2 | 73.1 | 80.0 | 80.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 286 | 616 | 1,326 | 2,857 |
| CNEL: | 299 | 645 | 1,389 | 2,993 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 6,804 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 638 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.49% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.05% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.46% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -5.39 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -16.18 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -15.39 | 0.41 | -1.20 | -5.41 | 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 | 63.0 | 62.1 | 60.3 | 67.2 | 67.5 |
| Medium Trucks: | 65.4 | 63.2 | 60.7 | 59.8 | 66.8 | 67.0 |
| Heavy Trucks: | 70.2 | 67.7 | 66.1 | 65.1 | 72.0 | 72.2 |
| Vehicle Noise: | 72.5 | 70.0 | 68.3 | 67.2 | 74.1 | 74.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 97 | 210 | 452 | 974 |
| CNEL: | 102 | 220 | 473 | 1,020 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* s/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 2,676 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 251 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.97% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.83% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.20% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -9.42 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -20.36 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -19.57 | 0.41 | -1.20 | -5.41 | 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: | 61.5 | 59.0 | 58.1 | 56.3 | 63.1 | 63.5 |
| Medium Trucks: | 61.2 | 59.1 | 56.5 | 55.6 | 62.6 | 62.8 |
| Heavy Trucks: | 66.0 | 63.5 | 61.9 | 60.9 | 67.8 | 68.1 |
| Vehicle Noise: | 68.3 | 65.8 | 64.2 | 63.1 | 69.9 | 70.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 51 | 111 | 239 | 515 |
| CNEL: | 54 | 116 | 250 | 539 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Verbena Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 295 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 28 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 25.0 | feet |
| Centerline Dist. to Observer: | 25.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 89.04% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 4.98% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 5.98% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 22.494 |
| Medium Trucks: | 22.098 |
| Heavy Trucks: | 22.136 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -17.41 | 5.10 | -1.20 | -4.41 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -29.93 | 5.22 | -1.20 | -4.85 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -29.14 | 5.20 | -1.20 | -5.94 | 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: | 53.0 | 50.4 | 49.6 | 47.7 | 54.6 | 55.0 |
| Medium Trucks: | 51.8 | 49.6 | 47.0 | 46.1 | 53.1 | 53.4 |
| Heavy Trucks: | 57.9 | 55.3 | 53.7 | 52.8 | 59.6 | 59.9 |
| Vehicle Noise: | 59.8 | 57.4 | 55.7 | 54.6 | 61.5 | 61.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 7 | 15 | 31 | 68 |
| CNEL: | 7 | 15 | 33 | 71 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Yucca Terrace Dr.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 36,122 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,388 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.10% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.80% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 9.10% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.79 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.49 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -7.82 | 1.73 | -1.20 | -5.30 | 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: | 74.1 | 71.5 | 70.6 | 68.8 | 75.7 | 76.0 |
| Medium Trucks: | 74.4 | 72.3 | 69.7 | 68.8 | 75.8 | 76.0 |
| Heavy Trucks: | 79.1 | 76.6 | 74.9 | 74.0 | 80.8 | 81.1 |
| Vehicle Noise: | 81.3 | 78.8 | 77.2 | 76.1 | 82.9 | 83.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 472 | 1,018 | 2,192 | 4,723 |
| CNEL: | 495 | 1,066 | 2,296 | 4,946 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Main St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 28,917 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,712 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.88% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.87% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.25% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.91 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.00 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.21 | 1.73 | -1.20 | -5.30 | 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 | 70.6 | 69.7 | 67.9 | 74.8 | 75.1 |
| Medium Trucks: | 72.9 | 70.7 | 68.1 | 67.2 | 74.3 | 74.5 |
| Heavy Trucks: | 77.7 | 75.2 | 73.5 | 72.6 | 79.4 | 79.7 |
| Vehicle Noise: | 80.0 | 77.5 | 75.9 | 74.7 | 81.6 | 81.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 386 | 832 | 1,792 | 3,860 |
| CNEL: | 404 | 871 | 1,877 | 4,044 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Poplar St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 29,332 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,751 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.87% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.88% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.25% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.97 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.94 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.15 | 1.73 | -1.20 | -5.30 | 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 | 70.7 | 69.8 | 68.0 | 74.8 | 75.2 |
| Medium Trucks: | 73.0 | 70.8 | 68.2 | 67.3 | 74.3 | 74.6 |
| Heavy Trucks: | 77.8 | 75.3 | 73.6 | 72.7 | 79.5 | 79.8 |
| Vehicle Noise: | 80.0 | 77.6 | 75.9 | 74.8 | 81.7 | 82.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 390 | 840 | 1,810 | 3,899 |
| CNEL: | 408 | 880 | 1,896 | 4,084 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Joshua St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 30,099 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,823 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.63% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.99% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.38% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.07 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -9.76 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.97 | 1.73 | -1.20 | -5.30 | 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 | 70.8 | 69.9 | 68.1 | 74.9 | 75.3 |
| Medium Trucks: | 73.2 | 71.0 | 68.4 | 67.5 | 74.5 | 74.8 |
| Heavy Trucks: | 78.0 | 75.4 | 73.8 | 72.9 | 79.7 | 80.0 |
| Vehicle Noise: | 80.2 | 77.7 | 76.1 | 75.0 | 81.8 | 82.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 400 | 861 | 1,855 | 3,997 |
| CNEL: | 419 | 902 | 1,944 | 4,187 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Escondido Av.
*Road Segment:* n/o Sultana St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 24,151 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,265 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.07% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.24% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.69% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.50 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.14 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.35 | 2.25 | -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: | 71.7 | 69.1 | 68.3 | 66.4 | 73.3 | 73.7 |
| Medium Trucks: | 71.9 | 69.7 | 67.1 | 66.2 | 73.2 | 73.5 |
| Heavy Trucks: | 77.1 | 74.6 | 72.9 | 72.0 | 78.8 | 79.1 |
| Vehicle Noise: | 79.1 | 76.6 | 75.0 | 73.9 | 80.7 | 81.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 260 | 560 | 1,207 | 2,600 |
| CNEL: | 272 | 587 | 1,264 | 2,723 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Escondido Av.
*Road Segment:* s/o Sultana St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,960 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,247 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.94% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.30% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.76% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.46 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -10.14 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.35 | 2.25 | -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: | 71.7 | 69.1 | 68.2 | 66.4 | 73.3 | 73.6 |
| Medium Trucks: | 71.9 | 69.7 | 67.1 | 66.2 | 73.2 | 73.5 |
| Heavy Trucks: | 77.1 | 74.6 | 72.9 | 72.0 | 78.8 | 79.1 |
| Vehicle Noise: | 79.1 | 76.6 | 75.0 | 73.9 | 80.7 | 81.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 260 | 559 | 1,205 | 2,597 |
| CNEL: | 272 | 586 | 1,262 | 2,719 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Topaz Av.
*Road Segment:* n/o Main St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 3,438 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 322 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.26% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.16% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.58% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -6.98 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -17.69 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -16.90 | 3.70 | -1.20 | -5.77 | 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: | 62.0 | 59.4 | 58.5 | 56.7 | 63.6 | 63.9 |
| Medium Trucks: | 62.5 | 60.3 | 57.7 | 56.8 | 63.9 | 64.1 |
| Heavy Trucks: | 68.6 | 66.1 | 64.4 | 63.5 | 70.3 | 70.6 |
| Vehicle Noise: | 70.3 | 67.8 | 66.1 | 65.0 | 71.9 | 72.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 40 | 87 | 186 | 402 |
| CNEL: | 42 | 91 | 195 | 420 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Luna Rd.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 8,094 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 759 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 34.0 | feet |
| Centerline Dist. to Observer: | 34.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.00% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.27% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.72% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 32.202 |
| Medium Trucks: | 31.927 |
| Heavy Trucks: | 31.953 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -3.28 | 2.76 | -1.20 | -4.53 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -13.91 | 2.82 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -13.12 | 2.81 | -1.20 | -5.67 | 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 | 62.2 | 61.4 | 59.5 | 66.4 | 66.7 |
| Medium Trucks: | 65.4 | 63.2 | 60.6 | 59.7 | 66.7 | 67.0 |
| Heavy Trucks: | 71.5 | 69.0 | 67.3 | 66.4 | 73.2 | 73.5 |
| Vehicle Noise: | 73.1 | 70.7 | 69.0 | 67.9 | 74.8 | 75.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 71 | 153 | 329 | 709 |
| CNEL: | 74 | 160 | 345 | 742 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Bear Valley Rd.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 14,158 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,328 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.25% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.16% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.59% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -2.22 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -12.93 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -12.14 | -0.18 | -1.20 | -5.32 | 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 | 65.6 | 64.7 | 62.9 | 69.8 | 70.1 |
| Medium Trucks: | 68.1 | 65.9 | 63.3 | 62.4 | 69.4 | 69.7 |
| Heavy Trucks: | 72.9 | 70.4 | 68.7 | 67.8 | 74.6 | 74.9 |
| Vehicle Noise: | 75.1 | 72.6 | 71.0 | 69.9 | 76.7 | 77.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 174 | 376 | 810 | 1,744 |
| CNEL: | 183 | 394 | 848 | 1,827 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Eucalyptus St.
*Road Segment:* w/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 436 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 41 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 87.35% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 5.75% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 6.90% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -17.18 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -28.99 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -28.20 | -0.18 | -1.20 | -5.32 | 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: | 53.2 | 50.6 | 49.8 | 47.9 | 54.8 | 55.2 |
| Medium Trucks: | 52.0 | 49.8 | 47.3 | 46.3 | 53.4 | 53.6 |
| Heavy Trucks: | 56.8 | 54.3 | 52.7 | 51.7 | 58.6 | 58.8 |
| Vehicle Noise: | 59.3 | 56.8 | 55.2 | 54.1 | 60.9 | 61.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 15 | 33 | 71 | 154 |
| CNEL: | 16 | 35 | 75 | 161 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Eucalyptus St.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 1,882 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 177 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 50 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 85.45% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.61% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 7.93% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| 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: | 71.78 | -10.92 | 0.79 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -22.04 | 0.82 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -21.25 | 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: | 60.4 | 57.9 | 57.0 | 55.2 | 62.0 | 62.4 |
| Medium Trucks: | 60.0 | 57.8 | 55.2 | 54.3 | 61.3 | 61.6 |
| Heavy Trucks: | 64.8 | 62.2 | 60.6 | 59.7 | 66.5 | 66.8 |
| Vehicle Noise: | 67.1 | 64.6 | 63.0 | 61.8 | 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 | 199 | 429 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Baldy Mesa Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 19,622 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,841 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.13% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.22% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.66% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.81 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.48 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.69 | 0.41 | -1.20 | -5.41 | 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 | 67.6 | 66.7 | 64.9 | 71.8 | 72.1 |
| Medium Trucks: | 70.1 | 67.9 | 65.4 | 64.5 | 71.5 | 71.7 |
| Heavy Trucks: | 74.9 | 72.4 | 70.8 | 69.8 | 76.7 | 76.9 |
| Vehicle Noise: | 77.1 | 74.7 | 73.0 | 71.9 | 78.8 | 79.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 200 | 430 | 927 | 1,997 |
| CNEL: | 209 | 451 | 971 | 2,091 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Verbena Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 19,998 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,876 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.51% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.04% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.45% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.71 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.50 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.71 | 0.41 | -1.20 | -5.41 | 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 | 67.7 | 66.8 | 65.0 | 71.9 | 72.2 |
| Medium Trucks: | 70.1 | 67.9 | 65.3 | 64.4 | 71.4 | 71.7 |
| Heavy Trucks: | 74.9 | 72.4 | 70.7 | 69.8 | 76.6 | 76.9 |
| Vehicle Noise: | 77.1 | 74.7 | 73.0 | 71.9 | 78.8 | 79.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 200 | 430 | 927 | 1,997 |
| CNEL: | 209 | 451 | 971 | 2,092 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Bellflower St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,532 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,926 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.57% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.02% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.42% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.59 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.40 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.61 | 0.41 | -1.20 | -5.41 | 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 | 67.8 | 66.9 | 65.1 | 72.0 | 72.3 |
| Medium Trucks: | 70.2 | 68.0 | 65.4 | 64.5 | 71.5 | 71.8 |
| Heavy Trucks: | 75.0 | 72.5 | 70.8 | 69.9 | 76.7 | 77.0 |
| Vehicle Noise: | 77.2 | 74.8 | 73.1 | 72.0 | 78.9 | 79.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 203 | 437 | 942 | 2,029 |
| CNEL: | 213 | 458 | 986 | 2,125 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Phelan Rd.
*Road Segment:* e/o Dwy. 1
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 21,122 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,981 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.08% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.27% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.65% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.49 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.12 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.37 | 0.41 | -1.20 | -5.41 | 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 | 67.9 | 67.0 | 65.2 | 72.1 | 72.4 |
| Medium Trucks: | 70.5 | 68.3 | 65.7 | 64.8 | 71.8 | 72.1 |
| Heavy Trucks: | 75.2 | 72.7 | 71.1 | 70.2 | 77.0 | 77.3 |
| Vehicle Noise: | 77.5 | 75.0 | 73.3 | 72.2 | 79.1 | 79.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 210 | 452 | 974 | 2,099 |
