Antelope Valley Commerce Center

NOISE AND VIBRATION ANALYSIS

CITY OF PALMDALE

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JANUARY 12, 2024

14267-03 NA

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
AI	Aerospace Industrial
AIA	Airport Influence Area
AICUZ	Air Installation Compatible Use Zone
ALUC	Airport Land Use Commission
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
FICON	Federal Interagency Committee on Noise
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
L_{max}	Maximum level measured over the time interval
L_{min}	Minimum level measured over the time interval
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Antelope Valley Commerce Center
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the potential noise impacts and the necessary noise mitigation measures, if any, for Antelope Valley Commerce Center ("Project"). The Project is proposed to consist of combination of commercial and industrial land use on 433 acres. This study has been prepared to satisfy applicable City of Palmdale 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 Antelope Valley Commerce Center Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report. Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	7	*Less Than Significant*	-
Operational Noise	9	*Less Than Significant*	-
Construction Noise	10	*Less Than Significant*	-
Concrete Pour Noise		*Less Than Significant*	-
Construction Vibration		*Less Than Significant*	-
On-Site Rail Noise	11	*Less Than Significant*	-
On-Site Rail 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 Antelope Valley Commerce Center ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment with nearby rail activity. 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 Project site is located near the southeast corner of Avenue M/Columbia Way and Sierra Highway in the City of Palmdale as shown on Exhibit 1-A. The Project site is vacant with nearby noise sensitive land uses located to the north across Avenue M. The Project site is located approximately 0.25 miles north of Runway 7 at Palmdale Airport/USAF Plant 42.

1.2 PROJECT DESCRIPTION

The Project is proposed to consist of the following uses for each phase (see Exhibit 1-B):

- Phase 1:
    - Building 1 is 136,670 square feet
    - Building 2 is 144,306 square feet
    - Building 3 is 132,695 square feet
    - Buildings 1 through 3 will assume 25% general light industrial and 75% general warehousing use
    - Building 4 is 680,469 square feet of high-cube fulfillment center (sort) warehouse use
    - Building 5 is 1,004,228 square feet with 25% high-cube cold storage warehouse use and high-cube fulfillment center (non-sort) warehouse use
    - Building 6 is 274,858 square feet with 25% manufacturing and 75% general warehousing use
- Phase 2:
    - 1,630,362 square feet of high-cube parcel hub warehousing use
    - 549,790 square feet with 25% manufacturing and 75% general warehousing use
- Phase 3:
    - 1,156,576 square feet with 25% high-cube cold storage warehouse use and 75% high-cube fulfillment (non-sort) warehousing use
    - 2,500 square feet of fast-food restaurant without drive-through window use, 2,500 square feet of fast-food restaurant with drive-through window use, 2,000 square feet of coffee shop with drive-through window use, and 53,984 square feet of commercial retail use (for a total of 60,984 square feet)
- Phase 4:
    - 2,555,556 square feet with 25% high-cube cold storage warehouse use and 75% high-cube fulfillment (non-sort) warehousing use

The proposed Project is anticipated to have an opening year of 2025 for Phase 1 and 2032 for Project Buildout. 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.

EXHIBIT 1-A: LOCATION MAP

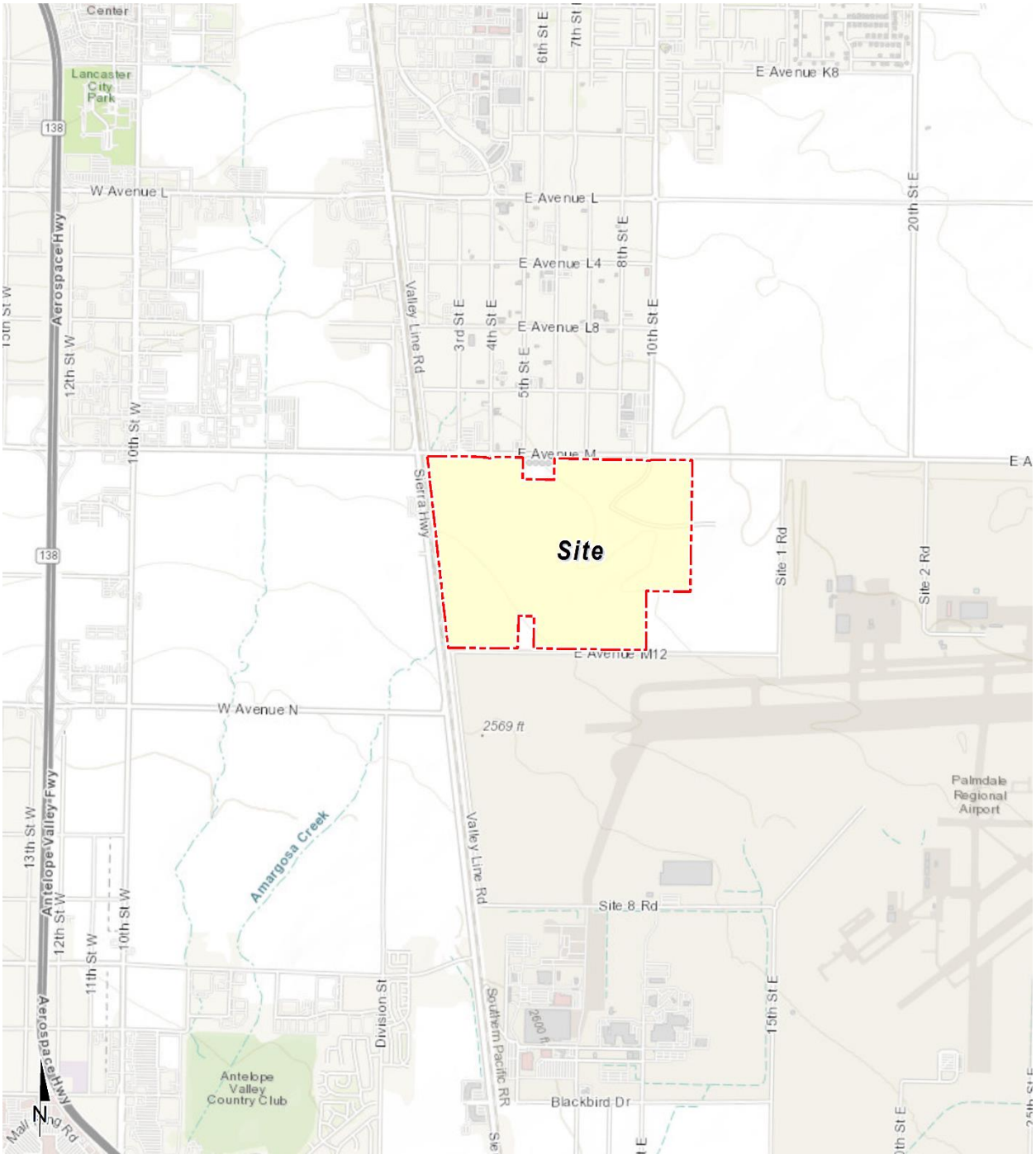
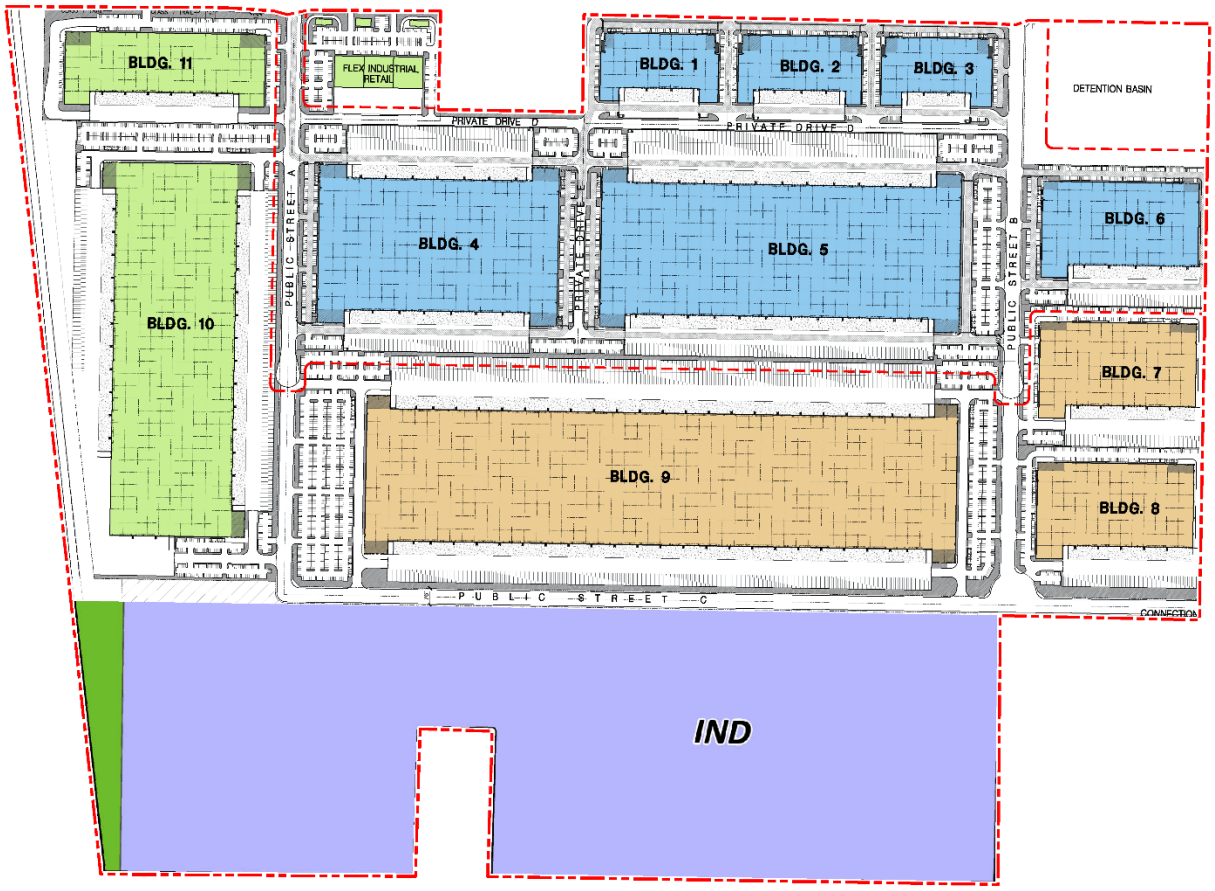


EXHIBIT 1-B: PRELIMINARY SITE PLAN



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LEGEND:

Site Boundary

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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	SLEEP DISTURBANCE
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		
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 1,000 feet, which can cause serious discomfort. (3) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

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

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when noise can become more intrusive. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Palmdale 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 high, 100 feet wide and dense enough to completely obstruct the line-of-sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The Federal Highway Administration (FHWA) does not consider the planting of vegetation to be a noise abatement measure. (5)

2.4 NOISE CONTROL

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

2.5 NOISE BARRIER ATTENUATION

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

2.6 LAND USE COMPATIBILITY WITH NOISE

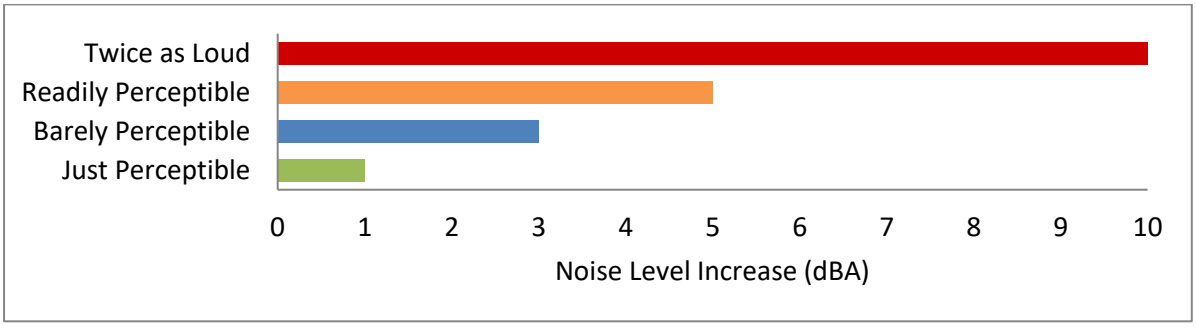
Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development,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