| CNEL: | 220 | 474 | 1,020 | 2,198 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Main St.
*Road Segment:* w/o Mesa Linda St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 31,887 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,991 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 80.80% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 9.10% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 10.10% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.54 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.95 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.50 | 1.58 | -1.20 | -5.34 | 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 | 69.5 | 68.6 | 66.8 | 73.7 | 74.0 |
| Medium Trucks: | 73.4 | 71.2 | 68.7 | 67.7 | 74.8 | 75.0 |
| Heavy Trucks: | 78.3 | 75.7 | 74.1 | 73.2 | 80.0 | 80.3 |
| Vehicle Noise: | 80.2 | 77.8 | 76.1 | 75.0 | 81.8 | 82.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 370 | 797 | 1,717 | 3,699 |
| CNEL: | 387 | 834 | 1,798 | 3,873 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Main St.
*Road Segment:* w/o Catabra Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 34,133 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,202 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 81.00% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 8.99% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 10.01% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.84 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.71 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.24 | 1.58 | -1.20 | -5.34 | 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 | 69.8 | 68.9 | 67.1 | 74.0 | 74.3 |
| Medium Trucks: | 73.7 | 71.5 | 68.9 | 68.0 | 75.0 | 75.3 |
| Heavy Trucks: | 78.5 | 76.0 | 74.4 | 73.4 | 80.3 | 80.5 |
| Vehicle Noise: | 80.5 | 78.0 | 76.3 | 75.2 | 82.1 | 82.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 385 | 830 | 1,788 | 3,852 |
| CNEL: | 403 | 869 | 1,872 | 4,032 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Main St.
*Road Segment:* e/o Key Point Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 42,637 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,999 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 82.98% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.87% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 9.15% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.91 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.32 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.66 | 1.58 | -1.20 | -5.34 | 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 | 70.9 | 70.0 | 68.2 | 75.1 | 75.4 |
| Medium Trucks: | 74.1 | 71.9 | 69.3 | 68.4 | 75.4 | 75.7 |
| Heavy Trucks: | 79.1 | 76.6 | 74.9 | 74.0 | 80.8 | 81.1 |
| Vehicle Noise: | 81.1 | 78.6 | 77.0 | 75.9 | 82.7 | 83.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 424 | 913 | 1,966 | 4,236 |
| CNEL: | 444 | 956 | 2,059 | 4,435 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Main St.
*Road Segment:* e/o Mariposa Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 46,066 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 4,321 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.15% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.21% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.64% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.31 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.36 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.57 | 1.20 | -1.20 | -5.34 | 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 | 70.9 | 70.1 | 68.2 | 75.1 | 75.4 |
| Medium Trucks: | 73.6 | 71.4 | 68.9 | 68.0 | 75.0 | 75.2 |
| Heavy Trucks: | 78.8 | 76.3 | 74.6 | 73.7 | 80.5 | 80.8 |
| Vehicle Noise: | 80.8 | 78.4 | 76.7 | 75.6 | 82.5 | 82.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 408 | 878 | 1,892 | 4,076 |
| CNEL: | 427 | 920 | 1,981 | 4,269 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Main St.
*Road Segment:* w/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 47,653 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 4,470 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.14% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.21% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.65% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.46 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.21 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.42 | 1.20 | -1.20 | -5.34 | 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 | 71.1 | 70.2 | 68.4 | 75.2 | 75.6 |
| Medium Trucks: | 73.8 | 71.6 | 69.0 | 68.1 | 75.1 | 75.4 |
| Heavy Trucks: | 79.0 | 76.4 | 74.8 | 73.9 | 80.7 | 81.0 |
| Vehicle Noise: | 81.0 | 78.5 | 76.9 | 75.8 | 82.6 | 82.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 417 | 899 | 1,936 | 4,171 |
| CNEL: | 437 | 941 | 2,027 | 4,368 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Main St.
*Road Segment:* e/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 38,482 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,610 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.05% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.25% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.70% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.53 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -8.12 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.33 | 1.20 | -1.20 | -5.34 | 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 | 70.1 | 69.3 | 67.4 | 74.3 | 74.7 |
| Medium Trucks: | 72.9 | 70.7 | 68.1 | 67.2 | 74.2 | 74.5 |
| Heavy Trucks: | 78.1 | 75.5 | 73.9 | 73.0 | 79.8 | 80.1 |
| Vehicle Noise: | 80.1 | 77.6 | 76.0 | 74.9 | 81.7 | 82.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 363 | 781 | 1,683 | 3,627 |
| CNEL: | 380 | 818 | 1,763 | 3,798 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Main St.
*Road Segment:* e/o Topaz Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 34,959 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,279 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.95% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.30% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.75% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.69 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.92 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.13 | 1.73 | -1.20 | -5.30 | 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 | 71.4 | 70.5 | 68.7 | 75.6 | 75.9 |
| Medium Trucks: | 74.0 | 71.8 | 69.2 | 68.3 | 75.3 | 75.6 |
| Heavy Trucks: | 78.8 | 76.3 | 74.6 | 73.7 | 80.5 | 80.8 |
| Vehicle Noise: | 81.0 | 78.5 | 76.9 | 75.8 | 82.6 | 82.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 452 | 973 | 2,096 | 4,516 |
| CNEL: | 473 | 1,019 | 2,196 | 4,730 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Sultana St.
*Road Segment:* e/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 4,647 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 436 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.48% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.06% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.46% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -5.66 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -16.45 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -15.66 | 3.70 | -1.20 | -5.77 | 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: | 63.3 | 60.7 | 59.8 | 58.0 | 64.9 | 65.2 |
| Medium Trucks: | 63.8 | 61.6 | 59.0 | 58.1 | 65.1 | 65.4 |
| Heavy Trucks: | 69.8 | 67.3 | 65.7 | 64.8 | 71.6 | 71.9 |
| Vehicle Noise: | 71.5 | 69.0 | 67.4 | 66.3 | 73.2 | 73.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 49 | 105 | 226 | 487 |
| CNEL: | 51 | 110 | 237 | 510 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* OYCP (2021)
*Road Name:* Joshua St.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 10,523 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 987 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 50 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 40.0 | feet |
| Centerline Dist. to Observer: | 40.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.40% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.09% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.51% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 31.623 |
| Medium Trucks: | 31.342 |
| Heavy Trucks: | 31.369 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -3.50 | 2.88 | -1.20 | -4.59 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -14.26 | 2.94 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -13.47 | 2.93 | -1.20 | -5.56 | 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 | 67.4 | 66.5 | 64.7 | 71.6 | 71.9 |
| Medium Trucks: | 69.9 | 67.7 | 65.1 | 64.2 | 71.2 | 71.5 |
| Heavy Trucks: | 74.7 | 72.1 | 70.5 | 69.6 | 76.4 | 76.7 |
| Vehicle Noise: | 76.9 | 74.4 | 72.8 | 71.7 | 78.5 | 78.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 148 | 319 | 687 | 1,480 |
| CNEL: | 155 | 334 | 719 | 1,550 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* US Hwy. 395
*Road Segment:* n/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 57,258 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 5,371 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 72 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 62.0 | feet |
| *Centerline Dist. to Observer:* | 62.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.81% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.36% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.83% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 50.725 |
| *Medium Trucks:* | 50.550 |
| *Heavy Trucks:* | 50.567 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | 3.82 | -0.20 | -1.20 | *-4.70* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -6.74 | -0.17 | -1.20 | *-4.88* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -5.95 | -0.18 | -1.20 | *-5.32* | 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 | 71.6 | 70.8 | 68.9 | 75.8 | 76.2 |
| *Medium Trucks:* | 74.3 | 72.1 | 69.5 | 68.6 | 75.6 | 75.9 |
| *Heavy Trucks:* | 79.1 | 76.6 | 74.9 | 74.0 | 80.8 | 81.1 |
| *Vehicle Noise:* | 81.3 | 78.8 | 77.1 | 76.0 | 82.9 | 83.2 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 449 | 967 | 2,084 | 4,489 |
| *CNEL:* | 470 | 1,013 | 2,182 | 4,702 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 55,402 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 5,197 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 72 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 62.0 | feet |
| *Centerline Dist. to Observer:* | 62.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.81% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.36% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.83% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 50.725 |
| *Medium Trucks:* | 50.550 |
| *Heavy Trucks:* | 50.567 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | 3.68 | -0.20 | -1.20 | *-4.70* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -6.88 | -0.17 | -1.20 | *-4.88* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -6.09 | -0.18 | -1.20 | *-5.32* | 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:* | 74.1 | 71.5 | 70.6 | 68.8 | 75.7 | 76.0 |
| *Medium Trucks:* | 74.1 | 71.9 | 69.4 | 68.5 | 75.5 | 75.7 |
| *Heavy Trucks:* | 78.9 | 76.4 | 74.8 | 73.8 | 80.7 | 81.0 |
| *Vehicle Noise:* | 81.1 | 78.7 | 77.0 | 75.9 | 82.8 | 83.1 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 439 | 946 | 2,038 | 4,392 |
| *CNEL:* | 460 | 991 | 2,135 | 4,600 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Bear Valley Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 58,992 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 5,533 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 72 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 62.0 | feet |
| *Centerline Dist. to Observer:* | 62.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.81% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.36% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.83% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 50.725 |
| *Medium Trucks:* | 50.550 |
| *Heavy Trucks:* | 50.567 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | 3.95 | -0.20 | -1.20 | *-4.70* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -6.61 | -0.17 | -1.20 | *-4.88* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -5.82 | -0.18 | -1.20 | *-5.32* | 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:* | 74.3 | 71.8 | 70.9 | 69.1 | 75.9 | 76.3 |
| *Medium Trucks:* | 74.4 | 72.2 | 69.6 | 68.7 | 75.7 | 76.0 |
| *Heavy Trucks:* | 79.2 | 76.7 | 75.0 | 74.1 | 80.9 | 81.2 |
| *Vehicle Noise:* | 81.4 | 78.9 | 77.3 | 76.2 | 83.0 | 83.3 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 458 | 987 | 2,126 | 4,579 |
| *CNEL:* | 480 | 1,033 | 2,226 | 4,796 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Eucalyptus St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 58,413 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 5,479 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 72 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 62.0 | feet |
| *Centerline Dist. to Observer:* | 62.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.81% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.36% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.83% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 50.725 |
| *Medium Trucks:* | 50.550 |
| *Heavy Trucks:* | 50.567 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | 3.91 | -0.20 | -1.20 | *-4.70* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -6.65 | -0.17 | -1.20 | *-4.88* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -5.86 | -0.18 | -1.20 | *-5.32* | 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:* | 74.3 | 71.7 | 70.9 | 69.0 | 75.9 | 76.2 |
| *Medium Trucks:* | 74.4 | 72.2 | 69.6 | 68.7 | 75.7 | 76.0 |
| *Heavy Trucks:* | 79.2 | 76.6 | 75.0 | 74.1 | 80.9 | 81.2 |
| *Vehicle Noise:* | 81.4 | 78.9 | 77.2 | 76.1 | 83.0 | 83.3 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 455 | 980 | 2,112 | 4,549 |
| *CNEL:* | 476 | 1,027 | 2,212 | 4,765 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 8,855 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 831 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -4.28 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -14.85 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -14.06 | 0.41 | -1.20 | -5.41 | 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: | 66.7 | 64.1 | 63.2 | 61.4 | 68.3 | 68.6 |
| Medium Trucks: | 66.8 | 64.6 | 62.0 | 61.1 | 68.1 | 68.4 |
| Heavy Trucks: | 71.5 | 69.0 | 67.4 | 66.5 | 73.3 | 73.6 |
| Vehicle Noise: | 73.7 | 71.3 | 69.6 | 68.5 | 75.4 | 75.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 119 | 256 | 551 | 1,186 |
| CNEL: | 124 | 268 | 577 | 1,243 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* s/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 3,376 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 317 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -8.47 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -19.03 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -18.24 | 0.41 | -1.20 | -5.41 | 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 | 59.9 | 59.1 | 57.2 | 64.1 | 64.4 |
| Medium Trucks: | 62.6 | 60.4 | 57.8 | 56.9 | 63.9 | 64.2 |
| Heavy Trucks: | 67.4 | 64.8 | 63.2 | 62.3 | 69.1 | 69.4 |
| Vehicle Noise: | 69.6 | 67.1 | 65.4 | 64.3 | 71.2 | 71.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 62 | 134 | 290 | 624 |
| CNEL: | 65 | 141 | 303 | 653 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Verbena Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 271 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 25 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 25.0 | feet |
| Centerline Dist. to Observer: | 25.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 22.494 |
| Medium Trucks: | 22.098 |
| Heavy Trucks: | 22.136 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -18.04 | 5.10 | -1.20 | -4.41 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -28.60 | 5.22 | -1.20 | -4.85 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -27.81 | 5.20 | -1.20 | -5.94 | 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: | 52.4 | 49.8 | 48.9 | 47.1 | 54.0 | 54.3 |
| Medium Trucks: | 53.1 | 50.9 | 48.3 | 47.4 | 54.5 | 54.7 |
| Heavy Trucks: | 59.2 | 56.7 | 55.0 | 54.1 | 60.9 | 61.2 |
| Vehicle Noise: | 60.8 | 58.3 | 56.7 | 55.6 | 62.5 | 62.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 8 | 17 | 37 | 79 |
| CNEL: | 8 | 18 | 38 | 82 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Yucca Terrace Dr.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 39,091 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,667 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 2.17 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.40 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -7.61 | 1.73 | -1.20 | -5.30 | 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: | 74.4 | 71.9 | 71.0 | 69.2 | 76.0 | 76.4 |
| Medium Trucks: | 74.5 | 72.3 | 69.8 | 68.9 | 75.9 | 76.1 |
| Heavy Trucks: | 79.3 | 76.8 | 75.2 | 74.2 | 81.1 | 81.3 |
| Vehicle Noise: | 81.5 | 79.0 | 77.4 | 76.3 | 83.1 | 83.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 489 | 1,053 | 2,268 | 4,886 |
| CNEL: | 512 | 1,102 | 2,375 | 5,117 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: US Hwy. 395
Road Segment: s/o Main St.