2.7 COMMUNITY RESPONSE TO NOISE

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

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

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



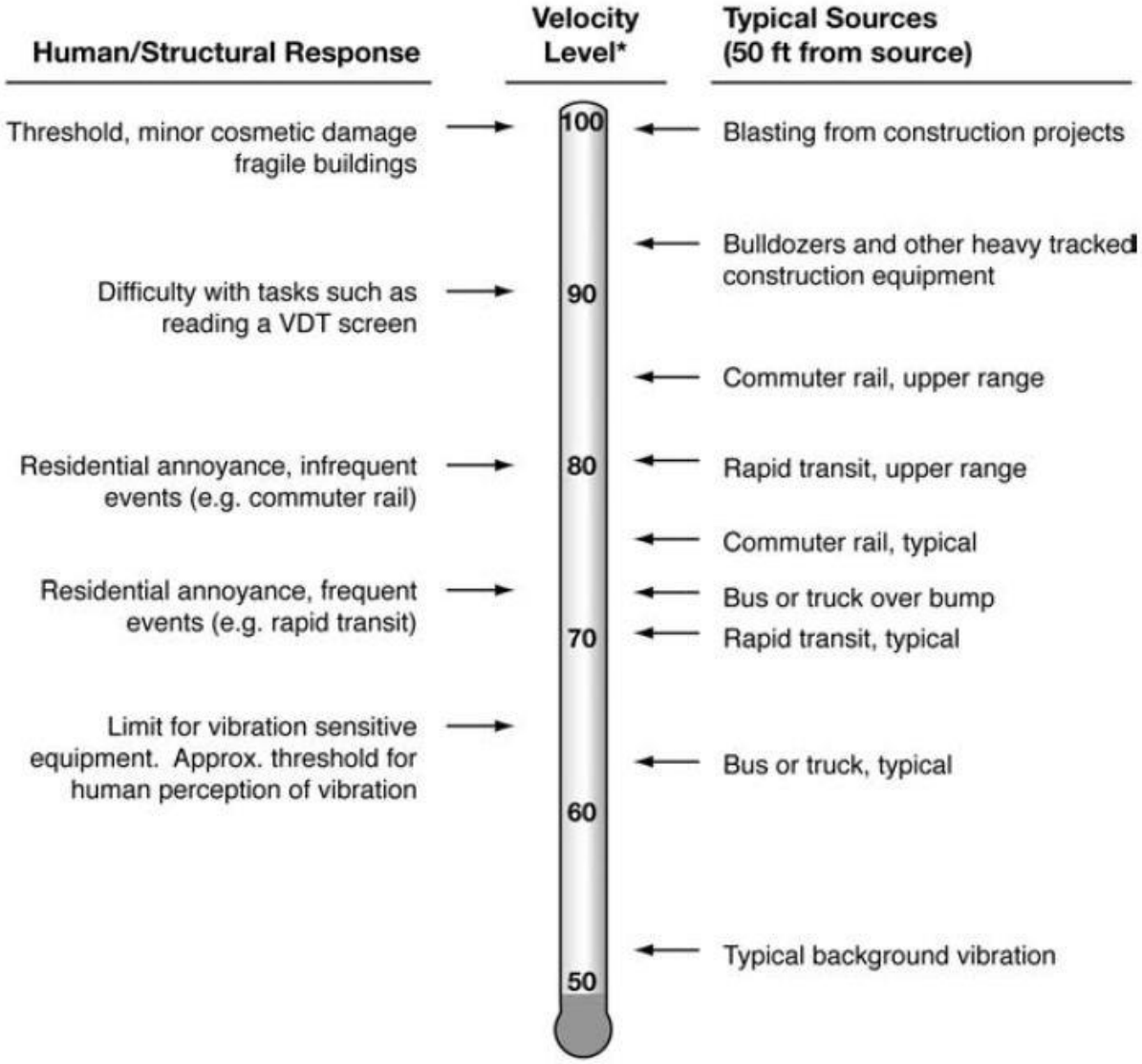
2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*, 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.

Additionally, in contrast to airborne noise, ground-borne vibration outdoors is not a common environmental problem and annoyance from ground-borne vibration is almost exclusively an indoor phenomenon (8). Therefore, the effects of vibrations should only be evaluated at a structure and the effects of the building structure on the vibration should be considered. Wood-frame buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. In contrast, large masonry buildings with spread footings have a low response to ground vibration (8). In general, the heavier a building is, the lower the response will be to the incident vibration energy. However, all structurers reduce vibration levels due to the coupling of the building to the soil. 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 (8). 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 (8). However, the RMS amplitude and PPV are related mathematically, and the RMS amplitude of equipment is typically calculated from the PPV reference level. The RMS amplitude is approximately 70% of the PPV (9). Thus, either can be used in the description of vibration impacts.

While not universally accepted, vibration decibel notation (VdB) is another vibration notation developed and used by the FTA in their guidance manual to describe vibration levels and provide a background of common vibration levels and set vibration limits. (8) Decibel notation (VdB) serves to reduce the range of numbers used to describe vibration levels and is used in this report to describe vibration levels. As stated in the FTA guidance manual, the background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-C illustrates common vibration sources and the human and structural response to ground-borne vibration..

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



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

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

3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (10) OPR identifies suggested land use noise compatibility levels as part of its General Plan Guidelines. These suggested guidelines provide planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels. The guidelines identify normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable noise levels for various land uses. The land use compatibility guidelines are intended to be an advisory resource when considering changes in land use and policies, such as zoning modifications. In addition, the State through the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 CITY OF PALMDALE GENERAL PLAN NOISE ELEMENT

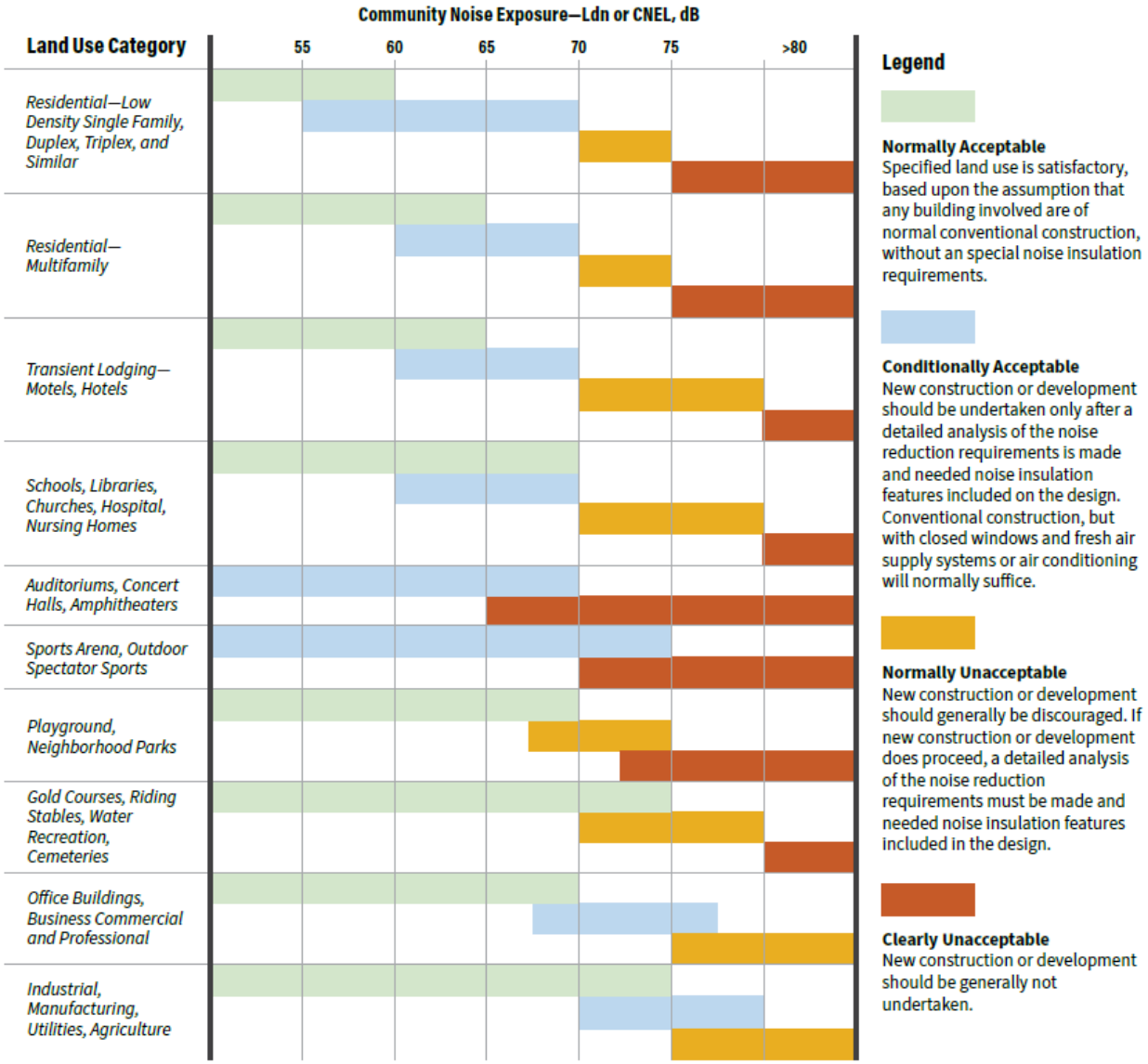
The City of Palmdale General Plan Noise Element outlines the goals and policies related to the noise environment in the City and its sphere of influence. (11) The purpose of the Noise Element is to reduce and limit the exposure of the public to excessive noise levels. The Noise Element sets the goals and policy direction for implementation. To limit the exposure of City residents to excessive noise, the Noise Element contains the following goals:

Goal N-1:	Minimize resident exposure to excessive noise.
Goal N-2:	Maintain acceptable noise environments throughout the City.
Goal N-3:	Promote noise compatible land uses within the 65 dBA CNEL contour and the Frequent Overflight Area of Air Force Plant 42.
Goal N-4:	Minimize adverse noise impacts associated with transportation

The City of Palmdale General Plan Noise Element includes the *California Land Use and Noise Compatibility Guide* that outlines the noise levels allowable for new developments impacted by

transportation noise sources. The City's compatibility criteria, found on Figure 16.1, identify the criteria for industrial land uses such as the Project, as shown on Exhibit 3-A. When the unmitigated exterior noise levels approach 75 dBA CNEL industrial land use is considered *normally acceptable*. With exterior noise levels ranging from 70 to 80 dBA CNEL, industrial land uses are considered *conditionally acceptable*, and with exterior noise levels greater than 75 dBA CNEL, they are considered *normally unacceptable*. For *normally unacceptable* land use, *new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and required noise insulation features shall be included in the design.*

EXHIBIT 3-A: LAND USE NOISE COMPATIBILITY CRITERIA



City of Palmdale General Plan Noise Element Figure 16.1

3.3 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Antelope Valley Commerce Center Project, stationary-source (operational) noise such as the expected loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, truck movements and drive-through speakerphone are typically evaluated against standards established under a jurisdiction's municipal code. Section 9.18.010 of the City of Palmdale Municipal Code (PMC) included in Appendix 3.1 makes it unlawful for any person to willfully make or continue, or cause or permit to be made or continued, any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

Additionally, Pursuant to PMC Section 8.28.30, except as otherwise provided in Section 8.28, no person shall perform any construction or repair work on any Sunday, or any other day after 8:00 p.m. or before 6:30 a.m., in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. , the PMC does not identify specific exterior noise level standards for non-residential zones. (12) Therefore, the County of Los Angeles exterior noise level standards are used in this noise study to assess the potential impacts at adjacent sensitive receiver locations.

The Los Angeles County Code (LACC), Chapter 12.08 Noise Control, Section 12.08.390[A] establishes the noise level standards for stationary noise sources. Since the Project's industrial land use could potentially impact noise-sensitive uses in the Project study area, this noise study relies on the more conservative residential noise level standards to describe potential operational noise impacts. For residential properties, the exterior noise level must not exceed 50 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). As such, Section 12.08.390[B] indicates that if the existing ambient noise level already exceeds any of the exterior noise level limit categories, then the standard must be adjusted to reflect the ambient conditions. Chapter 12.08 Noise Control from the Los Angeles County Code of Ordinances is included in Appendix 3.2.

3.4 CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the City of Palmdale has established limits to the hours of operation. PMC Section 8.28.030 addresses construction-related noise by prohibiting earth excavating and similar activities between 8:00 p.m. and 6:30 a.m. and on Sundays and holidays in any residential zone or within 500 feet of any residence, hotel, motel, or recreational vehicle park. However, neither the City of Palmdale General Plan Noise Element or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a *substantial temporary or permanent increase in ambient noise levels*. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* is used for analysis of daytime construction impacts, as discussed below.

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} and a nighttime exterior construction noise level of 70 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use (8 p. 179).

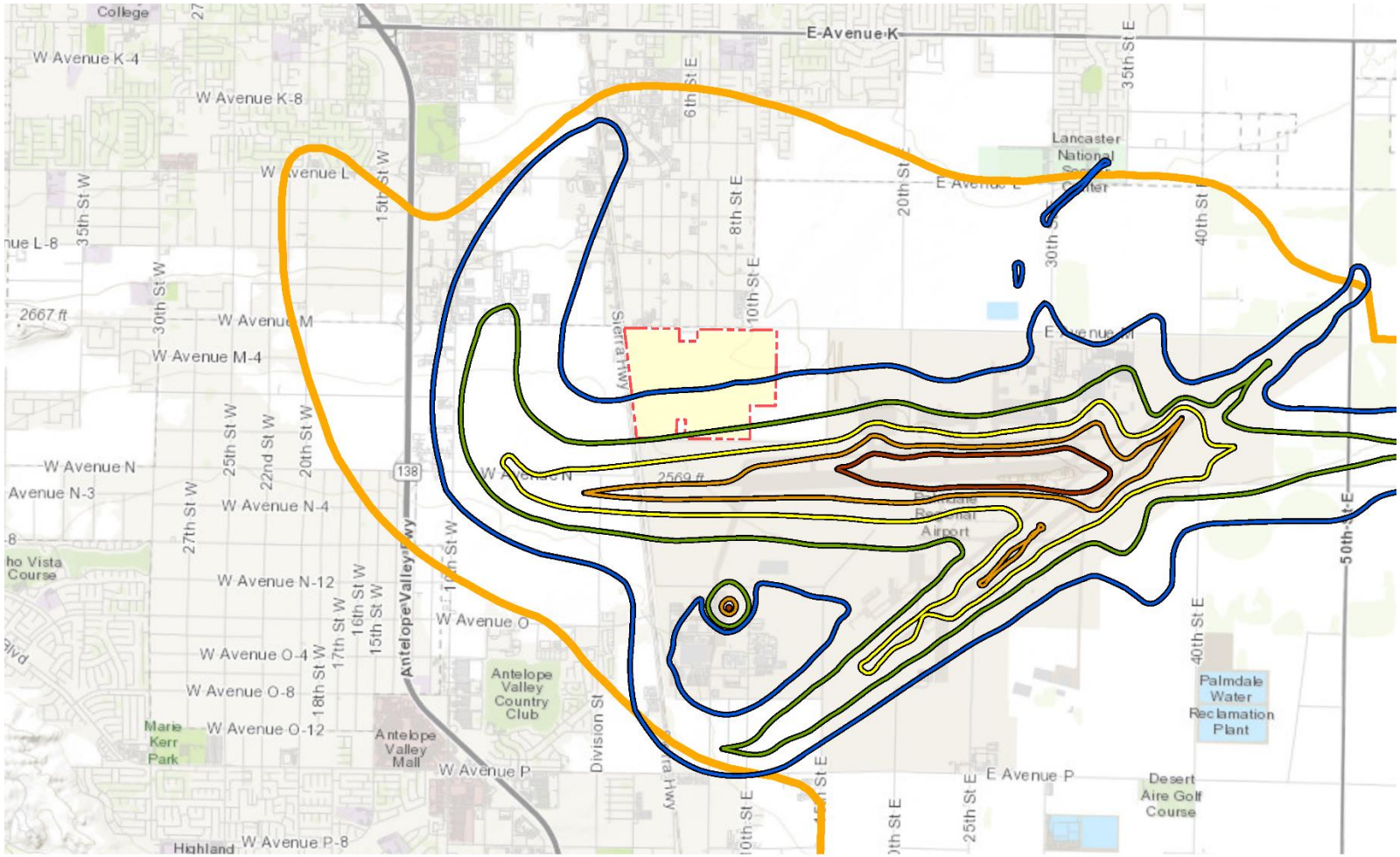
3.5 CONSTRUCTION VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. (8) To analyze vibration impacts originating from the operation and construction of the Antelope Valley Commerce Center, vibration-generating activities are appropriately evaluated against standards established under a City's Municipal Code, if such standards exist. However, the City of Palmdale and the County of Los Angeles do not identify specific vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (9 p. 38) Table 19, vibration damage are used in this noise study to assess potential temporary construction-related impacts at nearby building locations. A maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec) is used to describe the potential vibration damage to the nearby building structures.

3.6 ON-SITE AIRCRAFT NOISE (PALMDALE AIRPORT/USAF PLANT 42)

The Project site is located approximately 0.25 miles (1,305 feet) north of Runway 7 at the Palmdale Airport/USAF Plant 42. This places the Project site within the Airport Influence Area (AIA) according to the Los Angeles County Airport Land Use Commission (ALUC) as shown on Exhibit 3-B. (13) The ALUC is a county-level agency required by the State to develop a plan for promoting compatibility between local airports and surrounding land uses. The ALUC is responsible for designating an AIA for every airport within its jurisdiction. An AIA is an airport planning area boundary that consists of all areas in which current or future airport-related noise, over flight, safety, and/or airspace protection factors may significantly affect land uses or necessitate restrictions on those areas. While the ALUC identifies the AIA planning area boundary, the noise level contours can be found on Figure 3-3 of the United States Air Force Plant 42 California Air Installation Compatible Use Zone (AICUZ) Study. (14) The AICUZ noise contours boundaries shown on Exhibit 3-B are used to describe the Project airport noise level impacts.

EXHIBIT 3-B: PALMDALE AIRPORT/USAF PLANT 42 NOISE CONTOURS



LEGEND:

- Project Site Boundary
- Airport Influence Area

Airport Noise Contours

- 60-65 dBA CNEL
- 65-70 dBA CNEL
- 70-75 dBA CNEL
- 75-80 dBA CNEL
- 80+ dBA CNEL

Source: Figure 3-3 US Air Force Plant 42 California Air Installation Compatible Use Zone (AICUZ) Study.

As shown on Exhibit 3-B, the commercial land use within the northern portion of the Project site is located well outside the 60-65 dBA CNEL noise level contour boundary. The southern half of the Project site consisting of industrial land uses is located within the 65-70 dBA CNEL aircraft noise level contour boundaries with a small portion of the southeastern portion Project site is located within 70-75 dBA dBA CNEL noise level contour boundary. Therefore, according to the City of Palmdale General Plan Noise Element Noise Land Use Compatibility Criteria (see Exhibit 3-A), the Project land uses is considered *normally acceptable.*

3.7 ON-SITE RAILROAD VIBRATION (UPRR)

The Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* identifies vibration criteria for specific land use types. While the industrial use of the Project does not represent a sensitive use, the interior Project commercial and office areas are analyzed in this noise study to determine if vibration levels due to railroad activity could affect people working within the Project site. Table 6-6 of the FTA *Transit Noise and Vibration Impact Assessment Manual* identifies an office use vibration level threshold of 84 VdB, and as such, the 84 VdB threshold is used in this study to assess potential impacts to the Project site from adjacent railroad activities. (8)

4 SIGNIFICANCE CRITERIA

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

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

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

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

4.1 NOISE LEVEL INCREASES (THRESHOLD A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes *that there is no single noise increase that renders a noise impact significant.* (15) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment. In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will typically be judged.

4.1.1 NOISE-SENSITIVE RECEIVERS

The Federal Interagency Committee on Noise (FICON) (16) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (L_{eq}).

As previously stated, the approach used in this noise study recognizes *that there is no single noise increase that renders a noise impact significant*, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (15) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. Per the FICON, in areas where the without project noise levels

range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance at noise sensitive receiver locations are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (17 p. 2_48).

4.1.2 NON-NOISE-SENSITIVE RECEIVERS

The City of Palmdale General Plan Noise Element, Figure 16.1, *Land Use Noise Compatibility Criteria* was used to establish the satisfactory noise levels of significance for the non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise level for non-noise-sensitive general industrial land uses is 75 dBA CNEL. Noise levels greater than 75 dBA CNEL are considered *conditionally acceptable* per the *Land Use Noise Compatibility Criteria.* (11)

To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive general industrial land uses, a *barely perceptible* 3 dBA criteria is used. When the without Project noise levels are greater than the *normally acceptable* 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. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the City of Palmdale General Plan Noise Element, Figure 16.1, *Land Use Noise Compatibility Criteria normally acceptable* 75 dBA CNEL exterior noise level criteria for non-noise sensitive general industrial land uses.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.5, for the vibration impacts originating from the construction of Antelope Valley Commerce Center, vibration-generating activities are appropriately evaluated using the Caltrans vibration damage thresholds to assess potential temporary construction-related impacts at the nearest building locations. The nearest buildings can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

CEQA Noise Threshold C applies when there are nearby public and private airports and/or air strips and focuses on land use compatibility of the Project to nearby airports and airstrips. The closest airport which would require additional noise analysis under CEQA guideline C is the Palmdale Airport/USAF Plant 42 located approximately 0.25 miles north of Runway 7. As previously indicated in Section 3.6, the airport noise impacts are considered *less than significant,* and no further noise analysis is required under CEQA Noise Threshold C.

4.4 SIGNIFICANCE CRITERIA SUMMARY

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

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Land Use	Condition(s)	Significance Criteria	
			Daytime	Nighttime
Off-Site Traffic	Noise-Sensitive[1]	if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase	
		if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase	
		if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase	
	Non-Noise Sensitive[2]	if ambient is > 75 dBA CNEL	≥ 3 dBA CNEL Project increase	
Operational	Residential	Exterior Noise Level Limit[3]	50 dBA L_{eq}	45 dBA L_{eq}
	Noise-Sensitive[1]	if ambient is < 60 dBA L_{eq}	≥ 5 dBA L_{eq} Project increase	
		if ambient is 60 - 65 dBA L_{eq}	≥ 3 dBA L_{eq} Project increase	
		if ambient is > 65 dBA L_{eq}	≥ 1.5 dBA L_{eq} Project increase	
Construction	Noise-Sensitive	Noise Level Threshold[4]	80 dBA L_{eq}	70 dBA L_{eq}
		Vibration Level Threshold[5]	0.3 PPV in/sec	n/a
Rail	Noise-Sensitive	Noise Compatibility Threshold[2]	75 dBA CNEL	
		Vibration Level Threshold[2]	84 Vdb	

[1] FICON, 1992.
[2] The City of Palmdale General Plan Noise Element Figure 16.1 (Exhibit 3-A)
[3] Los Angeles County Code, Chapter 12.08 Noise Control, Section 12.08.390[A] (Appendix 3.2)
[4] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[5] Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m. "n/a" = construction activities are not planned during the nighttime hours; "PPV" = peak particle velocity.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at six locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Thursday, October 27, 2022. Appendix 5.1 includes study area photos.

5.1 MEASUREMENT PROCEDURE AND CRITERIA

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

5.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest 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 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.

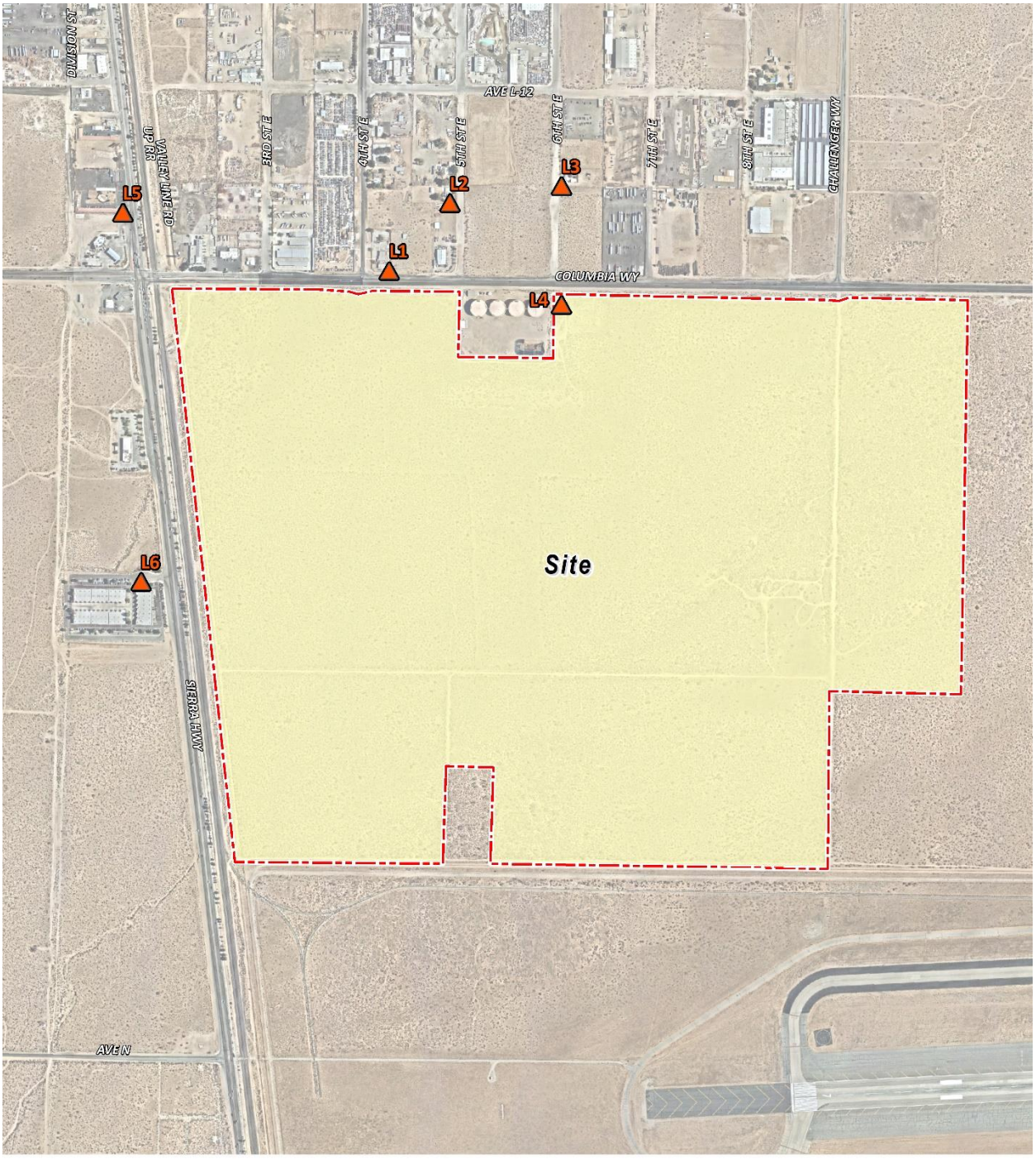
TABLE 5-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

Location[1]	Description	Energy Average Noise Level (dBA L_{eq})[2]	
		Daytime	Nighttime
L1	Located north of the project site near vacant commercial retail site at 42020 4th St E.	68.4	65.8
L2	Located north of the project site near single-family residence at 42057 5th St E.	56.9	56.5
L3	Located north of the project site near single-family residence at 42104 6th St E.	51.8	51.8
L4	Located north of the project site near silo at 461 E Columbia Way.	71.8	70.1
L5	Located northwest of the project site near the gas station at 42011 Sierra Hwy.	69.2	67.3
L6	Located west of the project site near commercial retail land use within the Sierra Highway Plaza at 190 Sierra Ct	66.4	63.6

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

Table 5-1 provides the (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.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



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6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with City of Palmdale *Land Use Compatibility Criteria* (see Exhibit 3-A), all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (19) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (20) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (21)

6.1.1 OFF-SITE TRAFFIC NOISE PREDICTION MODEL TRAFFIC INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 19 off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the City of Palmdale General Plans and Circulation Element, and the vehicle speeds. The ADT volumes used in this study area presented on Table 6-2 are based on *Antelope Valley Commerce Center Traffic Analysis*, prepared by Urban Crossroads, Inc. for the following traffic scenarios. (22)

- Existing (E) 2022 Without Project Conditions
- Existing (E) 2022 With Project Conditions
- Existing Plus Cumulative (EC) 2025 Without Project Conditions
- Existing Plus Cumulative (EC) 2025 With Project Conditions
- Existing Plus Cumulative (EC) 2032 Without Project Conditions
- Existing Plus Cumulative (EC) 2032 With Project Conditions

The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. In addition, the off-site traffic noise analysis is based on a PM peak hour to average daily traffic (peak-to-daily) relationship of 6.63%. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent land use, without and with project ADT traffic volumes from the Project traffic study.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Receiving Land Use[1]	Classification[2]	Distance from Centerline to Receiving Land Use (Feet)[3]	Vehicle Speed (mph)
1	10th St. W	n/o Avenue M	Non-Sensitive	Regional	68'	55
2	10th St. W	s/o Avenue M	Non-Sensitive	Regional	68'	55
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	Regional	68'	55
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	Regional	68'	55
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	Regional	68'	55
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	Regional	68'	55
7	Challenger Wy.	n/o Avenue L	Sensitive	Crosstown	52'	55
8	Challenger Wy.	s/o Avenue L	Sensitive	Crosstown	52'	55
9	20th St.	n/o Avenue M	Sensitive	Crosstown	52'	55
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	Regional	68'	50
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	Regional	68'	50
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	Regional	68'	55
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	Regional	68'	55
14	Avenue M	e/o 4th St.	Non-Sensitive	Regional	68'	55
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	Regional	68'	60
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	Regional	68'	60
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	Crosstown	52'	50
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	Crosstown	52'	50
19	Avenue N	e/o 10th St. W	Non-Sensitive	Crosstown	52'	55

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to adjacent residential land uses.
[2] City of Palmdale Circulation Element Circulation Plan.
[3] Distance to receiving land use is based upon the right-of-way distances.