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 57,363 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 5,381 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 3.83 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -6.73 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -5.94 | 1.73 | -1.20 | -5.30 | 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: | 76.1 | 73.5 | 72.7 | 70.8 | 77.7 | 78.1 |
| Medium Trucks: | 76.2 | 74.0 | 71.4 | 70.5 | 77.5 | 77.8 |
| Heavy Trucks: | 81.0 | 78.5 | 76.8 | 75.9 | 82.7 | 83.0 |
| Vehicle Noise: | 83.2 | 80.7 | 79.1 | 77.9 | 84.8 | 85.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 631 | 1,359 | 2,929 | 6,309 |
| CNEL: | 661 | 1,424 | 3,067 | 6,608 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: US Hwy. 395
Road Segment: s/o Poplar St.

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 35,235 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,305 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.72 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.85 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.06 | 1.73 | -1.20 | -5.30 | 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 | 71.4 | 70.5 | 68.7 | 75.6 | 75.9 |
| Medium Trucks: | 74.1 | 71.9 | 69.3 | 68.4 | 75.4 | 75.7 |
| Heavy Trucks: | 78.9 | 76.3 | 74.7 | 73.8 | 80.6 | 80.9 |
| Vehicle Noise: | 81.1 | 78.6 | 76.9 | 75.8 | 82.7 | 83.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 456 | 982 | 2,116 | 4,559 |
| CNEL: | 477 | 1,029 | 2,216 | 4,775 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: US Hwy. 395
Road Segment: s/o Joshua St.

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 34,380 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 3,225 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 106 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 65.0 feet |
| Centerline Dist. to Observer: | 65.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.61 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.96 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.17 | 1.73 | -1.20 | -5.30 | 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: | 73.9 | 71.3 | 70.4 | 68.6 | 75.5 | 75.8 |
| Medium Trucks: | 74.0 | 71.8 | 69.2 | 68.3 | 75.3 | 75.6 |
| Heavy Trucks: | 78.8 | 76.2 | 74.6 | 73.7 | 80.5 | 80.8 |
| Vehicle Noise: | 81.0 | 78.5 | 76.8 | 75.7 | 82.6 | 82.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 449 | 966 | 2,082 | 4,485 |
| CNEL: | 470 | 1,012 | 2,180 | 4,697 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: Escondido Av.
Road Segment: n/o Sultana St.

Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 29,278 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,746 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 72 feet |

**Site Data**

| | |
|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.33 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.24 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.45 | 2.25 | -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: | 72.5 | 70.0 | 69.1 | 67.3 | 74.1 | 74.5 |
| Medium Trucks: | 72.8 | 70.6 | 68.0 | 67.1 | 74.1 | 74.4 |
| Heavy Trucks: | 78.0 | 75.5 | 73.8 | 72.9 | 79.7 | 80.0 |
| Vehicle Noise: | 80.0 | 77.5 | 75.9 | 74.8 | 81.6 | 81.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 298 | 642 | 1,383 | 2,981 |
| CNEL: | 312 | 672 | 1,449 | 3,121 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Escondido Av.
*Road Segment:* s/o Sultana St.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 29,278 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,746 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.33 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.24 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.45 | 2.25 | -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: | 72.5 | 70.0 | 69.1 | 67.3 | 74.1 | 74.5 |
| Medium Trucks: | 72.8 | 70.6 | 68.0 | 67.1 | 74.1 | 74.4 |
| Heavy Trucks: | 78.0 | 75.5 | 73.8 | 72.9 | 79.7 | 80.0 |
| Vehicle Noise: | 80.0 | 77.5 | 75.9 | 74.8 | 81.6 | 81.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 298 | 642 | 1,383 | 2,981 |
| CNEL: | 312 | 672 | 1,449 | 3,121 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Topaz Av.
*Road Segment:* n/o Main St.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 4,522 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 424 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -5.82 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -16.38 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -15.59 | 3.70 | -1.20 | -5.77 | 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: | 63.1 | 60.6 | 59.7 | 57.9 | 64.7 | 65.1 |
| Medium Trucks: | 63.8 | 61.6 | 59.1 | 58.2 | 65.2 | 65.4 |
| Heavy Trucks: | 69.9 | 67.4 | 65.7 | 64.8 | 71.6 | 71.9 |
| Vehicle Noise: | 71.5 | 69.1 | 67.4 | 66.3 | 73.2 | 73.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 49 | 105 | 227 | 490 |
| CNEL: | 51 | 110 | 238 | 513 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Luna Rd.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 10,845 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,017 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 34.0 | feet |
| Centerline Dist. to Observer: | 34.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 32.202 |
| Medium Trucks: | 31.927 |
| Heavy Trucks: | 31.953 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -2.02 | 2.76 | -1.20 | -4.53 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -12.58 | 2.82 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -11.79 | 2.81 | -1.20 | -5.67 | 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: | 66.1 | 63.5 | 62.6 | 60.8 | 67.7 | 68.0 |
| Medium Trucks: | 66.8 | 64.6 | 62.0 | 61.1 | 68.1 | 68.4 |
| Heavy Trucks: | 72.8 | 70.3 | 68.7 | 67.7 | 74.5 | 74.8 |
| Vehicle Noise: | 74.5 | 72.0 | 70.3 | 69.2 | 76.1 | 76.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 87 | 187 | 403 | 867 |
| CNEL: | 91 | 196 | 421 | 908 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Bear Valley Rd.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,088 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,884 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.72 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.29 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.50 | -0.18 | -1.20 | -5.32 | 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: | 69.7 | 67.1 | 66.2 | 64.4 | 71.3 | 71.6 |
| Medium Trucks: | 69.7 | 67.5 | 65.0 | 64.1 | 71.1 | 71.3 |
| Heavy Trucks: | 74.5 | 72.0 | 70.4 | 69.4 | 76.3 | 76.5 |
| Vehicle Noise: | 76.7 | 74.3 | 72.6 | 71.5 | 78.3 | 78.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 223 | 481 | 1,036 | 2,233 |
| CNEL: | 234 | 504 | 1,086 | 2,339 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Eucalyptus St.
*Road Segment:* w/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 452 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 42 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -17.20 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -27.77 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -26.98 | -0.18 | -1.20 | -5.32 | 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: | 53.2 | 50.6 | 49.7 | 47.9 | 54.8 | 55.1 |
| Medium Trucks: | 53.3 | 51.1 | 48.5 | 47.6 | 54.6 | 54.9 |
| Heavy Trucks: | 58.0 | 55.5 | 53.9 | 53.0 | 59.8 | 60.1 |
| Vehicle Noise: | 60.2 | 57.8 | 56.1 | 55.0 | 61.9 | 62.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 18 | 38 | 83 | 178 |
| CNEL: | 19 | 40 | 87 | 186 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Eucalyptus St.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 2,276 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 213 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 50 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| 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: | 71.78 | -10.18 | 0.79 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -20.75 | 0.82 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -19.96 | 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: | 61.2 | 58.6 | 57.8 | 55.9 | 62.8 | 63.1 |
| Medium Trucks: | 61.3 | 59.1 | 56.5 | 55.6 | 62.6 | 62.9 |
| Heavy Trucks: | 66.1 | 63.5 | 61.9 | 61.0 | 67.8 | 68.1 |
| Vehicle Noise: | 68.3 | 65.8 | 64.1 | 63.0 | 69.9 | 70.2 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 49 | 106 | 228 | 491 |
| CNEL: | 51 | 111 | 239 | 514 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Baldy Mesa Rd.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 21,976 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,061 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.33 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.90 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.11 | 0.41 | -1.20 | -5.41 | 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 | 68.1 | 67.2 | 65.4 | 72.2 | 72.6 |
| Medium Trucks: | 70.7 | 68.5 | 65.9 | 65.0 | 72.0 | 72.3 |
| Heavy Trucks: | 75.5 | 73.0 | 71.3 | 70.4 | 77.2 | 77.5 |
| Vehicle Noise: | 77.7 | 75.2 | 73.6 | 72.5 | 79.3 | 79.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 217 | 469 | 1,009 | 2,175 |
| CNEL: | 228 | 491 | 1,057 | 2,278 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Verbena Rd.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 21,840 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,049 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.36 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.93 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.14 | 0.41 | -1.20 | -5.41 | 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 | 68.0 | 67.2 | 65.3 | 72.2 | 72.6 |
| Medium Trucks: | 70.7 | 68.5 | 65.9 | 65.0 | 72.0 | 72.3 |
| Heavy Trucks: | 75.5 | 72.9 | 71.3 | 70.4 | 77.2 | 77.5 |
| Vehicle Noise: | 77.7 | 75.2 | 73.5 | 72.4 | 79.3 | 79.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 217 | 467 | 1,005 | 2,166 |
| CNEL: | 227 | 489 | 1,053 | 2,268 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Phelan Rd.
*Road Segment:* w/o Bellflower St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 22,435 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,104 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.24 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.81 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.02 | 0.41 | -1.20 | -5.41 | 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 | 68.1 | 67.3 | 65.4 | 72.3 | 72.7 |
| Medium Trucks: | 70.8 | 68.6 | 66.0 | 65.1 | 72.1 | 72.4 |
| Heavy Trucks: | 75.6 | 73.1 | 71.4 | 70.5 | 77.3 | 77.6 |
| Vehicle Noise: | 77.8 | 75.3 | 73.7 | 72.5 | 79.4 | 79.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 221 | 475 | 1,023 | 2,205 |
| CNEL: | 231 | 498 | 1,072 | 2,309 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Phelan Rd.
*Road Segment:* e/o Dwy. 1
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 23,076 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,165 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.12 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.69 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.90 | 0.41 | -1.20 | -5.41 | 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 | 68.3 | 67.4 | 65.6 | 72.4 | 72.8 |
| Medium Trucks: | 70.9 | 68.7 | 66.1 | 65.2 | 72.2 | 72.5 |
| Heavy Trucks: | 75.7 | 73.2 | 71.5 | 70.6 | 77.4 | 77.7 |
| Vehicle Noise: | 77.9 | 75.4 | 73.8 | 72.7 | 79.5 | 79.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 225 | 484 | 1,043 | 2,247 |
| CNEL: | 235 | 507 | 1,092 | 2,353 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Main St.
*Road Segment:* w/o Mesa Linda St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 25,435 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,386 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 0.71 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.85 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -9.06 | 1.58 | -1.20 | -5.34 | 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: | 71.3 | 68.7 | 67.8 | 66.0 | 72.9 | 73.2 |
| Medium Trucks: | 71.5 | 69.3 | 66.7 | 65.8 | 72.9 | 73.1 |
| Heavy Trucks: | 76.7 | 74.2 | 72.5 | 71.6 | 78.4 | 78.7 |
| Vehicle Noise: | 78.7 | 76.2 | 74.6 | 73.5 | 80.3 | 80.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 294 | 632 | 1,363 | 2,936 |
| CNEL: | 307 | 662 | 1,427 | 3,074 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Main St.
*Road Segment:* w/o Catabra Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 27,982 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,625 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.13 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.44 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.65 | 1.58 | -1.20 | -5.34 | 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 | 69.1 | 68.2 | 66.4 | 73.3 | 73.6 |
| Medium Trucks: | 71.9 | 69.7 | 67.2 | 66.3 | 73.3 | 73.5 |
| Heavy Trucks: | 77.1 | 74.6 | 72.9 | 72.0 | 78.8 | 79.1 |
| Vehicle Noise: | 79.1 | 76.7 | 75.0 | 73.9 | 80.8 | 81.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 313 | 674 | 1,452 | 3,129 |
| CNEL: | 328 | 706 | 1,521 | 3,276 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: Main St.
Road Segment: e/o Key Point Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 43,295 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 4,061 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 92 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.02 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.54 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.75 | 1.58 | -1.20 | -5.34 | 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 | 71.0 | 70.1 | 68.3 | 75.2 | 75.5 |
| Medium Trucks: | 73.8 | 71.6 | 69.1 | 68.2 | 75.2 | 75.4 |
| Heavy Trucks: | 79.0 | 76.5 | 74.8 | 73.9 | 80.7 | 81.0 |
| Vehicle Noise: | 81.0 | 78.6 | 76.9 | 75.8 | 82.7 | 83.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 419 | 902 | 1,943 | 4,185 |
| CNEL: | 438 | 944 | 2,034 | 4,383 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: Main St.
Road Segment: e/o Mariposa Rd.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 55,888 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 5,242 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 4.13 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -6.43 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -5.64 | 1.20 | -1.20 | -5.34 | 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: | 74.3 | 71.7 | 70.9 | 69.0 | 75.9 | 76.3 |
| Medium Trucks: | 74.6 | 72.4 | 69.8 | 68.9 | 75.9 | 76.2 |
| Heavy Trucks: | 79.7 | 77.2 | 75.6 | 74.7 | 81.5 | 81.8 |
| Vehicle Noise: | 81.8 | 79.3 | 77.6 | 76.5 | 83.4 | 83.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 469 | 1,010 | 2,176 | 4,688 |
| CNEL: | 491 | 1,058 | 2,279 | 4,909 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: Main St.
Road Segment: w/o Escondido Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 58,044 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 5,445 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 4.30 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -6.27 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -5.48 | 1.20 | -1.20 | -5.34 | 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: | 74.5 | 71.9 | 71.0 | 69.2 | 76.1 | 76.4 |
| Medium Trucks: | 74.7 | 72.5 | 70.0 | 69.1 | 76.1 | 76.3 |
| Heavy Trucks: | 79.9 | 77.4 | 75.7 | 74.8 | 81.6 | 81.9 |
| Vehicle Noise: | 81.9 | 79.5 | 77.8 | 76.7 | 83.6 | 83.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 481 | 1,036 | 2,231 | 4,808 |
| CNEL: | 503 | 1,085 | 2,337 | 5,035 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HY (2040)
Road Name: Main St.
Road Segment: e/o Escondido Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 47,018 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 4,410 vehicles |
| Vehicle Speed: | 50 mph |
| Near/Far Lane Distance: | 88 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 60.0 feet |
| Centerline Dist. to Observer: | 60.0 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.81% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.83% |