6.1.2 OFF-SITE TRAFFIC NOISE PREDICTION MODEL VEHICLE MIX

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

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes[1]					
			Existing (2022)		EC (2025)		EC (2032)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	10th St. W	n/o Avenue M	25,005	25,483	25,959	26,102	26,595	27,073
2	10th St. W	s/o Avenue M	20,948	21,426	33,158	33,301	41,298	41,776
3	Sierra Hwy.	n/o Avenue L	23,859	25,790	31,234	31,793	36,151	38,082
4	Sierra Hwy.	s/o Avenue L	28,142	30,460	35,718	36,348	40,769	43,087
5	Sierra Hwy.	s/o Avenue M	31,279	36,120	38,490	40,048	43,297	48,138
6	Sierra Hwy.	s/o Avenue N	39,732	41,390	47,046	47,533	51,922	53,580
7	Challenger Wy.	n/o Avenue L	17,253	18,254	17,361	17,647	17,433	18,434
8	Challenger Wy.	s/o Avenue L	9,501	10,935	9,636	9,993	9,725	11,159
9	20th St.	n/o Avenue M	6,199	6,722	6,199	6,341	6,199	6,722
10	Avenue M	w/o SR-14 SB Ramps	18,626	19,149	19,259	19,402	19,682	20,205
11	Avenue M	e/o SR-14 NB Ramps	31,234	46,057	40,650	45,327	46,928	61,751
12	Avenue M	w/o Sierra Hwy.	23,829	39,607	26,882	31,844	28,917	44,695
13	Avenue M	e/o Sierra Hwy.	29,575	52,444	30,332	37,482	30,837	53,706
14	Avenue M	e/o 4th St.	30,721	42,614	31,424	35,349	31,893	43,786
15	Avenue M	e/o Challenger Wy.	26,272	27,523	26,841	27,198	27,220	28,471
16	Avenue M	e/o Site 2 Rd.	23,587	24,315	24,156	24,370	24,535	25,263
17	Avenue N	w/o SR-14 SB Ramps	22,322	22,436	22,322	22,322	22,322	22,436
18	Avenue N	w/o SR-14 NB Ramps	19,348	22,531	22,697	23,767	24,930	28,113
19	Avenue N	e/o 10th St. W	8,451	11,634	9,360	10,431	9,967	13,150

[1] Antelope Valley Commerce Center Traffic Analysis, Urban Crossroads, Inc.

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	75.23%	10.74%	14.03%	100.00%
Medium Trucks	81.88%	6.79%	11.32%	100.00%
Heavy Trucks	85.29%	1.96%	12.75%	100.00%

[1] Based on the May 18, 2022, directional vehicle classification count collected on Sierra Highway south of Avenue M (Antelope Valley Commerce Center Traffic Analysis, Urban Crossroads, Inc.)
"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[1]			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	97.39%	1.93%	0.69%	100.00%

[1] Based on the May 18, 2022, directional vehicle classification count collected on Sierra Highway south of Avenue M (Antelope Valley Commerce Center Traffic Analysis, Urban Crossroads, Inc.)

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

TABLE 6-5: EXISTING (2022) WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	10th St. W	n/o Avenue M	97.44%	1.89%	0.67%	100.00%
2	10th St. W	s/o Avenue M	97.45%	1.89%	0.67%	100.00%
3	Sierra Hwy.	n/o Avenue L	95.56%	2.11%	2.33%	100.00%
4	Sierra Hwy.	s/o Avenue L	95.88%	2.05%	2.07%	100.00%
5	Sierra Hwy.	s/o Avenue M	96.30%	1.90%	1.80%	100.00%
6	Sierra Hwy.	s/o Avenue N	96.23%	2.05%	1.71%	100.00%
7	Challenger Wy.	n/o Avenue L	97.53%	1.82%	0.65%	100.00%
8	Challenger Wy.	s/o Avenue L	97.73%	1.68%	0.60%	100.00%
9	20th St.	n/o Avenue M	97.59%	1.78%	0.63%	100.00%
10	Avenue M	w/o SR-14 SB Ramps	97.46%	1.88%	0.67%	100.00%
11	Avenue M	e/o SR-14 NB Ramps	92.95%	2.15%	4.90%	100.00%
12	Avenue M	w/o Sierra Hwy.	92.29%	2.14%	5.57%	100.00%
13	Avenue M	e/o Sierra Hwy.	91.91%	2.15%	5.95%	100.00%
14	Avenue M	e/o 4th St.	98.12%	1.39%	0.49%	100.00%

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
15	Avenue M	e/o Challenger Wy.	97.51%	1.84%	0.65%	100.00%
16	Avenue M	e/o Site 2 Rd.	97.47%	1.87%	0.66%	100.00%
17	Avenue N	w/o SR-14 SB Ramps	97.40%	1.92%	0.68%	100.00%
18	Avenue N	w/o SR-14 NB Ramps	97.76%	1.66%	0.59%	100.00%
19	Avenue N	e/o 10th St. W	98.10%	1.40%	0.50%	100.00%

[1] Antelope Valley Commerce Center Traffic Analysis, Urban Crossroads, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-6: EXISTING PLUS CUMULATIVE (EC) 2025 WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	10th St. W	n/o Avenue M	97.40%	1.92%	0.68%	100.00%
2	10th St. W	s/o Avenue M	97.40%	1.92%	0.68%	100.00%
3	Sierra Hwy.	n/o Avenue L	97.02%	1.96%	1.02%	100.00%
4	Sierra Hwy.	s/o Avenue L	97.07%	1.95%	0.97%	100.00%
5	Sierra Hwy.	s/o Avenue M	97.16%	1.91%	0.93%	100.00%
6	Sierra Hwy.	s/o Avenue N	97.14%	1.95%	0.91%	100.00%
7	Challenger Wy.	n/o Avenue L	97.43%	1.90%	0.67%	100.00%
8	Challenger Wy.	s/o Avenue L	97.48%	1.86%	0.66%	100.00%
9	20th St.	n/o Avenue M	97.45%	1.88%	0.67%	100.00%
10	Avenue M	w/o SR-14 SB Ramps	97.41%	1.91%	0.68%	100.00%
11	Avenue M	e/o SR-14 NB Ramps	96.31%	1.94%	1.74%	100.00%
12	Avenue M	w/o Sierra Hwy.	95.88%	1.93%	2.18%	100.00%
13	Avenue M	e/o Sierra Hwy.	95.56%	1.93%	2.50%	100.00%
14	Avenue M	e/o 4th St.	97.68%	1.71%	0.61%	100.00%
15	Avenue M	e/o Challenger Wy.	97.42%	1.90%	0.68%	100.00%
16	Avenue M	e/o Site 2 Rd.	97.41%	1.91%	0.68%	100.00%
17	Avenue N	w/o SR-14 SB Ramps	97.39%	1.93%	0.69%	100.00%
18	Avenue N	w/o SR-14 NB Ramps	97.50%	1.84%	0.65%	100.00%
19	Avenue N	e/o 10th St. W	97.66%	1.73%	0.61%	100.00%

[1] Antelope Valley Commerce Center Traffic Analysis, Urban Crossroads, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-7: EXISTING PLUS CUMULATIVE (EC) 2032 WITH PROJECT VEHICLE MIX

ID	Roadway	Segment	With Project[1]			
			Autos	Medium Trucks	Heavy Trucks	Total[2]
1	10th St. W	n/o Avenue M	97.43%	1.89%	0.67%	100.00%
2	10th St. W	s/o Avenue M	97.42%	1.91%	0.68%	100.00%
3	Sierra Hwy.	n/o Avenue L	96.15%	2.05%	1.80%	100.00%
4	Sierra Hwy.	s/o Avenue L	96.32%	2.02%	1.66%	100.00%
5	Sierra Hwy.	s/o Avenue M	96.57%	1.91%	1.52%	100.00%
6	Sierra Hwy.	s/o Avenue N	96.50%	2.02%	1.48%	100.00%
7	Challenger Wy.	n/o Avenue L	97.53%	1.82%	0.65%	100.00%
8	Challenger Wy.	s/o Avenue L	97.72%	1.68%	0.60%	100.00%
9	20th St.	n/o Avenue M	97.59%	1.78%	0.63%	100.00%
10	Avenue M	w/o SR-14 SB Ramps	97.45%	1.88%	0.67%	100.00%
11	Avenue M	e/o SR-14 NB Ramps	94.08%	2.09%	3.83%	100.00%
12	Avenue M	w/o Sierra Hwy.	92.87%	2.12%	5.01%	100.00%
13	Avenue M	e/o Sierra Hwy.	92.03%	2.14%	5.82%	100.00%
14	Avenue M	e/o 4th St.	98.10%	1.40%	0.50%	100.00%
15	Avenue M	e/o Challenger Wy.	97.50%	1.84%	0.65%	100.00%
16	Avenue M	e/o Site 2 Rd.	97.46%	1.87%	0.67%	100.00%
17	Avenue N	w/o SR-14 SB Ramps	97.40%	1.92%	0.68%	100.00%
18	Avenue N	w/o SR-14 NB Ramps	97.68%	1.71%	0.61%	100.00%
19	Avenue N	e/o 10th St. W	98.02%	1.46%	0.52%	100.00%

[1] Antelope Valley Commerce Center Traffic Analysis, Urban Crossroads, Inc.
[2] Total of vehicle mix percentage values rounded to the nearest one-hundredth.

6.2 CADNAA NOISE PREDICTION MODEL

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

Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the

source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

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

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7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on the *Antelope Valley Commerce Center Traffic Analysis* prepared by Urban Crossroads, Inc. (22) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 TRAFFIC NOISE CONTOURS

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

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Nearest Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	10th St. W	n/o Avenue M	Non-Sensitive	72.9	106	228	491
2	10th St. W	s/o Avenue M	Non-Sensitive	72.1	94	203	436
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	72.7	103	221	476
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	73.4	114	247	531
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	73.9	123	265	570
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	74.9	144	310	669
7	Challenger Wy.	n/o Avenue L	Sensitive	73.2	86	184	397
8	Challenger Wy.	s/o Avenue L	Sensitive	70.7	57	124	267
9	20th St.	n/o Avenue M	Sensitive	68.8	RW	93	201
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.5	74	159	343
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	72.8	104	225	484
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	72.7	102	221	475
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	73.6	118	255	549
14	Avenue M	e/o 4th St.	Non-Sensitive	73.8	121	261	563
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.1	127	274	589
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.6	118	255	549

ID	Road	Segment	Receiving Land Use[1]	CNEL at Nearest Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	86	186	401
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	72.7	78	169	364
19	Avenue N	e/o 10th St. W	Non-Sensitive	70.1	RW	115	247

[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 nearest receiving land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Nearest Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	10th St. W	n/o Avenue M	Non-Sensitive	72.9	107	230	496
2	10th St. W	s/o Avenue M	Non-Sensitive	72.2	95	205	441
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	74.2	129	279	601
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	74.7	141	303	654
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	75.3	153	329	709
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	75.8	167	359	774
7	Challenger Wy.	n/o Avenue L	Sensitive	73.4	88	190	409
8	Challenger Wy.	s/o Avenue L	Sensitive	71.1	62	133	286
9	20th St.	n/o Avenue M	Sensitive	69.1	RW	97	209
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.6	75	161	347
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	77.2	205	442	953
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	77.7	221	476	1025
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	79.1	273	588	1267
14	Avenue M	e/o 4th St.	Non-Sensitive	74.9	144	310	667
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.2	130	280	604
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.7	120	259	557
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	87	186	402
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	73.2	85	182	393
19	Avenue N	e/o 10th St. W	Non-Sensitive	71.2	RW	135	291

[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 nearest receiving land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-3: EC (2025) WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Nearest Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	10th St. W	n/o Avenue M	Non-Sensitive	73.0	108	234	503
2	10th St. W	s/o Avenue M	Non-Sensitive	74.1	128	275	593
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	73.8	123	264	569
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	74.4	134	289	623
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	74.8	141	304	655
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	75.6	161	347	748
7	Challenger Wy.	n/o Avenue L	Sensitive	73.3	86	185	399
8	Challenger Wy.	s/o Avenue L	Sensitive	70.7	58	125	269
9	20th St.	n/o Avenue M	Sensitive	68.8	RW	93	201
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.7	76	163	351
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	73.9	124	268	577
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	73.2	111	239	515
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	73.7	120	259	558
14	Avenue M	e/o 4th St.	Non-Sensitive	73.9	123	265	572
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.2	129	278	598
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.7	120	259	557
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	86	186	401
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	73.4	87	188	405
19	Avenue N	e/o 10th St. W	Non-Sensitive	70.6	RW	123	264

[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 nearest receiving land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-4: EC (2025) WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Nearest Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	10th St. W	n/o Avenue M	Non-Sensitive	73.1	109	234	505
2	10th St. W	s/o Avenue M	Non-Sensitive	74.1	128	276	594
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	74.2	129	279	600
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	74.7	141	303	653
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	75.1	149	321	692
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	75.8	167	360	775
7	Challenger Wy.	n/o Avenue L	Sensitive	73.3	87	187	402
8	Challenger Wy.	s/o Avenue L	Sensitive	70.8	59	127	274
9	20th St.	n/o Avenue M	Sensitive	68.9	RW	94	203
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.7	76	163	352
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	75.3	152	328	707
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	75.0	146	315	678
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	75.9	168	361	779
14	Avenue M	e/o 4th St.	Non-Sensitive	74.3	131	282	607
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.2	130	279	602
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.7	121	260	560
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	86	186	401
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	73.5	89	192	414
19	Avenue N	e/o 10th St. W	Non-Sensitive	70.9	RW	130	279

[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 nearest receiving land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-5: EC (2032) WITHOUT PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Nearest Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	10th St. W	n/o Avenue M	Non-Sensitive	73.1	110	237	512
2	10th St. W	s/o Avenue M	Non-Sensitive	75.1	148	318	686
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	74.5	135	291	628
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	75.0	147	316	680
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	75.3	153	329	708
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	76.1	172	371	799
7	Challenger Wy.	n/o Avenue L	Sensitive	73.3	86	186	400
8	Challenger Wy.	s/o Avenue L	Sensitive	70.8	58	126	271
9	20th St.	n/o Avenue M	Sensitive	68.8	RW	93	201
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.8	77	165	356
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	74.6	137	295	635
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	73.5	117	251	541
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	73.8	122	262	565
14	Avenue M	e/o 4th St.	Non-Sensitive	73.9	124	268	577
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.2	130	280	604
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.8	121	261	563
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	86	186	401
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	73.8	93	200	431
19	Avenue N	e/o 10th St. W	Non-Sensitive	70.9	RW	128	276

[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 nearest receiving land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-6: EC (2032) WITH PROJECT CONTOURS

ID	Road	Segment	Receiving Land Use[1]	CNEL at Nearest Receiving Land Use (dBA)[2]	Distance to Contour from Centerline (Feet)		
					70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	10th St. W	n/o Avenue M	Non-Sensitive	73.2	111	240	516
2	10th St. W	s/o Avenue M	Non-Sensitive	75.1	149	320	690
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	75.5	159	343	739
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	76.0	170	367	790
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	76.3	180	388	835
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	76.8	193	416	897
7	Challenger Wy.	n/o Avenue L	Sensitive	73.5	89	191	411
8	Challenger Wy.	s/o Avenue L	Sensitive	71.2	63	135	291
9	20th St.	n/o Avenue M	Sensitive	69.1	RW	97	209
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.9	78	167	360
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	77.9	229	494	1065
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	78.0	231	497	1071
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	79.1	275	593	1277
14	Avenue M	e/o 4th St.	Non-Sensitive	75.0	146	316	680
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.4	133	287	618
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.9	123	265	572
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	87	186	402
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	74.2	99	212	458
19	Avenue N	e/o 10th St. W	Non-Sensitive	71.8	68	147	318

[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 nearest receiving land use.
"RW" = Location of the respective noise contour falls within the right-of-way of the road.

7.2 EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report for informational purposes and to fully analyze all the existing traffic scenarios identified in the Traffic Analysis prepared by Urban Crossroads, Inc. However, the analysis of existing off-site traffic noise levels plus traffic noise generated by the proposed Project scenario will not actually occur since the Project would not be fully constructed and operational until Year 2032 conditions. Table 7-1 shows the Existing without Project buildout conditions CNEL noise levels. The Existing without Project exterior noise levels range from 68.8 to 74.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions ranging from 69.1 to 79.1 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level increases range from 0.0 to 5.5 dBA CNEL on the study area roadway segments. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Project-related traffic.

TABLE 7-7: EXISTING WITH PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Incremental Noise Level Increase Threshold[3]	
				No Project	With Project	Project Increment	Limit	Exceeded?
1	10th St. W	n/o Avenue M	Non-Sensitive	72.9	72.9	0.0	n/a	No
2	10th St. W	s/o Avenue M	Non-Sensitive	72.1	72.2	0.1	n/a	No
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	72.7	74.2	1.5	n/a	No
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	73.4	74.7	1.3	n/a	No
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	73.9	75.3	1.4	n/a	No
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	74.9	75.8	0.9	n/a	No
7	Challenger Wy.	n/o Avenue L	Sensitive	73.2	73.4	0.2	1.5	No
8	Challenger Wy.	s/o Avenue L	Sensitive	70.7	71.1	0.4	1.5	No
9	20th St.	n/o Avenue M	Sensitive	68.8	69.1	0.3	1.5	No
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.5	70.6	0.1	n/a	No
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	72.8	77.2	4.4	n/a	No
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	72.7	77.7	5.0	n/a	No
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	73.6	79.1	5.5	n/a	No
14	Avenue M	e/o 4th St.	Non-Sensitive	73.8	74.9	1.1	n/a	No
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.1	74.2	0.1	n/a	No
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.6	73.7	0.1	n/a	No
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	73.3	0.0	1.5	No
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	72.7	73.2	0.5	n/a	No
19	Avenue N	e/o 10th St. W	Non-Sensitive	70.1	71.2	1.1	n/a	No

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?
"n/a" Per the City of Palmdale General Plan Noise Element Figure 16-1, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 75 dBA CNEL land use compatibility criteria.

7.3 EC (2025) TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Existing plus Cumulative (EC) (2025) without Project conditions CNEL noise levels. The EC (2025) without Project exterior noise levels range from 68.8 to 75.6 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the EC (2025) with Project conditions will range from 68.9 to 75.9 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases range from 0.0 to 2.2 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Project-related traffic under EC (2025) traffic conditions.

TABLE 7-8: EC (2025) WITH PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Incremental Noise Level Increase Threshold[3]	
				No Project	With Project	Project Increment	Limit	Exceeded?
1	10th St. W	n/o Avenue M	Non-Sensitive	73.0	73.1	0.1	n/a	No
2	10th St. W	s/o Avenue M	Non-Sensitive	74.1	74.1	0.0	n/a	No
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	73.8	74.2	0.4	n/a	No
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	74.4	74.7	0.3	n/a	No
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	74.8	75.1	0.3	n/a	No
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	75.6	75.8	0.2	3.0	No
7	Challenger Wy.	n/o Avenue L	Sensitive	73.3	73.3	0.0	1.5	No
8	Challenger Wy.	s/o Avenue L	Sensitive	70.7	70.8	0.1	1.5	No
9	20th St.	n/o Avenue M	Sensitive	68.8	68.9	0.1	1.5	No
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.7	70.7	0.0	n/a	No
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	73.9	75.3	1.4	n/a	No
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	73.2	75.0	1.8	n/a	No
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	73.7	75.9	2.2	n/a	No
14	Avenue M	e/o 4th St.	Non-Sensitive	73.9	74.3	0.4	n/a	No
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.2	74.2	0.0	n/a	No
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.7	73.7	0.0	n/a	No
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	73.3	0.0	1.5	No
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	73.4	73.5	0.1	n/a	No
19	Avenue N	e/o 10th St. W	Non-Sensitive	70.6	70.9	0.3	n/a	No

[1] Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.
[2] The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.
[3] Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?
"n/a" Per the City of Palmdale General Plan Noise Element Figure 16-1, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 75 dBA CNEL land use compatibility criteria.

7.4 EC (2032) TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the Existing plus Cumulative (EC) (2032) without Project conditions CNEL noise levels. The EC (2032) without Project exterior noise levels range from 68.8 to 76.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows that the EC (2032) with Project conditions will range from 69.1 to 79.1 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases range from 0.0 to 5.3 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Project-related traffic under EC (2032) traffic conditions.

TABLE 7-9: EC (2032) WITH PROJECT TRAFFIC NOISE INCREASES

ID	Road	Segment	Receiving Land Use[1]	CNEL at Receiving Land Use (dBA)[2]			Incremental Noise Level Increase Threshold[3]	
				No Project	With Project	Project Increment	Limit	Exceeded?
1	10th St. W	n/o Avenue M	Non-Sensitive	73.1	73.2	0.1	n/a	No
2	10th St. W	s/o Avenue M	Non-Sensitive	75.1	75.1	0.0	3.0	No
3	Sierra Hwy.	n/o Avenue L	Non-Sensitive	74.5	75.5	1.0	n/a	No
4	Sierra Hwy.	s/o Avenue L	Non-Sensitive	75.0	76.0	1.0	n/a	No
5	Sierra Hwy.	s/o Avenue M	Non-Sensitive	75.3	76.3	1.0	3.0	No
6	Sierra Hwy.	s/o Avenue N	Non-Sensitive	76.1	76.8	0.7	3.0	No
7	Challenger Wy.	n/o Avenue L	Sensitive	73.3	73.5	0.2	1.5	No
8	Challenger Wy.	s/o Avenue L	Sensitive	70.8	71.2	0.4	1.5	No
9	20th St.	n/o Avenue M	Sensitive	68.8	69.1	0.3	1.5	No
10	Avenue M	w/o SR-14 SB Ramps	Non-Sensitive	70.8	70.9	0.1	n/a	No
11	Avenue M	e/o SR-14 NB Ramps	Non-Sensitive	74.6	77.9	3.3	n/a	No
12	Avenue M	w/o Sierra Hwy.	Non-Sensitive	73.5	78.0	4.5	n/a	No
13	Avenue M	e/o Sierra Hwy.	Non-Sensitive	73.8	79.1	5.3	n/a	No
14	Avenue M	e/o 4th St.	Non-Sensitive	73.9	75.0	1.1	n/a	No
15	Avenue M	e/o Challenger Wy.	Non-Sensitive	74.2	74.4	0.2	n/a	No
16	Avenue M	e/o Site 2 Rd.	Non-Sensitive	73.8	73.9	0.1	n/a	No
17	Avenue N	w/o SR-14 SB Ramps	Sensitive	73.3	73.3	0.0	1.5	No
18	Avenue N	w/o SR-14 NB Ramps	Non-Sensitive	73.8	74.2	0.4	n/a	No
19	Avenue N	e/o 10th St. W	Non-Sensitive	70.9	71.8	0.9	n/a	No

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

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

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

"n/a" Per the City of Palmdale General Plan Noise Element Figure 16-1, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the ambient non-noise sensitive noise level is greater than the normally acceptable 75 dBA CNEL land use compatibility criteria.

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8 RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, 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, five receiver locations in the vicinity of the Project site were identified. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Due to the additional attenuation from distance and the shielding of intervening structures, other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

R1: Location R1 represents the vacant commercial retail site at 42020 4th St E., approximately 127 feet north the Project site and north of Columbia Way/Avenue M. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R1 is placed at the 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 42057 5th St E., approximately 607 feet north of the Project site. R2 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.