**Noise Source Elevations (in feet)**

| | |
|---|---|
| Autos: | 0.000 |
| Medium Trucks: | 2.297 |
| Heavy Trucks: | 8.004 |

Grade Adjustment: 0.0

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.38 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.18 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.39 | 1.20 | -1.20 | -5.34 | 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 | 71.0 | 70.1 | 68.3 | 75.2 | 75.5 |
| Medium Trucks: | 73.8 | 71.6 | 69.0 | 68.1 | 75.1 | 75.4 |
| Heavy Trucks: | 79.0 | 76.5 | 74.8 | 73.9 | 80.7 | 81.0 |
| Vehicle Noise: | 81.0 | 78.5 | 76.9 | 75.8 | 82.6 | 82.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 418 | 900 | 1,939 | 4,178 |
| CNEL: | 437 | 943 | 2,031 | 4,375 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Main St.
*Road Segment:* e/o Topaz Av.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 43,069 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 4,040 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 106 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 65.0 | feet |
| *Centerline Dist. to Observer:* | 65.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.81% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.36% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.83% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 37.961 |
| *Medium Trucks:* | 37.727 |
| *Heavy Trucks:* | 37.749 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | 2.59 | 1.69 | -1.20 | *-4.70* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -7.98 | 1.73 | -1.20 | *-4.88* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -7.19 | 1.73 | -1.20 | *-5.30* | 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:* | 74.9 | 72.3 | 71.4 | 69.6 | 76.5 | 76.8 |
| *Medium Trucks:* | 75.0 | 72.8 | 70.2 | 69.3 | 76.3 | 76.6 |
| *Heavy Trucks:* | 79.7 | 77.2 | 75.6 | 74.7 | 81.5 | 81.8 |
| *Vehicle Noise:* | 81.9 | 79.5 | 77.8 | 76.7 | 83.6 | 83.9 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 521 | 1,123 | 2,419 | 5,212 |
| *CNEL:* | 546 | 1,176 | 2,534 | 5,459 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Sultana St.
*Road Segment:* e/o Escondido Av.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 5,825 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 546 | vehicles |
| *Vehicle Speed:* | 40 | mph |
| *Near/Far Lane Distance:* | 23 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 30.0 | feet |
| *Centerline Dist. to Observer:* | 30.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.81% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.36% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.83% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 28.156 |
| *Medium Trucks:* | 27.840 |
| *Heavy Trucks:* | 27.871 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 66.51 | -4.72 | 3.64 | -1.20 | *-4.49* | 0.000 | 0.000 |
| *Medium Trucks:* | 77.72 | -15.28 | 3.71 | -1.20 | *-4.86* | 0.000 | 0.000 |
| *Heavy Trucks:* | 82.99 | -14.49 | 3.70 | -1.20 | *-5.77* | 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:* | 64.2 | 61.7 | 60.8 | 59.0 | 65.8 | 66.2 |
| *Medium Trucks:* | 64.9 | 62.7 | 60.2 | 59.3 | 66.3 | 66.5 |
| *Heavy Trucks:* | 71.0 | 68.5 | 66.8 | 65.9 | 72.7 | 73.0 |
| *Vehicle Noise:* | 72.6 | 70.2 | 68.5 | 67.4 | 74.3 | 74.6 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 58 | 125 | 269 | 580 |
| *CNEL:* | 61 | 131 | 282 | 607 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HY (2040)
*Road Name:* Joshua St.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 11,156 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 1,046 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 50 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 40.0 | feet |
| *Centerline Dist. to Observer:* | 40.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.81% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.36% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.83% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 31.623 |
| *Medium Trucks:* | 31.342 |
| *Heavy Trucks:* | 31.369 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | -3.28 | 2.88 | -1.20 | *-4.59* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -13.84 | 2.94 | -1.20 | *-4.87* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -13.05 | 2.93 | -1.20 | *-5.56* | 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 | 67.6 | 66.7 | 64.9 | 71.8 | 72.1 |
| *Medium Trucks:* | 70.3 | 68.1 | 65.5 | 64.6 | 71.6 | 71.9 |
| *Heavy Trucks:* | 75.1 | 72.6 | 70.9 | 70.0 | 76.8 | 77.1 |
| *Vehicle Noise:* | 77.3 | 74.8 | 73.1 | 72.0 | 78.9 | 79.2 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 157 | 338 | 728 | 1,568 |
| *CNEL:* | 164 | 354 | 762 | 1,642 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* US Hwy. 395
*Road Segment:* n/o Luna Rd.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 57,567 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 5,400 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 72 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 62.0 | feet |
| *Centerline Dist. to Observer:* | 62.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 83.70% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.42% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.88% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 50.725 |
| *Medium Trucks:* | 50.550 |
| *Heavy Trucks:* | 50.567 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | 3.84 | -0.20 | -1.20 | *-4.70* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -6.68 | -0.17 | -1.20 | *-4.88* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -5.90 | -0.18 | -1.20 | *-5.32* | 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 | 71.7 | 70.8 | 68.9 | 75.8 | 76.2 |
| *Medium Trucks:* | 74.3 | 72.2 | 69.6 | 68.7 | 75.7 | 75.9 |
| *Heavy Trucks:* | 79.1 | 76.6 | 75.0 | 74.0 | 80.9 | 81.1 |
| *Vehicle Noise:* | 81.3 | 78.9 | 77.2 | 76.1 | 82.9 | 83.2 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 452 | 974 | 2,098 | 4,521 |
| *CNEL:* | 473 | 1,020 | 2,198 | 4,735 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Luna Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 55,806 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 5,235 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.72% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.41% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.87% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 3.71 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -6.82 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -6.04 | -0.18 | -1.20 | -5.32 | 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: | 74.1 | 71.5 | 70.7 | 68.8 | 75.7 | 76.0 |
| Medium Trucks: | 74.2 | 72.0 | 69.4 | 68.5 | 75.5 | 75.8 |
| Heavy Trucks: | 79.0 | 76.5 | 74.8 | 73.9 | 80.7 | 81.0 |
| Vehicle Noise: | 81.2 | 78.7 | 77.0 | 75.9 | 82.8 | 83.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 442 | 953 | 2,054 | 4,425 |
| CNEL: | 463 | 998 | 2,151 | 4,634 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Bear Valley Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 59,777 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 5,607 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.83% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.36% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.81% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 4.01 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -6.55 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -5.77 | -0.18 | -1.20 | -5.32 | 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: | 74.4 | 71.8 | 71.0 | 69.1 | 76.0 | 76.3 |
| Medium Trucks: | 74.5 | 72.3 | 69.7 | 68.8 | 75.8 | 76.1 |
| Heavy Trucks: | 79.2 | 76.7 | 75.1 | 74.2 | 81.0 | 81.3 |
| Vehicle Noise: | 81.4 | 79.0 | 77.3 | 76.2 | 83.1 | 83.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 462 | 995 | 2,143 | 4,616 |
| CNEL: | 483 | 1,042 | 2,244 | 4,835 |

Tuesday, July 14, 2020

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Eucalyptus St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 59,484 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 5,580 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.91% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.33% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.77% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 4.00 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -6.59 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -5.82 | -0.18 | -1.20 | -5.32 | 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: | 74.4 | 71.8 | 70.9 | 69.1 | 76.0 | 76.3 |
| Medium Trucks: | 74.4 | 72.2 | 69.7 | 68.7 | 75.8 | 76.0 |
| Heavy Trucks: | 79.2 | 76.7 | 75.0 | 74.1 | 80.9 | 81.2 |
| Vehicle Noise: | 81.4 | 78.9 | 77.3 | 76.2 | 83.0 | 83.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 459 | 989 | 2,130 | 4,590 |
| CNEL: | 481 | 1,036 | 2,231 | 4,807 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 9,141 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 857 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.32% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.13% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.55% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -4.12 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -14.85 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -14.06 | 0.41 | -1.20 | -5.41 | 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: | 66.8 | 64.3 | 63.4 | 61.6 | 68.4 | 68.8 |
| Medium Trucks: | 66.8 | 64.6 | 62.0 | 61.1 | 68.1 | 68.4 |
| Heavy Trucks: | 71.5 | 69.0 | 67.4 | 66.5 | 73.3 | 73.6 |
| Vehicle Noise: | 73.8 | 71.3 | 69.7 | 68.5 | 75.4 | 75.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 119 | 257 | 553 | 1,192 |
| CNEL: | 125 | 269 | 580 | 1,249 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Baldy Mesa Rd.
*Road Segment:* s/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 3,567 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 335 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.68% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.97% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.36% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -8.19 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -19.03 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -18.24 | 0.41 | -1.20 | -5.41 | 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: | 62.8 | 60.2 | 59.3 | 57.5 | 64.4 | 64.7 |
| Medium Trucks: | 62.6 | 60.4 | 57.8 | 56.9 | 63.9 | 64.2 |
| Heavy Trucks: | 67.4 | 64.8 | 63.2 | 62.3 | 69.1 | 69.4 |
| Vehicle Noise: | 69.6 | 67.1 | 65.5 | 64.4 | 71.2 | 71.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 63 | 136 | 292 | 629 |
| CNEL: | 66 | 142 | 306 | 659 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Verbena Rd.
*Road Segment:* n/o Phelan Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 367 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 34 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 25.0 | feet |
| Centerline Dist. to Observer: | 25.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 88.02% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 5.45% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 6.53% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 22.494 |
| Medium Trucks: | 22.098 |
| Heavy Trucks: | 22.136 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -16.52 | 5.10 | -1.20 | -4.41 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -28.60 | 5.22 | -1.20 | -4.85 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -27.81 | 5.20 | -1.20 | -5.94 | 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: | 53.9 | 51.3 | 50.5 | 48.6 | 55.5 | 55.8 |
| Medium Trucks: | 53.1 | 50.9 | 48.3 | 47.4 | 54.5 | 54.7 |
| Heavy Trucks: | 59.2 | 56.7 | 55.0 | 54.1 | 60.9 | 61.2 |
| Vehicle Noise: | 61.1 | 58.6 | 57.0 | 55.9 | 62.7 | 63.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 8 | 18 | 38 | 82 |
| CNEL: | 9 | 18 | 40 | 86 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Yucca Terrace Dr.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 42,469 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,984 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.21% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.74% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 9.06% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 2.50 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -7.82 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -7.14 | 1.73 | -1.20 | -5.30 | 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: | 74.8 | 72.2 | 71.3 | 69.5 | 76.4 | 76.7 |
| Medium Trucks: | 75.1 | 72.9 | 70.3 | 69.4 | 76.4 | 76.7 |
| Heavy Trucks: | 79.8 | 77.3 | 75.6 | 74.7 | 81.5 | 81.8 |
| Vehicle Noise: | 82.0 | 79.5 | 77.8 | 76.7 | 83.6 | 83.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 525 | 1,130 | 2,435 | 5,247 |
| CNEL: | 549 | 1,184 | 2,551 | 5,495 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* US Hwy. 395
*Road Segment:* s/o Main St.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 59,269 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 5,559 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.33% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.12% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.54% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 4.00 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -6.73 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -5.94 | 1.73 | -1.20 | -5.30 | 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: | 76.3 | 73.7 | 72.8 | 71.0 | 77.9 | 78.2 |
| Medium Trucks: | 76.2 | 74.0 | 71.4 | 70.5 | 77.5 | 77.8 |
| Heavy Trucks: | 81.0 | 78.5 | 76.8 | 75.9 | 82.7 | 83.0 |
| Vehicle Noise: | 83.2 | 80.7 | 79.1 | 78.0 | 84.8 | 85.1 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 634 | 1,366 | 2,944 | 6,342 |
| CNEL: | 664 | 1,431 | 3,083 | 6,642 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: US Hwy. 395
Road Segment: s/o Poplar St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 37,141 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,484 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.64% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.98% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.37% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.99 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.85 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.06 | 1.73 | -1.20 | -5.30 | 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: | 74.3 | 71.7 | 70.8 | 69.0 | 75.9 | 76.2 |
| Medium Trucks: | 74.1 | 71.9 | 69.3 | 68.4 | 75.4 | 75.7 |
| Heavy Trucks: | 78.9 | 76.3 | 74.7 | 73.8 | 80.6 | 80.9 |
| Vehicle Noise: | 81.1 | 78.7 | 77.0 | 75.9 | 82.7 | 83.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 460 | 990 | 2,134 | 4,597 |
| CNEL: | 482 | 1,037 | 2,235 | 4,815 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: US Hwy. 395
Road Segment: s/o Joshua St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 35,905 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,368 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.50% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.05% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.45% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 1.83 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -8.96 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -8.17 | 1.73 | -1.20 | -5.30 | 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: | 74.1 | 71.5 | 70.7 | 68.8 | 75.7 | 76.1 |
| Medium Trucks: | 74.0 | 71.8 | 69.2 | 68.3 | 75.3 | 75.6 |
| Heavy Trucks: | 78.8 | 76.2 | 74.6 | 73.7 | 80.5 | 80.8 |
| Vehicle Noise: | 81.0 | 78.5 | 76.9 | 75.8 | 82.6 | 82.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 452 | 973 | 2,096 | 4,516 |
| CNEL: | 473 | 1,019 | 2,195 | 4,730 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Escondido Av.
Road Segment: n/o Sultana St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 29,659 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,782 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.02% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.26% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.71% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.39 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.24 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.45 | 2.25 | -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: | 72.6 | 70.0 | 69.2 | 67.3 | 74.2 | 74.6 |
| Medium Trucks: | 72.8 | 70.6 | 68.0 | 67.1 | 74.1 | 74.4 |
| Heavy Trucks: | 78.0 | 75.5 | 73.8 | 72.9 | 79.7 | 80.0 |
| Vehicle Noise: | 80.0 | 77.5 | 75.9 | 74.8 | 81.6 | 81.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 299 | 643 | 1,386 | 2,986 |
| CNEL: | 313 | 674 | 1,451 | 3,127 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Escondido Av.
Road Segment: s/o Sultana St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 29,469 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,764 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.92% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.31% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.77% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 35.057 |
| Medium Trucks: | 34.804 |
| Heavy Trucks: | 34.828 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.36 | 2.21 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -9.24 | 2.26 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -8.45 | 2.25 | -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: | 72.6 | 70.0 | 69.1 | 67.3 | 74.2 | 74.5 |
| Medium Trucks: | 72.8 | 70.6 | 68.0 | 67.1 | 74.1 | 74.4 |
| Heavy Trucks: | 78.0 | 75.5 | 73.8 | 72.9 | 79.7 | 80.0 |
| Vehicle Noise: | 80.0 | 77.5 | 75.9 | 74.8 | 81.6 | 81.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 298 | 643 | 1,385 | 2,983 |
| CNEL: | 312 | 673 | 1,450 | 3,124 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Topaz Av.
*Road Segment:* n/o Main St.

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 4,617 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 433 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 23 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 30.0 | feet |
| Centerline Dist. to Observer: | 30.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.15% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.21% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.64% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 28.156 |
| Medium Trucks: | 27.840 |
| Heavy Trucks: | 27.871 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -5.71 | 3.64 | -1.20 | -4.49 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -16.38 | 3.71 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -15.59 | 3.70 | -1.20 | -5.77 | 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 | 60.7 | 59.8 | 58.0 | 64.8 | 65.2 |
| Medium Trucks: | 63.8 | 61.6 | 59.1 | 58.2 | 65.2 | 65.4 |
| Heavy Trucks: | 69.9 | 67.4 | 65.7 | 64.8 | 71.6 | 71.9 |
| Vehicle Noise: | 71.6 | 69.1 | 67.4 | 66.3 | 73.2 | 73.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 49 | 106 | 228 | 491 |
| CNEL: | 51 | 111 | 238 | 514 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Luna Rd.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 10,940 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,026 | vehicles |
| Vehicle Speed: | 40 | mph |
| Near/Far Lane Distance: | 24 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 34.0 | feet |
| Centerline Dist. to Observer: | 34.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.96% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.29% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.75% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 32.202 |
| Medium Trucks: | 31.927 |
| Heavy Trucks: | 31.953 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 66.51 | -1.97 | 2.76 | -1.20 | -4.53 | 0.000 | 0.000 |
| Medium Trucks: | 77.72 | -12.58 | 2.82 | -1.20 | -4.86 | 0.000 | 0.000 |
| Heavy Trucks: | 82.99 | -11.79 | 2.81 | -1.20 | -5.67 | 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: | 66.1 | 63.5 | 62.7 | 60.8 | 67.7 | 68.1 |
| Medium Trucks: | 66.8 | 64.6 | 62.0 | 61.1 | 68.1 | 68.4 |
| Heavy Trucks: | 72.8 | 70.3 | 68.7 | 67.7 | 74.5 | 74.8 |
| Vehicle Noise: | 74.5 | 72.0 | 70.3 | 69.3 | 76.1 | 76.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 87 | 187 | 403 | 868 |
| CNEL: | 91 | 196 | 422 | 909 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Bear Valley Rd.
*Road Segment:* e/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 20,469 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 1,920 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.12% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.22% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.66% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.63 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -11.29 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.50 | -0.18 | -1.20 | -5.32 | 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 | 67.2 | 66.3 | 64.5 | 71.4 | 71.7 |
| Medium Trucks: | 69.7 | 67.5 | 65.0 | 64.1 | 71.1 | 71.3 |
| Heavy Trucks: | 74.5 | 72.0 | 70.4 | 69.4 | 76.3 | 76.5 |
| Vehicle Noise: | 76.7 | 74.3 | 72.6 | 71.5 | 78.4 | 78.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 224 | 483 | 1,040 | 2,240 |
| CNEL: | 235 | 505 | 1,089 | 2,346 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Eucalyptus St.
*Road Segment:* w/o US Hwy. 395

*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 547 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 51 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 72 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 62.0 | feet |
| Centerline Dist. to Observer: | 62.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 86.63% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.08% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 7.29% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 50.725 |
| Medium Trucks: | 50.550 |
| Heavy Trucks: | 50.567 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -16.23 | -0.20 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -27.77 | -0.17 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -26.98 | -0.18 | -1.20 | -5.32 | 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: | 54.2 | 51.6 | 50.7 | 48.9 | 55.8 | 56.1 |
| Medium Trucks: | 53.3 | 51.1 | 48.5 | 47.6 | 54.6 | 54.9 |
| Heavy Trucks: | 58.0 | 55.5 | 53.9 | 53.0 | 59.8 | 60.1 |
| Vehicle Noise: | 60.5 | 58.0 | 56.4 | 55.2 | 62.1 | 62.4 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 18 | 40 | 85 | 184 |
| CNEL: | 19 | 41 | 89 | 193 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Eucalyptus St.
Road Segment: e/o US Hwy. 395
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 2,467 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 231 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 50 feet |

**Site Data**

| | |
|---|---|
| **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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 85.06% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 6.79% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.14% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| 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: | 71.78 | -9.77 | 0.79 | -1.20 | -4.65 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -20.75 | 0.82 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -19.96 | 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: | 61.6 | 59.0 | 58.2 | 56.3 | 63.2 | 63.6 |
| Medium Trucks: | 61.3 | 59.1 | 56.5 | 55.6 | 62.6 | 62.9 |
| Heavy Trucks: | 66.1 | 63.5 | 61.9 | 61.0 | 67.8 | 68.1 |
| Vehicle Noise: | 68.3 | 65.9 | 64.2 | 63.1 | 70.0 | 70.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 50 | 107 | 231 | 497 |
| CNEL: | 52 | 112 | 242 | 521 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Phelan Rd.
Road Segment: w/o Baldy Mesa Rd.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 22,357 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,097 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 48 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 52.0 feet |
| Centerline Dist. to Observer: | 52.0 feet |
| Barrier Distance to Observer: | 0.0 feet |
| Observer Height (Above Pad): | 5.0 feet |
| Pad Elevation: | 0.0 feet |
| Road Elevation: | 0.0 feet |
| Road Grade: | 0.0% |
| Left View: | -90.0 degrees |
| Right View: | 90.0 degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.09% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.23% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.68% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.25 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.90 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.11 | 0.41 | -1.20 | -5.41 | 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 | 68.1 | 67.3 | 65.4 | 72.3 | 72.7 |
| Medium Trucks: | 70.7 | 68.5 | 65.9 | 65.0 | 72.0 | 72.3 |
| Heavy Trucks: | 75.5 | 73.0 | 71.3 | 70.4 | 77.2 | 77.5 |
| Vehicle Noise: | 77.7 | 75.2 | 73.6 | 72.5 | 79.3 | 79.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 218 | 470 | 1,012 | 2,181 |
| CNEL: | 228 | 492 | 1,060 | 2,284 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Phelan Rd.
Road Segment: w/o Verbena Rd.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 22,698 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,129 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 48 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 52.0 feet |
| Centerline Dist. to Observer: | 52.0 feet |
| Barrier Distance to Observer: | 0.0 feet |
| Observer Height (Above Pad): | 5.0 feet |
| Pad Elevation: | 0.0 feet |
| Road Elevation: | 0.0 feet |
| Road Grade: | 0.0% |
| Left View: | -90.0 degrees |
| Right View: | 90.0 degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.43% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.08% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.49% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.16 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.93 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.14 | 0.41 | -1.20 | -5.41 | 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 | 68.2 | 67.4 | 65.5 | 72.4 | 72.8 |
| Medium Trucks: | 70.7 | 68.5 | 65.9 | 65.0 | 72.0 | 72.3 |
| Heavy Trucks: | 75.5 | 72.9 | 71.3 | 70.4 | 77.2 | 77.5 |
| Vehicle Noise: | 77.7 | 75.2 | 73.6 | 72.5 | 79.3 | 79.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 218 | 469 | 1,011 | 2,179 |
| CNEL: | 228 | 492 | 1,059 | 2,282 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Phelan Rd.
Road Segment: w/o Bellflower St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | |
|---|---|
| Average Daily Traffic (Adt): | 23,388 vehicles |
| Peak Hour Percentage: | 9.38% |
| Peak Hour Volume: | 2,194 vehicles |
| Vehicle Speed: | 55 mph |
| Near/Far Lane Distance: | 48 feet |