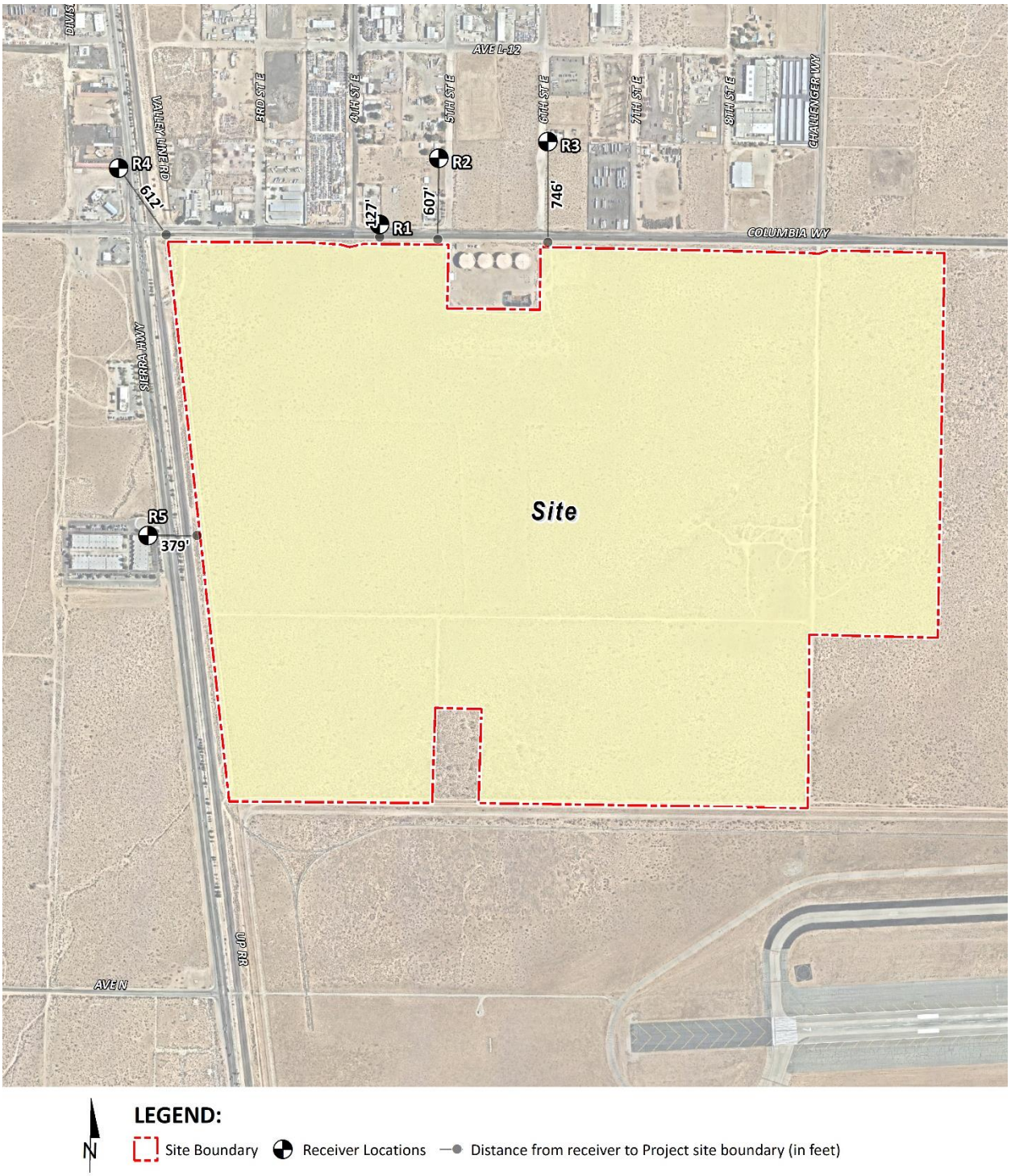
R3: Location R3 represents the existing noise sensitive residence at 42104 6th St E., approximately 746 feet north of the Project site. R3 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.

R4: Location R4 represents the gas station at 42011 Sierra Highway, approximately 612 feet northwest of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R4 is placed at the building façade. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.

R5: Location R5 represents the commercial retail land use within the Sierra Highway Plaza at 190 Sierra Court, approximately 379 feet west of the Project site. Since there are no

private outdoor living areas (backyards) facing the Project site, receiver R5 is placed at the building façade. A 24-hour noise measurement was taken near this location, L6, to describe the existing ambient noise environment.

EXHIBIT 8-A: RECEIVER LOCATIONS



9 OPERATIONAL NOISE ANALYSIS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Antelope Valley Commerce Center Project. Exhibit 9-A of the Noise Study includes over 158 individual noise sources to fully describe the potential reasonable worst-case noise environment.

9.1 OPERATIONAL NOISE SOURCES

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

9.2 REFERENCE NOISE LEVELS

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

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (18)

EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

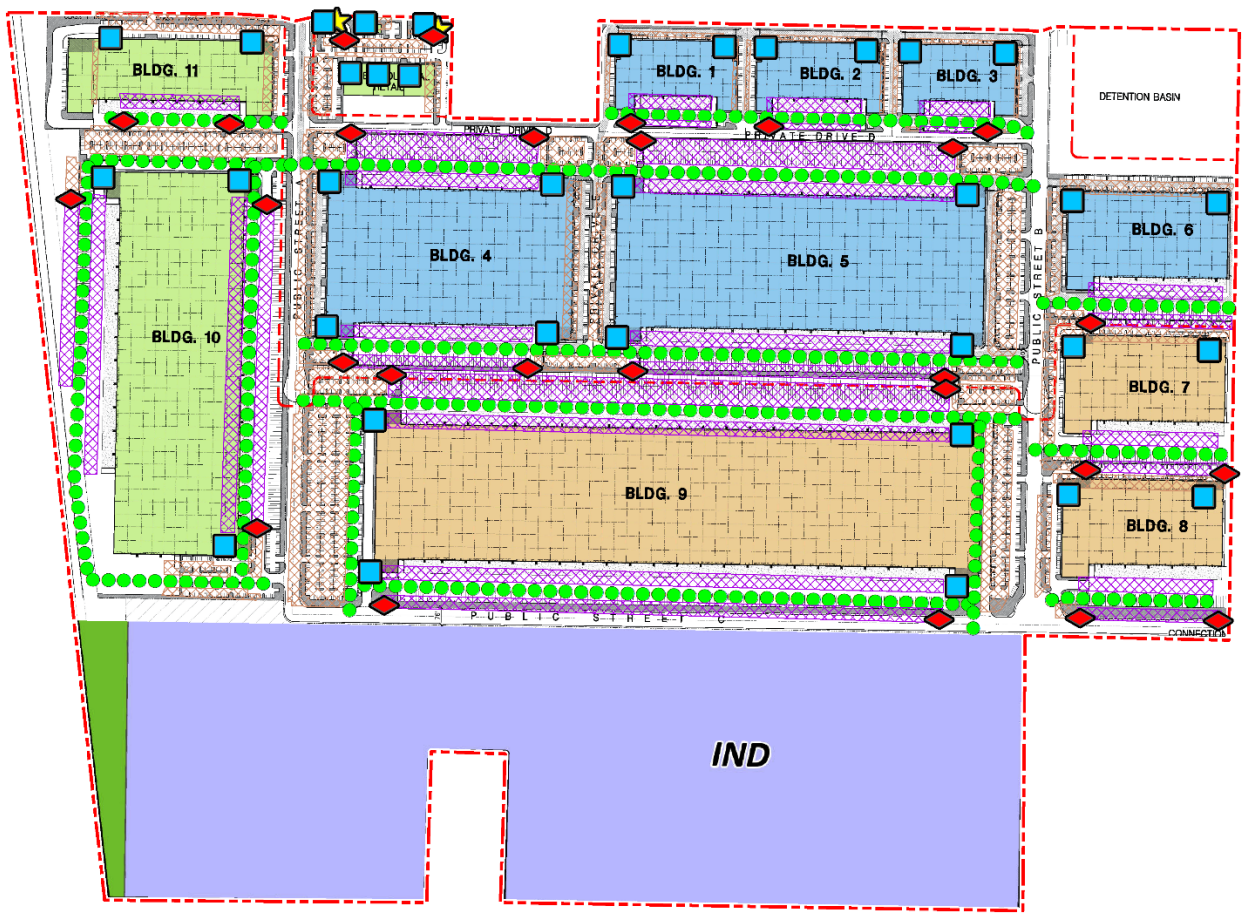


TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Noise Source[1]	Noise Source Height (Feet)	Min./ Hour[2]		Reference Noise Level (dBA L_{eq}) @ 50 Feet	Sound Power Level (dBA)[3]
		Day	Night		
Loading Dock Activity	8'	60	60	65.7	111.5
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	60	30	57.3	89.0
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1
Truck Movements	8'	60	60	59.8	93.2
Drive-Through Speakerphone Activity	3'	60	60	50.0	84.0

[1] As measured by Urban Crossroads, Inc.
[2] Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site. "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.
[3] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

9.2.2 LOADING DOCK ACTIVITY

The reference loading dock activities are intended to describe the typical outdoor operational noise activities associated with the Project. This includes truck idling, reefer activity (refrigerator truck/cold storage), deliveries, backup alarms, trailer docking including a combination of tractor trailer semi-trucks, two-axle delivery trucks, and background operation activities. Since the noise levels generated by cold storage loading dock activity can be slightly higher due to the use of refrigerated trucks or reefers this analysis conservatively assumes that all loading dock activity is associated with cold storage facilities. 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 ROOF-TOP AIR CONDITIONING UNITS

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

Fahrenheit (°F) with average daytime temperatures of 82°F. For this noise analysis, the air conditioning units are expected to be located on the roof of the Project buildings.

9.2.4 TRASH ENCLOSURE ACTIVITY

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

9.2.5 PARKING LOT VEHICLE MOVEMENTS

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

9.2.6 TRUCK MOVEMENTS

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

9.2.7 DRIVE-THROUGH SPEAKERPHONE ACTIVITY

To describe the potential noise level impacts associated with the planned drive-thru speakerphones, this analysis relies on the drive-through intercom system manufactured by HME. This type of system is commonly used by the quick service restaurant (QSR) industry for drive-thru communications. The HME SPP2 speaker post intercom system produces a maximum noise level of 50.0 dBA L_{eq} at 50 feet. The system may also be equipped with an automatic volume control that can automatically reduce the sound levels as the ambient noise level decreases. The reference speakerphone noise level describes continuous drive-through operations and does not include any periods of inactivity.

9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, roof-top air conditioning units, trash enclosure activity, parking lot vehicle movements, truck movements and drive-through speakerphone 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 receiver locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 48.8 to 55.1 dBA L_{eq}.

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)				
	R1	R2	R3	R4	R5
Loading Dock Activity	50.5	50.5	49.9	48.7	55.1
Roof-Top Air Conditioning Units	44.6	36.2	33.5	29.8	28.3
Trash Enclosure Activity	39.7	33.2	28.8	27.1	25.9
Parking Lot Vehicle Movements	35.5	28.9	27.6	23.8	18.3
Truck Movements	29.3	29.0	26.9	26.8	33.1
Drive-Through Speakerphone Activity	37.5	26.5	21.7	14.9	6.4
Total (All Noise Sources)	**51.9**	**50.8**	**50.1**	**48.8**	**55.1**

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

Table 9-3 shows the Project operational noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. The nighttime hourly noise levels at the off-site receiver locations are expected to range from 48.8 to 55.1 dBA L_{eq}. The differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1 and Appendix 9.1.

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source[1]	Operational Noise Levels by Receiver Location (dBA Leq)				
	R1	R2	R3	R4	R5
Loading Dock Activity	50.5	50.5	49.9	48.7	55.1
Roof-Top Air Conditioning Units	42.2	33.8	31.1	27.4	25.9
Trash Enclosure Activity	35.7	29.2	24.8	23.1	21.9
Parking Lot Vehicle Movements	35.5	28.9	27.6	23.8	18.3
Truck Movements	29.3	29.0	26.9	26.8	33.1
Drive-Through Speakerphone Activity	37.5	26.5	21.7	14.9	6.4
Total (All Noise Sources)	**51.4**	**50.7**	**50.0**	**48.8**	**55.1**

[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 the exterior noise level thresholds adjusted to reflect the ambient noise levels at the nearest receiver locations. Table 9-4 shows the operational noise levels associated with the Project will not exceed the daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-receiver locations.

TABLE 9-4: 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	51.9	51.4	68.4	65.8	No	No
R2	50.8	50.7	56.9	56.5	No	No
R3	50.1	50.0	51.8	51.8	No	No
R4	48.8	48.8	69.2	67.3	No	No
R5	55.1	55.1	66.4	63.6	No	No

[1] See Exhibit 8-A for the receiver locations.
[2] Proposed Project operational noise level calculations are included in Appendix 9-1.
[3] Exterior noise level standards adjusted to reflect the ambient noise levels (see Table 5-1) per the County of Los Angeles County Code, Chapter 12.08 Noise Control, Section 12.08.390[B] (Appendix 3.2)
[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 that may be potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (2) Instead, they must be logarithmically added using the following base equation:

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

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 describes the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-5 and 9-6, respectively. As indicated on Table 9-5, the Project will generate a daytime operational noise level increase ranging from 0.0 to 2.2 dBA L_{eq} at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increase ranging from 0.1 to 2.2 dBA L_{eq} at the nearest receiver locations. Project-related operational

noise level increases would not exceed the operational noise level increase significance criteria presented in Table 4-1. Therefore, Project related operational noise level increases at the receiver locations will be *less than significant.*

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
R1	51.9	L1	68.4	68.5	0.1	1.5	No
R2	50.8	L2	56.9	57.9	1.0	5.0	No
R3	50.1	L3	51.8	54.0	2.2	5.0	No
R4	48.8	L5	69.2	69.2	0.0	1.5	No
R5	55.1	L6	66.4	66.7	0.3	1.5	No

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

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location[1]	Total Project Operational Noise Level[2]	Measurement Location[3]	Reference Ambient Noise Levels[4]	Combined Project and Ambient[5]	Project Increase[6]	Increase Criteria[7]	Increase Criteria Exceeded?
R1	51.4	L1	65.8	66.0	0.2	1.5	No
R2	50.7	L2	56.5	57.5	1.0	5.0	No
R3	50.0	L3	51.8	54.0	2.2	5.0	No
R4	48.8	L5	67.3	67.4	0.1	1.5	No
R5	55.1	L6	63.6	64.2	0.6	5.0	No

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

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10 CONSTRUCTION ANALYSIS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the on-site construction noise source activity including the off-site roadway and utility improvements in relation to the nearest receiver locations previously described in Section 8. PMC Section 8.28.030 addresses construction-related noise by prohibiting earth excavating and similar activities between 8:00 p.m. and 6:30 a.m. and on Sundays in any residential zone or within 500 feet of any residence, hotel, motel, or recreational vehicle park. The nearest residence at 42057 5th St E. represented by receiver location R2 is located 607 feet north of the Project site.