**Site Data**

| | |
|---|---|
| **Barrier Height:** | **0.0 feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 |
| Centerline Dist. to Barrier: | 52.0 feet |
| Centerline Dist. to Observer: | 52.0 feet |
| Barrier Distance to Observer: | 0.0 feet |
| Observer Height (Above Pad): | 5.0 feet |
| Pad Elevation: | 0.0 feet |
| Road Elevation: | 0.0 feet |
| Road Grade: | 0.0% |
| Left View: | -90.0 degrees |
| Right View: | 90.0 degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.47% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.06% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.47% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | -0.03 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.81 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -10.02 | 0.41 | -1.20 | -5.41 | 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 | 68.4 | 67.5 | 65.7 | 72.5 | 72.9 |
| Medium Trucks: | 70.8 | 68.6 | 66.0 | 65.1 | 72.1 | 72.4 |
| Heavy Trucks: | 75.6 | 73.1 | 71.4 | 70.5 | 77.3 | 77.6 |
| Vehicle Noise: | 77.8 | 75.4 | 73.7 | 72.6 | 79.5 | 79.8 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 222 | 478 | 1,030 | 2,220 |
| CNEL: | 232 | 501 | 1,079 | 2,325 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Phelan Rd.
Road Segment: e/o Dwy. 1
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 24,147 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 2,265 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 48 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 52.0 | feet |
| Centerline Dist. to Observer: | 52.0 | feet |
| Barrier Distance to Observer: | 0.0 | feet |
| Observer Height (Above Pad): | 5.0 | feet |
| Pad Elevation: | 0.0 | feet |
| Road Elevation: | 0.0 | feet |
| Road Grade: | 0.0% | |
| Left View: | -90.0 | degrees |
| Right View: | 90.0 | degrees |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.04% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.28% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.68% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 46.400 |
| Medium Trucks: | 46.209 |
| Heavy Trucks: | 46.228 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 0.09 | 0.38 | -1.20 | -4.66 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -10.54 | 0.41 | -1.20 | -4.87 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -9.78 | 0.41 | -1.20 | -5.41 | 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 | 68.5 | 67.6 | 65.8 | 72.7 | 73.0 |
| Medium Trucks: | 71.1 | 68.9 | 66.3 | 65.4 | 72.4 | 72.7 |
| Heavy Trucks: | 75.8 | 73.3 | 71.7 | 70.7 | 77.6 | 77.9 |
| Vehicle Noise: | 78.0 | 75.6 | 73.9 | 72.8 | 79.7 | 80.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 230 | 495 | 1,066 | 2,297 |
| CNEL: | 241 | 518 | 1,117 | 2,406 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Main St.
Road Segment: w/o Mesa Linda St.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 33,403 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,133 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 80.94% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 9.02% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 10.04% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 1.75 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.78 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.32 | 1.58 | -1.20 | -5.34 | 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 | 69.7 | 68.9 | 67.0 | 73.9 | 74.2 |
| Medium Trucks: | 73.6 | 71.4 | 68.8 | 67.9 | 74.9 | 75.2 |
| Heavy Trucks: | 78.4 | 75.9 | 74.3 | 73.4 | 80.2 | 80.5 |
| Vehicle Noise: | 80.4 | 77.9 | 76.2 | 75.2 | 82.0 | 82.3 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 380 | 819 | 1,765 | 3,802 |
| CNEL: | 398 | 858 | 1,848 | 3,981 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Main St.
Road Segment: w/o Catabra Rd.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 35,950 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 3,372 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 81.14% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 8.90% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 9.95% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 2.08 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.52 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -7.04 | 1.58 | -1.20 | -5.34 | 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 | 70.0 | 69.2 | 67.3 | 74.2 | 74.6 |
| Medium Trucks: | 73.9 | 71.7 | 69.1 | 68.2 | 75.2 | 75.5 |
| Heavy Trucks: | 78.7 | 76.2 | 74.6 | 73.6 | 80.5 | 80.7 |
| Vehicle Noise: | 80.7 | 78.2 | 76.5 | 75.5 | 82.3 | 82.6 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 397 | 856 | 1,844 | 3,973 |
| CNEL: | 416 | 896 | 1,931 | 4,159 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: HYP (2040)
Road Name: Main St.
Road Segment: e/o Key Point Av.
Project Name: Hesperia Commerce Cent
Job Number: 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 47,697 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 4,474 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 92 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.07% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.81% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 9.11% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 38.846 |
| Medium Trucks: | 38.617 |
| Heavy Trucks: | 38.640 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.41 | 1.54 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -6.86 | 1.58 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.19 | 1.58 | -1.20 | -5.34 | 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 | 71.4 | 70.5 | 68.7 | 75.6 | 75.9 |
| Medium Trucks: | 74.5 | 72.3 | 69.7 | 68.8 | 75.8 | 76.1 |
| Heavy Trucks: | 79.6 | 77.0 | 75.4 | 74.5 | 81.3 | 81.6 |
| Vehicle Noise: | 81.6 | 79.1 | 77.4 | 76.3 | 83.2 | 83.5 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 455 | 981 | 2,114 | 4,554 |
| CNEL: | 477 | 1,027 | 2,213 | 4,769 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Main St.
*Road Segment:* e/o Mariposa Rd.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 56,841 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 5,332 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.09% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.24% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.68% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 4.22 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -6.43 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -5.64 | 1.20 | -1.20 | -5.34 | 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: | 74.4 | 71.8 | 71.0 | 69.1 | 76.0 | 76.4 |
| Medium Trucks: | 74.6 | 72.4 | 69.8 | 68.9 | 75.9 | 76.2 |
| Heavy Trucks: | 79.7 | 77.2 | 75.6 | 74.7 | 81.5 | 81.8 |
| Vehicle Noise: | 81.8 | 79.3 | 77.6 | 76.5 | 83.4 | 83.7 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 470 | 1,012 | 2,181 | 4,699 |
| CNEL: | 492 | 1,060 | 2,284 | 4,921 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Main St.
*Road Segment:* w/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 58,997 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 5,534 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.08% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.24% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.68% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 4.38 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -6.27 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -5.48 | 1.20 | -1.20 | -5.34 | 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: | 74.6 | 72.0 | 71.1 | 69.3 | 76.2 | 76.5 |
| Medium Trucks: | 74.7 | 72.5 | 70.0 | 69.1 | 76.1 | 76.3 |
| Heavy Trucks: | 79.9 | 77.4 | 75.7 | 74.8 | 81.6 | 81.9 |
| Vehicle Noise: | 81.9 | 79.5 | 77.8 | 76.7 | 83.6 | 83.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 482 | 1,038 | 2,237 | 4,819 |
| CNEL: | 505 | 1,087 | 2,342 | 5,046 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Main St.
*Road Segment:* e/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 47,590 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 4,464 | vehicles |
| Vehicle Speed: | 50 | mph |
| Near/Far Lane Distance: | 88 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 60.0 | feet |
| Centerline Dist. to Observer: | 60.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 84.01% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.27% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.72% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 41.097 |
| Medium Trucks: | 40.882 |
| Heavy Trucks: | 40.903 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 70.20 | 3.45 | 1.17 | -1.20 | -4.69 | 0.000 | 0.000 |
| Medium Trucks: | 81.00 | -7.18 | 1.21 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 85.38 | -6.39 | 1.20 | -1.20 | -5.34 | 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 | 71.0 | 70.2 | 68.3 | 75.2 | 75.6 |
| Medium Trucks: | 73.8 | 71.6 | 69.0 | 68.1 | 75.1 | 75.4 |
| Heavy Trucks: | 79.0 | 76.5 | 74.8 | 73.9 | 80.7 | 81.0 |
| Vehicle Noise: | 81.0 | 78.6 | 76.9 | 75.8 | 82.7 | 83.0 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 418 | 902 | 1,942 | 4,185 |
| CNEL: | 438 | 944 | 2,034 | 4,383 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Main St.
*Road Segment:* e/o Topaz Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

**Highway Data**

| | | |
|---|---|---|
| Average Daily Traffic (Adt): | 43,355 | vehicles |
| Peak Hour Percentage: | 9.38% | |
| Peak Hour Volume: | 4,067 | vehicles |
| Vehicle Speed: | 55 | mph |
| Near/Far Lane Distance: | 106 | feet |

**Site Data**

| | | |
|---|---|---|
| **Barrier Height:** | **0.0** | **feet** |
| Barrier Type (0-Wall, 1-Berm): | 0.0 | |
| Centerline Dist. to Barrier: | 65.0 | feet |
| Centerline Dist. to Observer: | 65.0 | 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 |

### NOISE MODEL INPUTS

**Site Conditions (Hard = 10, Soft = 15)**

| | |
|---|---|
| Autos: | 15 |
| Medium Trucks (2 Axles): | 15 |
| Heavy Trucks (3+ Axles): | 15 |

**Vehicle Mix**

| VehicleType | Day | Evening | Night | Daily |
|---|---|---|---|---|
| Autos: | 62.2% | 12.7% | 25.0% | 83.92% |
| Medium Trucks: | 67.8% | 9.4% | 22.8% | 7.31% |
| Heavy Trucks: | 63.0% | 10.8% | 26.2% | 8.77% |

**Noise Source Elevations (in feet)**

| | | | |
|---|---|---|---|
| Autos: | 0.000 | | |
| Medium Trucks: | 2.297 | | |
| Heavy Trucks: | 8.004 | Grade Adjustment: | 0.0 |

**Lane Equivalent Distance (in feet)**

| | |
|---|---|
| Autos: | 37.961 |
| Medium Trucks: | 37.727 |
| Heavy Trucks: | 37.749 |

**FHWA Noise Model Calculations**

| VehicleType | REMEL | Traffic Flow | Distance | Finite Road | Fresnel | Barrier Atten | Berm Atten |
|---|---|---|---|---|---|---|---|
| Autos: | 71.78 | 2.62 | 1.69 | -1.20 | -4.70 | 0.000 | 0.000 |
| Medium Trucks: | 82.40 | -7.98 | 1.73 | -1.20 | -4.88 | 0.000 | 0.000 |
| Heavy Trucks: | 86.40 | -7.19 | 1.73 | -1.20 | -5.30 | 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: | 74.9 | 72.3 | 71.5 | 69.6 | 76.5 | 76.8 |
| Medium Trucks: | 75.0 | 72.8 | 70.2 | 69.3 | 76.3 | 76.6 |
| Heavy Trucks: | 79.7 | 77.2 | 75.6 | 74.7 | 81.5 | 81.8 |
| Vehicle Noise: | 81.9 | 79.5 | 77.8 | 76.7 | 83.6 | 83.9 |

**Centerline Distance to Noise Contour (in feet)**

| | 70 dBA | 65 dBA | 60 dBA | 55 dBA |
|---|---|---|---|---|
| Ldn: | 522 | 1,124 | 2,422 | 5,217 |
| CNEL: | 546 | 1,177 | 2,536 | 5,465 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Sultana St.
*Road Segment:* e/o Escondido Av.
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 6,016 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 564 | vehicles |
| *Vehicle Speed:* | 40 | mph |
| *Near/Far Lane Distance:* | 23 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 30.0 | feet |
| *Centerline Dist. to Observer:* | 30.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 84.33% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.13% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.55% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 28.156 |
| *Medium Trucks:* | 27.840 |
| *Heavy Trucks:* | 27.871 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 66.51 | -4.55 | 3.64 | -1.20 | *-4.49* | 0.000 | 0.000 |
| *Medium Trucks:* | 77.72 | -15.28 | 3.71 | -1.20 | *-4.86* | 0.000 | 0.000 |
| *Heavy Trucks:* | 82.99 | -14.49 | 3.70 | -1.20 | *-5.77* | 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:* | 64.4 | 61.8 | 61.0 | 59.1 | 66.0 | 66.4 |
| *Medium Trucks:* | 64.9 | 62.7 | 60.2 | 59.3 | 66.3 | 66.5 |
| *Heavy Trucks:* | 71.0 | 68.5 | 66.8 | 65.9 | 72.7 | 73.0 |
| *Vehicle Noise:* | 72.7 | 70.2 | 68.5 | 67.5 | 74.3 | 74.6 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 58 | 125 | 270 | 582 |
| *CNEL:* | 61 | 131 | 283 | 609 |

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## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

*Scenario:* HYP (2040)
*Road Name:* Joshua St.
*Road Segment:* e/o US Hwy. 395
*Project Name:* Hesperia Commerce Cent
*Job Number:* 12780

### SITE SPECIFIC INPUT DATA

***Highway Data***

| | | |
|---|---|---|
| *Average Daily Traffic (Adt):* | 11,537 | vehicles |
| *Peak Hour Percentage:* | 9.38% | |
| *Peak Hour Volume:* | 1,082 | vehicles |
| *Vehicle Speed:* | 55 | mph |
| *Near/Far Lane Distance:* | 50 | feet |

***Site Data***

| | | |
|---|---|---|
| ***Barrier Height:*** | **0.0** | **feet** |
| *Barrier Type (0-Wall, 1-Berm):* | 0.0 | |
| *Centerline Dist. to Barrier:* | 40.0 | feet |
| *Centerline Dist. to Observer:* | 40.0 | 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 |

### NOISE MODEL INPUTS

***Site Conditions (Hard = 10, Soft = 15)***

| | |
|---|---|
| *Autos:* | 15 |
| *Medium Trucks (2 Axles):* | 15 |
| *Heavy Trucks (3+ Axles):* | 15 |

***Vehicle Mix***

| *VehicleType* | *Day* | *Evening* | *Night* | *Daily* |
|---|---|---|---|---|
| *Autos:* | 62.2% | 12.7% | 25.0% | 84.35% |
| *Medium Trucks:* | 67.8% | 9.4% | 22.8% | 7.12% |
| *Heavy Trucks:* | 63.0% | 10.8% | 26.2% | 8.54% |

***Noise Source Elevations (in feet)***

| | | | |
|---|---|---|---|
| *Autos:* | 0.000 | | |
| *Medium Trucks:* | 2.297 | | |
| *Heavy Trucks:* | 8.004 | *Grade Adjustment:* | 0.0 |

***Lane Equivalent Distance (in feet)***

| | |
|---|---|
| *Autos:* | 31.623 |
| *Medium Trucks:* | 31.342 |
| *Heavy Trucks:* | 31.369 |

***FHWA Noise Model Calculations***

| *VehicleType* | *REMEL* | *Traffic Flow* | *Distance* | *Finite Road* | *Fresnel* | *Barrier Atten* | *Berm Atten* |
|---|---|---|---|---|---|---|---|
| *Autos:* | 71.78 | -3.11 | 2.88 | -1.20 | *-4.59* | 0.000 | 0.000 |
| *Medium Trucks:* | 82.40 | -13.84 | 2.94 | -1.20 | *-4.87* | 0.000 | 0.000 |
| *Heavy Trucks:* | 86.40 | -13.05 | 2.93 | -1.20 | *-5.56* | 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 | 67.8 | 66.9 | 65.1 | 72.0 | 72.3 |
| *Medium Trucks:* | 70.3 | 68.1 | 65.5 | 64.6 | 71.6 | 71.9 |
| *Heavy Trucks:* | 75.1 | 72.6 | 70.9 | 70.0 | 76.8 | 77.1 |
| *Vehicle Noise:* | 77.3 | 74.8 | 73.2 | 72.1 | 78.9 | 79.2 |

***Centerline Distance to Noise Contour (in feet)***

| | *70 dBA* | *65 dBA* | *60 dBA* | *55 dBA* |
|---|---|---|---|---|
| *Ldn:* | 158 | 340 | 731 | 1,576 |
| *CNEL:* | 165 | 356 | 766 | 1,651 |

Tuesday, July 14, 2020

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# APPENDIX 9.1:

# CADNAA OPERATIONAL NOISE MODEL INPUTS

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# 12780 - Hesperia Commerce II

**CadnaA Noise Prediction Model:** 12780.cna
**Date:** 15.07.20
**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 Rvcr - Reflector | 1.00 1.00 |
| Min. Distance Source - Reflector | 0.10 |
| Industrial (ISO 9613) | |
| Lateral Diffraction | some Obj |
| Obst. within Area Src do not shield | On |
| Screening | Incl. Ground Att. over Barrier |
| | Dz with limit (20/25) |
| Barrier Coefficients C1,2,3 | 3.0 20.0 0.0 |
| Temperature (#(Unit,TEMP)) | 10 |
| rel. Humidity (%) | 70 |
| Ground Absorption G | 0.00 |
| Wind Speed for Dir. (#(Unit,SPEED)) | 3.0 |
| Roads (RLS-90) | |
| Strictly acc. to RLS-90 | |
| 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 | 53.7 | 53.1 | 59.8 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6210708.20 | 2467486.53 | 5.00 |
| RECEIVERS | | R2 | 50.0 | 49.4 | 56.1 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6216473.10 | 2464880.91 | 5.00 |
| RECEIVERS | | R3 | 53.9 | 53.1 | 59.9 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6210199.09 | 2464616.15 | 5.00 |
| RECEIVERS | | R4 | 50.8 | 49.9 | 56.6 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6209477.38 | 2465621.71 | 5.00 |
| RECEIVERS | | R5 | 50.8 | 50.2 | 56.9 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6209637.11 | 2466811.81 | 5.00 |
| RECEIVERS | | R6 | 50.2 | 49.8 | 56.5 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6214435.39 | 2469223.71 | 5.00 |

## Point Source(s)

| Name | M. | ID | Result. PWL | | | Lw / Li | | | Operating Time | | | K0 | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | Type | Value | norm. | Day | Special | Night | | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | | | dB(A) | (min) | (min) | (min) | (dB) | (ft) | | (ft) | (ft) | (ft) |
| POINTSOURCE | | AC01 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6211265.98 | 2466272.06 | 50.00 |
| POINTSOURCE | | AC02 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6213444.01 | 2466247.92 | 50.00 |
| POINTSOURCE | | AC03 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6213427.92 | 2465016.74 | 50.00 |
| POINTSOURCE | | AC04 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6210509.56 | 2465048.93 | 50.00 |
| POINTSOURCE | | AC05 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6213454.74 | 2466985.56 | 50.00 |
| POINTSOURCE | | AC06 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6211308.89 | 2466948.00 | 50.00 |
| POINTSOURCE | | AC07 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6214787.85 | 2466674.41 | 50.00 |
| POINTSOURCE | | AC08 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6214369.41 | 2466674.41 | 50.00 |
| POINTSOURCE | | AC09 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6213449.38 | 2465757.06 | 50.00 |
| POINTSOURCE | | AC10 | 88.9 | 88.9 | 88.9 | Lw | 88.9 | | 585.00 | 0.00 | 252.00 | 0.0 | 5.00 | g | 6210560.53 | 2465719.50 | 50.00 |

| Name | M. | ID | Result. PWL | | | Lw / Li | | | Operating Time | | | K0 | Height | | Coordinates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | Type | Value | norm. | Day | Special | Night | | | | X | Y | Z |
| | | | (dBA) | (dBA) | (dBA) | | | dB(A) | (min) | (min) | (min) | (dB) | (ft) | | (ft) | (ft) | (ft) |
| POINTSOURCE | | TRASH01 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6210687.13 | 2464913.54 | 5.00 |
| POINTSOURCE | | TRASH02 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6213248.24 | 2464891.32 | 5.00 |
| POINTSOURCE | | TRASH03 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6210698.24 | 2465910.76 | 5.00 |
| POINTSOURCE | | TRASH04 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6213342.69 | 2465888.54 | 5.00 |
| POINTSOURCE | | TRASH05 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6213256.58 | 2466130.20 | 5.00 |
| POINTSOURCE | | TRASH06 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6211417.69 | 2466146.87 | 5.00 |
| POINTSOURCE | | TRASH07 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6211453.80 | 2467130.20 | 5.00 |
| POINTSOURCE | | TRASH08 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6213364.91 | 2467138.54 | 5.00 |
| POINTSOURCE | | TRASH09 | 89.0 | 89.0 | 89.0 | Lw | 89 | | 75.00 | 0.00 | 45.00 | 0.0 | 5.00 | a | 6214686.92 | 2466582.16 | 5.00 |

## Line Source(s)

| Name | M. | ID | Result. PWL | | | Result. PWL' | | | Lw / Li | | | Operating Time | | | Moving Pt. Src | | | | Height |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | Day | Evening | Night | Type | Value | norm. | Day | Special | Night | Number | | | Speed | |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | | | dB(A) | (min) | (min) | (min) | Day | Evening | Night | (mph) | (ft) |
| LINESOURCE | | DWY01 | 94.8 | 87.1 | 91.0 | 73.2 | 65.5 | 69.4 | PWL-Pt | 89.7 | | | | | 224.0 | 38.0 | 93.0 | 6.2 | 8 |
| LINESOURCE | | DWY02 | 100.3 | 92.6 | 96.5 | 73.2 | 65.5 | 69.4 | PWL-Pt | 89.7 | | | | | 224.0 | 38.0 | 93.0 | 6.2 | 8 |
| LINESOURCE | | DWY03 | 94.3 | 86.7 | 90.6 | 72.4 | 64.8 | 68.6 | PWL-Pt | 89.7 | | | | | 187.0 | 32.0 | 78.0 | 6.2 | 8 |
| LINESOURCE | | DWY04 | 98.0 | 90.3 | 94.2 | 72.4 | 64.8 | 68.6 | PWL-Pt | 89.7 | | | | | 187.0 | 32.0 | 78.0 | 6.2 | 8 |
| LINESOURCE | | DWY05 | 94.6 | 86.9 | 90.8 | 72.4 | 64.8 | 68.6 | PWL-Pt | 89.7 | | | | | 187.0 | 32.0 | 78.0 | 6.2 | 8 |
| LINESOURCE | | DWY06 | 99.3 | 91.7 | 95.5 | 78.0 | 70.3 | 74.2 | PWL-Pt | 89.7 | | | | | 672.0 | 115.0 | 279.0 | 6.2 | 8 |
| LINESOURCE | | DWY07 | 103.6 | 95.9 | 99.8 | 78.0 | 70.3 | 74.2 | PWL-Pt | 89.7 | | | | | 672.0 | 115.0 | 279.0 | 6.2 | 8 |
| LINESOURCE | | DWY08 | 101.4 | 93.7 | 97.5 | 78.0 | 70.3 | 74.2 | PWL-Pt | 89.7 | | | | | 672.0 | 115.0 | 279.0 | 6.2 | 8 |
| LINESOURCE | | DWY09 | 101.5 | 93.8 | 97.6 | 75.8 | 68.2 | 72.0 | PWL-Pt | 89.7 | | | | | 410.0 | 70.0 | 170.0 | 6.2 | 8 |
| LINESOURCE | | DWY10 | 95.7 | 88.1 | 91.9 | 75.8 | 68.2 | 72.0 | PWL-Pt | 89.7 | | | | | 410.0 | 70.0 | 170.0 | 6.2 | 8 |
| LINESOURCE | | DWY11 | 104.1 | 96.4 | 100.3 | 78.0 | 70.3 | 74.2 | PWL-Pt | 89.7 | | | | | 672.0 | 115.0 | 279.0 | 6.2 | 8 |
| LINESOURCE | | DWY12 | 96.4 | 88.7 | 92.6 | 78.0 | 70.3 | 74.2 | PWL-Pt | 89.7 | | | | | 672.0 | 115.0 | 279.0 | 6.2 | 8 |

| Name | Height | | | | Coordinates | | | |
|---|---|---|---|---|---|---|---|---|
| | Begin | | End | | x | y | z | Ground |
| | (ft) | | (ft) | | (ft) | (ft) | (ft) | (ft) |
| LINESOURCE | 8.00 | a | | | 6211513.59 | 2467403.96 | 8.00 | 0.00 |
| | | | | | 6211510.12 | 2467303.26 | 8.00 | 0.00 |
| | | | | | 6211341.72 | 2467164.37 | 8.00 | 0.00 |
| | | | | | 6211315.67 | 2467117.50 | 8.00 | 0.00 |
| | | | | | 6211410.30 | 2467087.88 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6211315.67 | 2467117.50 | 8.00 | 0.00 |
| | | | | | 6210767.06 | 2466225.14 | 8.00 | 0.00 |
| | | | | | 6210777.48 | 2466195.62 | 8.00 | 0.00 |
| | | | | | 6211378.08 | 2466191.60 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6210767.06 | 2466225.14 | 8.00 | 0.00 |
| | | | | | 6210555.26 | 2465891.80 | 8.00 | 0.00 |
| | | | | | 6210572.62 | 2465870.97 | 8.00 | 0.00 |
| | | | | | 6210661.37 | 2465858.67 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6210555.26 | 2465891.80 | 8.00 | 0.00 |
| | | | | | 6210112.55 | 2465147.01 | 8.00 | 0.00 |
| | | | | | 6210103.87 | 2464836.25 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6210107.37 | 2464961.44 | 8.00 | 0.00 |
| | | | | | 6210650.72 | 2464964.72 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6213675.05 | 2464858.82 | 8.00 | 0.00 |
| | | | | | 6213675.05 | 2464928.26 | 8.00 | 0.00 |
| | | | | | 6213295.47 | 2464936.93 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6213675.05 | 2464928.26 | 8.00 | 0.00 |
| | | | | | 6213676.78 | 2465832.78 | 8.00 | 0.00 |
| | | | | | 6213388.79 | 2465836.60 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6213676.78 | 2465832.78 | 8.00 | 0.00 |
| | | | | | 6213681.99 | 2466167.84 | 8.00 | 0.00 |
| | | | | | 6213301.97 | 2466166.30 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6213681.99 | 2466167.84 | 8.00 | 0.00 |
| | | | | | 6213678.52 | 2467065.41 | 8.00 | 0.00 |
| | | | | | 6213378.29 | 2467070.09 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6213678.52 | 2467065.41 | 8.00 | 0.00 |
| | | | | | 6213671.58 | 2467386.59 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6214709.87 | 2466613.29 | 8.00 | 0.00 |
| | | | | | 6214821.16 | 2466610.32 | 8.00 | 0.00 |
| | | | | | 6214820.17 | 2466524.71 | 8.00 | 0.00 |
| | | | | | 6213680.59 | 2466530.66 | 8.00 | 0.00 |
| LINESOURCE | 8.00 | a | | | 6214451.05 | 2466616.27 | 8.00 | 0.00 |
| | | | | | 6214309.48 | 2466614.30 | 8.00 | 0.00 |
| | | | | | 6214307.47 | 2466527.38 | 8.00 | 0.00 |