In addition, since neither the City of Palmdale General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes, a numerical construction threshold based on Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use with a nighttime exterior construction noise level of 70 dBA L_{eq}. (8 p. 179)

10.1 CONSTRUCTION NOISE LEVELS

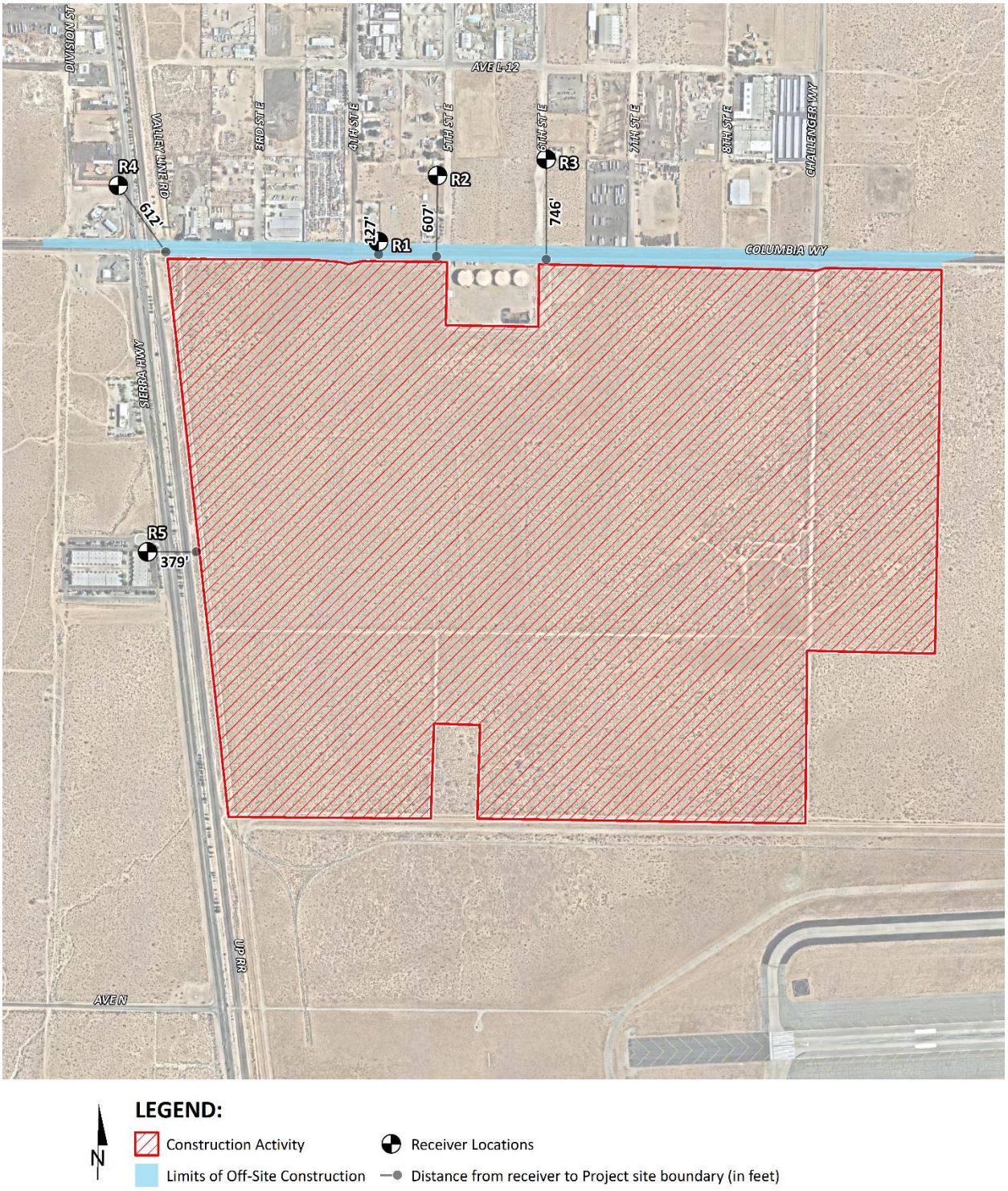
The FTA *Transit Noise and Vibration Impact Assessment Manual* recognizes that construction projects are accomplished in several different stages and outlines the procedures for assessing noise impacts during construction. Each stage has a specific equipment mix, depending on the work to be completed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

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

10.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (23) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE AND RECEIVER LOCATIONS



10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby receiver locations were completed. Consistent with FTA guidance for detailed construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming all equipment operates at the same time. To account for the dynamic nature of construction activities, the CadnaA construction noise analysis evaluates the equipment as multiple moving point sources within the construction area (Project site boundary). Construction impacts are based on the highest noise level calculated at each receiver location. As shown on Table 10-2, the construction noise levels are expected to range from 43.4 to 57.8 dBA L_{eq} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

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

[1] FHWA Road Construction Noise Model.
[2] Represents the combined noise level for all equipment assuming they operate at the same time consistent with FTA Transit Noise and Vibration Impact Assessment guidance.
[3] Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings.

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
R1	57.8	57.1	54.4	51.7	50.0	57.8
R2	54.0	53.3	50.6	47.9	46.2	54.0
R3	53.5	52.8	50.1	47.4	45.7	53.5
R4	51.2	50.5	47.8	45.1	43.4	51.2
R5	54.9	54.2	51.5	48.8	47.1	54.9

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at the nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will not exceed the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-3. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	57.8	80	No
R2	54.0	80	No
R3	53.5	80	No
R4	51.2	80	No
R5	54.9	80	No

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 10-2.
[3] Construction noise level thresholds as shown on Table 4-1.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?
[5] Project operational noise levels provided for informational purposes

10.5 OFF-SITE ROADWAY AND UTILITY IMPROVEMENTS CONSTRUCTION NOISE ANALYSIS

To support the Project development, there will be grading, trenching, and paving for off-site improvements associated with roadway construction and utility installation for the Project. It is expected that these off-site improvements will be constructed within the existing public right-of-way (ROW) on Columbia Way/Avenue M. The loudest phase of construction associated with off-site roadway and utility improvements would likely be grading/excavation activities, which would generate similar noise levels compared to the grading/excavation phase of the proposed project's on-site construction activities previously outlined on Table 10-1.

It is expected that the off-site construction activities would not take place at any one location for more than four days due to the nature of the linear construction activity. Construction noise from this off-site work would, therefore, be relatively short-term and the noise levels would be reduced as construction work moves linearly along the selected alignment and farther from sensitive uses. However, to minimize the potential construction noise impacts from the Project construction and the off-site roadway and utility Improvements, the Project shall implement the following construction noise abatement measures.

1. All construction activities shall comply with PMC Section 8.28.030 limiting construction activities to the hours of 6:00 a.m. and 6:00 p.m., prohibiting earth excavating and similar activities between 8:00 p.m. and 6:30 a.m. and on Sundays in any residential zone or within 500 feet of any residence, hotel, motel, or recreational vehicle park.
2. Construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturers' standards).
3. All stationary construction equipment shall be placed in such a manner so that emitted noise is directed away from any sensitive receivers.
4. Construction equipment staging areas shall be located at the greatest feasible distance between the staging area and the nearest sensitive receivers.
5. The construction contractor shall limit equipment and material deliveries to the same hours specified for construction equipment.
6. Electrically powered air compressors and similar power tools shall be used, when feasible, in place of diesel equipment.
7. No music or electronically reinforced speech from construction workers shall be allowed.

With the implementation of these construction noise abatement measures, the potential impacts from the Project and construction and off-site roadway and utility Improvements would be reduced. Therefore, the off-site roadway and utility improvement construction activities will be *less than significant.*

10.6 NIGHTTIME CONCRETE POUR NOISE ANALYSIS

It is our understanding that nighttime concrete pouring activities may occur as a part of Project building construction activities. Nighttime concrete pouring activities are often used to support reduced concrete mixer truck transit times and lower air temperatures than during the daytime hours and are generally limited to the actual building pad and loading dock areas. Since the nighttime concrete pours will take place outside the hours permitted by PMC Section 8.28.030, the Project Applicant will be required to obtain authorization for nighttime work from the City of Palmdale. Any nighttime construction noise activities shall satisfy the noise limits outlined in Table 4-1.

10.6.1 NIGHTTIME CONCRETE POUR REFERENCE NOISE LEVEL MEASUREMENTS

To estimate the noise levels due to nighttime concrete pouring activities, sample reference noise level measurements were taken during a nighttime concrete pouring at a construction site. Urban Crossroads, Inc. collected short-term nighttime concrete pour reference noise level measurements during the noise-sensitive nighttime hours between 1:00 a.m. to 2:00 a.m. at 27334 San Bernardino Avenue in the City of Redlands. The reference noise levels describe the expected concrete pour noise sources that may include concrete mixer truck movements and pouring activities, concrete paving equipment, rear mounted concrete mixer truck backup alarms, engine idling, air brakes, generators, and workers communicating/whistling. To describe the nighttime concrete pour noise levels associated with the construction of the Antelope Valley Commerce Center, this analysis relies on reference sound pressure level of 67.7 dBA L_{eq} at 50 feet representing a sound power level of 100.3 dBA L_w. While the Project noise levels will depend on the actual duration of activities and specific equipment fleet in use at the time of construction, the reference sound power level of 100.3 dBA L_w is used to describe the expected Project nighttime concrete pour noise activities.

10.6.2 NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

As shown on Table 10-4, the noise levels associated with the nighttime concrete pour activities are estimated to range from 35.9 to 42.5 dBA L_{eq} and will satisfy the City of Palmdale stationary-source nighttime exterior hourly average L_{eq} residential noise level threshold at all the receiver locations. Based on the results of this analysis, all the nearest noise receiver locations will experience *less than significant* impacts due to the Project related nighttime concrete pour activities. Appendix 10.2 includes the CadnaA nighttime concrete pour noise model inputs.

TABLE 10-4: NIGHTTIME CONCRETE POUR NOISE LEVEL COMPLIANCE

Receiver Location[1]	Concrete Pour Construction Noise Levels (dBA L_{eq})		
	Exterior Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	42.5	70	No
R2	38.7	70	No
R3	38.2	70	No
R4	35.9	70	No
R5	39.6	70	No

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Nighttime Concrete Pour noise model inputs are included in Appendix 10.2.
[3] Exterior nighttime noise level standards as shown on Table 4-1.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.7 CONSTRUCTION VIBRATION ANALYSIS

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

TABLE 10-5: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-6 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 127 to 746 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.001 to 0.018 PPV in/sec. Based on maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec), the typical Project construction vibration levels will fall below the building damage thresholds at all the receiver

locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

TABLE 10-6: PROJECT CONSTRUCTION VIBRATION LEVELS

Location[1]	Distance to Const. Activity (Feet)[2]	Typical Construction Vibration Levels PPV (in/sec)[3]						Thresholds PPV (in/sec)[4]	Thresholds Exceeded?[5]
		Small bulldozer	Jack-hammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level		
R1	127'	0.000	0.003	0.007	0.008	0.018	0.018	0.3	No
R2	607'	0.000	0.000	0.001	0.001	0.002	0.002	0.3	No
R3	746'	0.000	0.000	0.000	0.001	0.001	0.001	0.3	No
R4	612'	0.000	0.000	0.001	0.001	0.002	0.002	0.3	No
R5	379'	0.000	0.001	0.001	0.002	0.004	0.004	0.3	No

[1] Construction noise source and receiver locations are shown on Exhibit 10-A.
[2] Distance from receiver to limits of construction activity.
[3] Based on the Vibration Source Levels of Construction Equipment (Table 10-5).
[4] Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19, p. 38.
[5] Does the peak vibration exceed the acceptable vibration thresholds?
"PPV" = Peak Particle Velocity

11 RAIL NOISE AND VIBRATION ANALYSIS

A noise and vibration analysis has been completed to determine the noise exposure and vibration levels impacting the Project that would result from the nearby off-site UPRR railroad tracks located approximately 270 feet west of Project industrial Building 11.

11.1 ON-SITE NOISE PREDICTION MODEL FROM OFF-SITE RAIL ACTIVITIES

The estimated railroad noise impacts from the UPRR mainline tracks located off-site and west of the Project site are calculated using the Federal Transit Administration (FTA) General Transit Noise Assessment Model. The FTA Model calculates the predicted noise level based on the type of train, distance to receiver, number of trains per hour, speed, number of cars per train, and type of railroad tracks. The train volumes and speeds for the Metrolink and freight operations were obtained from the current Metrolink schedule, and the existing data provided in the U.S. Department of Transportation Crossing Inventory Form (750642H) for Columbia Way/Avenue M, as shown on Table 11-1 and included in Appendix 11.1. (24)

TABLE 11-1: ON-SITE RAILROAD PARAMETERS

Railroad Activities	Modeled Train/ Engine Type	Speed (mph)	Daily Train Volumes/Events	
			Daytime	Nighttime
Metrolink[1]	Diesel	79	7	4
Freight[2]	Diesel	60	17	5

[1] Metrolink Antelope Valley Line Schedule.
[2] Based on the U.S. Department of Transportation Crossing Inventory Form 750642H at Columbia Way / Avenue M.

11.2 ON-SITE EXTERIOR NOISE LEVELS FROM OFF-SITE RAIL ACTIVITIES

Using the FTA railroad noise prediction model and the parameters outlined on Table 11-1, the expected exterior noise levels at the nearest industrial Project building façade facing the railroad (Buildings 10) were calculated. The on-site FTA model results indicates that the unmitigated exterior noise level resulting from off-site rail noise activities will approach 55.0 dBA CNEL, as shown on Table 11-2. Based on the City of Palmdale General Plan Noise Element Figure 16.1 land use compatibility criteria, the on-site exterior noise level of 55.0 dBA CNEL from off-site rail noise will not exceed the *normally acceptable* 75 dBA CNEL exterior noise criteria for the industrial uses of the Project, and therefore, represents a *less than significant* impact. The on-site noise analysis calculations from off-site rail activities are provided in Appendix 11.2.