## 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 | Night | (ft) |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | | | dB(A) | (min) | (min) | (min) | |
| AREASOURCE | | DOCK01 | 111.5 | 111.5 | 111.5 | 63.2 | 63.2 | 63.2 | Lw | 111.5 | | | | | 8 |

| Name | M. | ID | Result. PWL | | | Result. PWL'' | | | Lw / Li | | | Operating Time | | | Height |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Day | Evening | Night | Day | Evening | Night | Type | Value | norm. | Day | Special | Night | (ft) |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | | | dB(A) | (min) | (min) | (min) | |
| AREASOURCE | | DOCK02 | 111.5 | 111.5 | 111.5 | 66.3 | 66.3 | 66.3 | Lw | 111.5 | | | | | 8 |
| AREASOURCE | | DOCK03 | 111.5 | 111.5 | 111.5 | 61.7 | 61.7 | 61.7 | Lw | 111.5 | | | | | 8 |
| AREASOURCE | | DOCK04 | 111.5 | 111.5 | 111.5 | 64.5 | 64.5 | 64.5 | Lw | 111.5 | | | | | 8 |
| AREASOURCE | | DOCK05 | 111.5 | 111.5 | 111.5 | 75.7 | 75.7 | 75.7 | Lw | 111.5 | | | | | 8 |

| Name | Height | | | | Coordinates | | | |
|---|---|---|---|---|---|---|---|---|
| | Begin | | End | | x | y | z | Ground |
| | (ft) | | (ft) | | (ft) | (ft) | (ft) | (ft) |
| AREASOURCE | 8.00 | a | | | 6211409.21 | 2466963.09 | 8.00 | 0.00 |
| | | | | | 6211412.15 | 2467161.24 | 8.00 | 0.00 |
| | | | | | 6211571.09 | 2467155.16 | 8.00 | 0.00 |
| | | | | | 6211573.61 | 2467348.74 | 8.00 | 0.00 |
| | | | | | 6213401.73 | 2467327.90 | 8.00 | 0.00 |
| | | | | | 6213402.70 | 2467019.08 | 8.00 | 0.00 |
| | | | | | 6213310.25 | 2467019.08 | 8.00 | 0.00 |
| | | | | | 6213311.55 | 2466943.56 | 8.00 | 0.00 |
| AREASOURCE | 8.00 | a | | | 6211380.90 | 2466124.78 | 8.00 | 0.00 |
| | | | | | 6211380.99 | 2466236.75 | 8.00 | 0.00 |
| | | | | | 6211402.70 | 2466236.75 | 8.00 | 0.00 |
| | | | | | 6211402.70 | 2466312.70 | 8.00 | 0.00 |
| | | | | | 6213304.82 | 2466291.00 | 8.00 | 0.00 |
| | | | | | 6213302.77 | 2466103.95 | 8.00 | 0.00 |
| AREASOURCE | 8.00 | a | | | 6210658.12 | 2465735.12 | 8.00 | 0.00 |
| | | | | | 6210651.73 | 2465934.68 | 8.00 | 0.00 |
| | | | | | 6210735.07 | 2465939.88 | 8.00 | 0.00 |
| | | | | | 6210732.46 | 2466072.70 | 8.00 | 0.00 |
| | | | | | 6210763.71 | 2466116.97 | 8.00 | 0.00 |
| | | | | | 6213391.32 | 2466093.53 | 8.00 | 0.00 |
| | | | | | 6213385.99 | 2465783.30 | 8.00 | 0.00 |
| | | | | | 6213305.26 | 2465784.60 | 8.00 | 0.00 |
| | | | | | 6213303.95 | 2465707.78 | 8.00 | 0.00 |
| AREASOURCE | 8.00 | a | | | 6210651.73 | 2464885.20 | 8.00 | 0.00 |
| | | | | | 6210652.91 | 2465091.89 | 8.00 | 0.00 |
| | | | | | 6213298.75 | 2465065.85 | 8.00 | 0.00 |
| | | | | | 6213292.36 | 2464864.36 | 8.00 | 0.00 |
| AREASOURCE | 8.00 | a | | | 6214451.84 | 2466718.82 | 8.00 | 0.00 |
| | | | | | 6214710.66 | 2466718.82 | 8.00 | 0.00 |
| | | | | | 6214709.49 | 2466565.87 | 8.00 | 0.00 |
| | | | | | 6214379.97 | 2466570.90 | 8.00 | 0.00 |
| | | | | | 6214379.97 | 2466591.03 | 8.00 | 0.00 |
| | | | | | 6214451.24 | 2466591.03 | 8.00 | 0.00 |

## Building(s)

| Name | M. | ID | RB | Residents | Absorption | Height | | Coordinates | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Begin | | x | y | z | Ground |
| | | | | | | (ft) | | (ft) | (ft) | (ft) | (ft) |
| BUILDING | | BUILDING00001 | x | 0 | | 45.00 | a | 6211284.43 | 2466980.09 | 45.00 | 0.00 |
| | | | | | | | | 6211285.12 | 2466980.78 | 45.00 | 0.00 |
| | | | | | | | | 6213309.43 | 2466962.03 | 45.00 | 0.00 |
| | | | | | | | | 6213310.82 | 2467020.36 | 45.00 | 0.00 |
| | | | | | | | | 6213494.84 | 2467018.97 | 45.00 | 0.00 |
| | | | | | | | | 6213486.51 | 2466215.50 | 45.00 | 0.00 |
| | | | | | | | | 6211219.84 | 2466239.11 | 45.00 | 0.00 |
| | | | | | | | | 6211226.09 | 2466889.81 | 45.00 | 0.00 |
| BUILDING | | BUILDING00002 | x | 0 | | 45.00 | a | 6210534.60 | 2465759.34 | 45.00 | 0.00 |
| | | | | | | | | 6213304.13 | 2465726.79 | 45.00 | 0.00 |
| | | | | | | | | 6213302.83 | 2465785.38 | 45.00 | 0.00 |
| | | | | | | | | 6213482.52 | 2465782.78 | 45.00 | 0.00 |
| | | | | | | | | 6213473.40 | 2464989.81 | 45.00 | 0.00 |
| | | | | | | | | 6213296.32 | 2464985.90 | 45.00 | 0.00 |
| | | | | | | | | 6213293.72 | 2465043.19 | 45.00 | 0.00 |
| | | | | | | | | 6210654.39 | 2465070.54 | 45.00 | 0.00 |
| | | | | | | | | 6210651.79 | 2465013.25 | 45.00 | 0.00 |
| | | | | | | | | 6210472.10 | 2465013.25 | 45.00 | 0.00 |
| | | | | | | | | 6210476.01 | 2465674.70 | 45.00 | 0.00 |
| BUILDING | | BUILDING00003 | x | 0 | | 45.00 | a | 6214453.84 | 2466643.54 | 45.00 | 0.00 |
| | | | | | | | | 6214423.24 | 2466643.32 | 45.00 | 0.00 |
| | | | | | | | | 6214422.38 | 2466640.72 | 45.00 | 0.00 |
| | | | | | | | | 6214384.62 | 2466640.50 | 45.00 | 0.00 |
| | | | | | | | | 6214383.75 | 2466643.76 | 45.00 | 0.00 |
| | | | | | | | | 6214381.58 | 2466643.97 | 45.00 | 0.00 |
| | | | | | | | | 6214381.58 | 2466648.53 | 45.00 | 0.00 |
| | | | | | | | | 6214377.02 | 2466648.31 | 45.00 | 0.00 |
| | | | | | | | | 6214376.80 | 2466644.19 | 45.00 | 0.00 |
| | | | | | | | | 6214370.08 | 2466644.19 | 45.00 | 0.00 |
| | | | | | | | | 6214370.08 | 2466645.28 | 45.00 | 0.00 |

| Name | M. | ID | RB | Residents | Absorption | Height | | Coordinates | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Begin | | x | y | z | Ground |
| | | | | | | (ft) | | (ft) | (ft) | (ft) | (ft) |
| | | | | | | | | 6214363.78 | 2466645.06 | 45.00 | 0.00 |
| | | | | | | | | 6214364.00 | 2466642.67 | 45.00 | 0.00 |
| | | | | | | | | 6214362.05 | 2466643.11 | 45.00 | 0.00 |
| | | | | | | | | 6214344.69 | 2466645.71 | 45.00 | 0.00 |
| | | | | | | | | 6214342.30 | 2466678.26 | 45.00 | 0.00 |
| | | | | | | | | 6214347.07 | 2466678.91 | 45.00 | 0.00 |
| | | | | | | | | 6214347.29 | 2466686.51 | 45.00 | 0.00 |
| | | | | | | | | 6214338.61 | 2466687.38 | 45.00 | 0.00 |
| | | | | | | | | 6214338.39 | 2466713.64 | 45.00 | 0.00 |
| | | | | | | | | 6214343.17 | 2466714.46 | 45.00 | 0.00 |
| | | | | | | | | 6214344.99 | 2466898.05 | 45.00 | 0.00 |
| | | | | | | | | 6214824.42 | 2466893.37 | 45.00 | 0.00 |
| | | | | | | | | 6214820.25 | 2466638.94 | 45.00 | 0.00 |
| | | | | | | | | 6214786.40 | 2466639.20 | 45.00 | 0.00 |
| | | | | | | | | 6214786.66 | 2466644.15 | 45.00 | 0.00 |
| | | | | | | | | 6214782.23 | 2466644.15 | 45.00 | 0.00 |
| | | | | | | | | 6214781.97 | 2466640.24 | 45.00 | 0.00 |
| | | | | | | | | 6214776.76 | 2466636.07 | 45.00 | 0.00 |
| | | | | | | | | 6214727.54 | 2466637.12 | 45.00 | 0.00 |
| | | | | | | | | 6214727.02 | 2466640.24 | 45.00 | 0.00 |
| | | | | | | | | 6214708.01 | 2466641.02 | 45.00 | 0.00 |
| | | | | | | | | 6214709.31 | 2466699.62 | 45.00 | 0.00 |
| | | | | | | | | 6214454.36 | 2466702.74 | 45.00 | 0.00 |

# APPENDIX 10.1:

# CADNAA CONSTRUCTION NOISE MODEL INPUTS

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# 12780 - Hesperia Commerce II

**CadnaA Noise Prediction Model:** 12780_Construction.cna
**Date:** 15.07.20
**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 Rvcr - Reflector | 1.00 1.00 |
| Min. Distance Source - Reflector | 0.10 |
| Industrial (ISO 9613) | |
| Lateral Diffraction | some Obj |
| Obst. within Area Src do not shield | On |
| Screening | Incl. Ground Att. over Barrier |
| | Dz with limit (20/25) |
| Barrier Coefficients C1,2,3 | 3.0 20.0 0.0 |
| Temperature (#(Unit,TEMP)) | 10 |
| rel. Humidity (%) | 70 |
| Ground Absorption G | 0.00 |
| Wind Speed for Dir. (#(Unit,SPEED)) | 3.0 |
| Roads (RLS-90) | |
| Strictly acc. to RLS-90 | |
| 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 | 72.1 | 72.1 | 78.7 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6210708.20 | 2467486.53 | 5.00 |
| RECEIVERS | | R2 | 64.7 | 64.7 | 71.3 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6216473.10 | 2464880.91 | 5.00 |
| RECEIVERS | | R3 | 73.6 | 73.6 | 80.3 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6210199.09 | 2464616.15 | 5.00 |
| RECEIVERS | | R4 | 70.7 | 70.7 | 77.4 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6209477.38 | 2465621.71 | 5.00 |
| RECEIVERS | | R5 | 69.8 | 69.8 | 76.5 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6209637.11 | 2466811.81 | 5.00 |
| RECEIVERS | | R6 | 66.1 | 66.1 | 72.8 | 60.0 | 55.0 | 0.0 | | | | 5.00 | a | 6214435.39 | 2469223.71 | 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 | Night | (ft) |
| | | | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | (dBA) | | | dB(A) | (min) | (min) | (min) | |
| SITEBOUNDARY | | CONSTRUCTION | 134.3 | 134.3 | 134.3 | 75.3 | 75.3 | 75.3 | Lw'' | 75.3 | | | | | 8 |

| Name | Height | | | | Coordinates | | | |
|---|---|---|---|---|---|---|---|---|
| | Begin | | End | | x | y | z | Ground |
| | (ft) | | (ft) | | (ft) | (ft) | (ft) | (ft) |
| SITEBOUNDARY | 8.00 | a | | | 6213705.72 | 2467390.83 | 8.00 | 0.00 |
| | | | | | 6213708.33 | 2466945.51 | 8.00 | 0.00 |
| | | | | | 6215036.45 | 2466932.49 | 8.00 | 0.00 |
| | | | | | 6215033.85 | 2466489.79 | 8.00 | 0.00 |
| | | | | | 6213710.93 | 2466505.41 | 8.00 | 0.00 |

| Name | Height | | Coordinates | | | |
|---|---|---|---|---|---|---|
| | Begin | End | x | y | z | Ground |
| | (ft) | (ft) | (ft) | (ft) | (ft) | (ft) |
| | | | 6213705.14 | 2464859.00 | 8.00 | 0.00 |
| | | | 6213370.94 | 2464859.00 | 8.00 | 0.00 |
| | | | 6213368.77 | 2464802.57 | 8.00 | 0.00 |
| | | | 6209869.21 | 2464836.43 | 8.00 | 0.00 |
| | | | 6211434.17 | 2467407.46 | 8.00 | 0.00 |