TABLE 11-2: EXTERIOR RAILROAD NOISE LEVELS

Receiver Location	Noise Source	Unmitigated Noise Levels (dBA CNEL)	Threshold (dBA CNEL)[1]	Threshold Exceeded?
Western Façade (Building 10)	Railroad	55.0	70	No

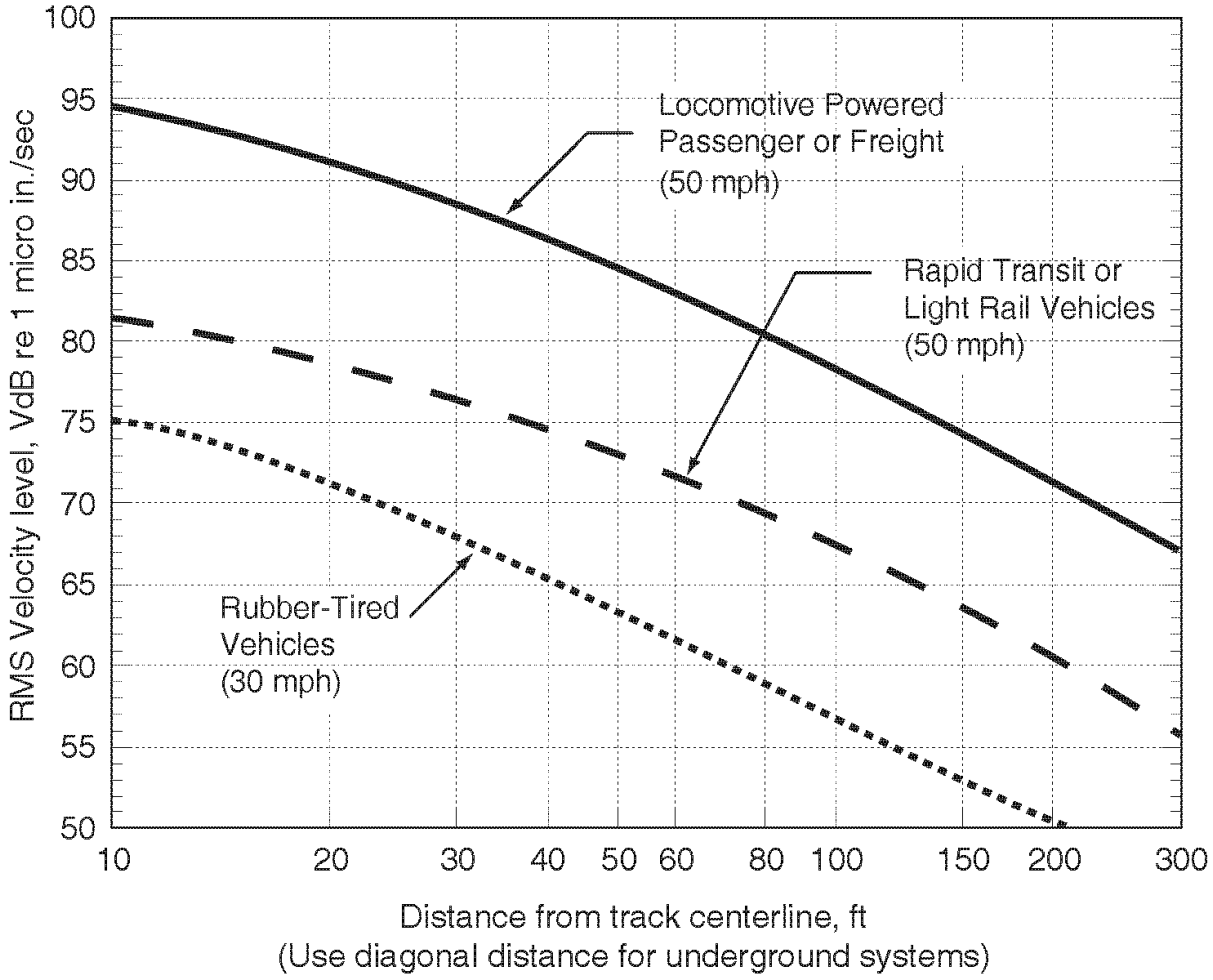
[1] Normally acceptable land use noise compatibility criteria for industrial use such as the Project (Exhibit 3-A).

11.3 VIBRATION ANALYSIS FROM OFF-SITE RAIL ACTIVITIES

This section focuses on the potential ground-borne vibration associated with rail transportation activities. The estimated railroad vibration impacts from Metrolink and freight trains traveling on the railroad tracks offsite and west of the Project site are calculated using the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment* General Vibration Assessment methodology. The FTA General Vibration Assessment calculates the predicted vibration level based on generalized ground surface vibration curves which were developed using actual measurements of representative North American transit systems. Figure 6-4 of the FTA *Transit Noise and Vibration Impact Assessment* shows the generalized ground surface vibration curves for three types of transit sources, as shown on Exhibit 11-A of this report. The generalized reference curves are used to identify the appropriate reference vibration level, before any adjustments, for the Project based on the type of train, speed, and distance to receiver locations. The FTA reference curves are provided in VdB to describe the human response to vibration levels.

Based on the reference curve for a locomotive powered passenger or freight train traveling at 50 mph, as shown on Exhibit 11-A, the reference vibration level at the Project Building 10 is estimated to be 73 VdB at roughly 270 feet. As previously shown on Table 11-1, the passenger trains passing the Project site are expected to travel at a higher speed of up to 79 mph, and therefore, the reference level is adjusted at 270 feet to reflect the change from 50 to 79 mph. In addition, the FTA provides vibration source and propagation adjustments to the reference vibration curve levels based on the characteristics of the trains and rail lines in the study area. Using the speed adjustments provided by the FTA, the vibration levels at the nearest industrial Project building façade facing the railroad (Buildings 10) are estimated at 78 VdB. Therefore, the vibration levels from off-site rail noise are shown to remain below the FTA vibration threshold of 84 VdB for office uses. (8 p. 131)

EXHIBIT 11-A: FTA REFERENCE GROUND SURFACE VIBRATION CURVES



Source: FTA Transit Noise and Vibration Impact Assessment Manual, Figure 6-4.

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12 REFERENCES

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2. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
3. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
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 Noise Barrier Design Handbook.* 2001.
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7. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
8. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual, FTA Report No. 0123.* September 2018.
9. **California Department of Transportation.** *Transportation and Construction Vibration Guidance Manual.* April 2020.
10. **Office of Planning and Research.** *State of California General Plan Guidelines.* 2019.
11. **City of Palmdale.** *General Plan.* October 22, 2022.
12. —. *Municipal Code, Section 9.18.010 - Noise.*
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15. **California Court of Appeal.** *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; - Cal.Rptr.3d, October 2008.
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20. **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.

21. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.

22. **Urban Crossroads.** *Antelope Valley Commerce Center Traffic Analysis.* October 2023.

23. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning.** *FHWA Roadway Construction Noise Model.* January, 2006.

24. **U.S. Department of Transportation.** *Crossing Inventory Form, 750642H.* 3/21/2023.

13 CERTIFICATION

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

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EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 3.1:

CITY OF PALMDALE NOISE CONTROL

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Chapter 8.28

BUILDING CONSTRUCTION HOURS OF OPERATION AND NOISE CONTROL

Sections:

8.28.010 Definitions.

As used in this chapter:

(A) "Person" means an individual, partnership, firm or corporation.

(B) "Section" means a section of this chapter.

(C) Reference to Ordinance or Statute. Whenever any reference is made to this chapter, or any other ordinance, or to any statute, such reference shall apply to all amendments and additions thereto, now or hereafter made. (Ord. 584 § 1, 1986)

8.28.030 Construction noise prohibited in residential zones.

Except as otherwise provided in this chapter, no person shall perform any construction or repair work on any Sunday, or any other day after 8:00 p.m. or before 6:30 a.m., in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. For the purposes of this section, construction and repair work includes work of any kind upon any building or structure, earth excavating, filling, or moving, and delivery, preparation or operation of construction equipment, materials or supplies where any of the foregoing entails the use of an air compressor, jack hammer, power-driven drill, riveting machine, excavator, semi-truck, diesel power truck, tractor, cement truck, or earth moving equipment, hand hammer, or other machine, tool, device or equipment which makes loud noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness sleeping or residing in the area. (Ord. 1335 § 1, 2007; Ord. 584 § 1, 1986)

8.28.040 Exceptions.

The provisions of PMC 8.28.030 do not apply to any person who performs the construction, repair, excavation or earth moving work involved pursuant to the express written permission of the City Engineer to perform such work at times prohibited in PMC 8.28.030. Upon receipt of an application in writing therefor, stating the reasons for the request and the facts upon which such reasons are based, the City Engineer may grant such permission if he finds that:

(A) The work proposed to be done is affected with public interest; or

(B) Hardship, injustice or unreasonable delay would result from the interruption thereof during the hours and days specified in PMC 8.28.030; or

(C) The building or structure involved is devoted or intended to be devoted to a use immediately incident to public defense. (Ord. 584 § 1, 1986)

8.28.050 Appeals.

Any person dissatisfied with the decision of the City made pursuant to the provisions of this chapter may appeal therefrom to the administrative hearing officer appointed pursuant to Chapter 1.20 PMC, within 15 days of the date of the decision, by filing with the City Clerk a written notice of appeal, briefly stating in the notice the grounds

relied upon for appeal. If the appeal is made within the time prescribed, the City Clerk shall cause the matter to be set for hearing before the administrative hearing officer, to be held within 45 days from the date of receipt of the notice of appeal, giving the appellant not less than five days' notice in writing of the time and place of hearing. The findings and determinations of the administrative hearing officer at the hearing shall be final and conclusive, and within three days after the findings and determinations are made, the City Clerk shall give notice thereof to the appellant.

In the event no appeal is taken by the permittee, the decision of the City Engineer shall become final and conclusive on the expiration of the time fixed in this section for appeal. (Ord. 1322 § 3, 2007; Ord. 584 § 1, 1986)

8.28.060 Exemptions – Generally.
The provisions of PMC 8.28.030 do not apply to the construction, repair, or excavation during prohibited hours as may be necessary for the preservation of life or property when such necessity arises during such hours as the offices of the City are closed, or where such necessity requires immediate action prior to the time at which it would be possible to obtain a permit pursuant to PMC 8.28.040, if the person doing such construction, repair or excavation obtains a permit therefor within one day after the office of the City Engineer is first opened subsequent to the making of such construction, repair or excavation. (Ord. 584 § 1, 1986)

8.28.070 Exemptions for public utilities.
The provisions of PMC 8.28.030 do not apply to the construction, repair, or excavation by a public utility which is subject to the jurisdiction of the Public Utilities Commission as may be necessary for the preservation of life or property and where such necessity makes it necessary to construct, repair, or excavate during the prohibited hours. (Ord. 584 § 1, 1986)

8.28.080 Exemptions in nonresidential zones.
Repealed by Ord. 1335. (Ord. 584 § 1, 1986)

8.28.090 Violations – Penalties.
Any person violating any provision of this chapter is guilty of a misdemeanor punishable by a fine of not more than $500.00 or by imprisonment in the County Jail for not more than six months or by both such fine and imprisonment. Every such person is guilty of a separate offense for every day during any portion of which any violation of any of the provisions of this chapter is committed, continued, or permitted by such person and shall be punished as provided by this chapter. (Ord. 584 § 1, 1986)

Chapter 9.18

DISTURBING, EXCESSIVE, LOUD, OR OFFENSIVE NOISE

Sections:

Prior legislation: Ords. 1208 and 1308.

9.18.010 Noise.

(A) It shall be unlawful for any person to willfully make or continue, or cause or permit to be made or continued, any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

(B) The characteristics and conditions, which may be considered in determining whether such noise violates the provisions of this section, shall include, but not be limited to, the following:

(1) The volume of the noise;

(2) The intensity of the noise;

(3) Whether the nature of the noise is usual or unusual;

(4) Whether the origin of the noise is natural or unnatural;

(5) The volume and intensity of the background noise, if any;

(6) The proximity of the noise to sleeping facilities;

(7) The nature and zoning of the area within which the noise emanates;

(8) The density of the inhabitation of the area within which the noise emanates;

(9) The time of the day or night the noise occurs;

(10) The duration of the noise;

(11) Whether the noise is recurrent, intermittent, or constant;

(12) Whether the noise is produced by a commercial or noncommercial activity. (Ord. 1332 § 1, 2007)

9.18.020 Acts constituting disturbing, excessive, loud, offensive noise.

The following activities, among others, are declared to cause disturbing, excessive, loud, or offensive noises in violation of this chapter and causing or permitting such activities is unlawful; provided, however, that inclusion in this section shall not be construed as limiting the type of activities which may be found to cause disturbing, excessive, loud, or offensive noises:

(A) Horns, Signaling Devices, Etc. The unnecessary or unreasonable use or operation of horns, signaling devices, or other similar devices, on automobiles, motorcycles, motor-driven cycles or any other vehicles.

(B) Radios, Television Sets, Phonographs, Loud Speaking Amplifiers, and Similar Devices.

(1) Uses Restricted. The use or operation of any sound production or reproduction device, radio receiving set, loud speakers, and sound amplifier or other similar machine or device for the producing or reproducing of sound in such a manner as to disturb the peace, quiet, or comfort of any reasonable person of normal sensitivity in any area of the City is prohibited. This provision shall not apply to any participant in a licensed parade, to law enforcement or emergency personnel in the performance of their duties, or to any person duly authorized, licensed, or permitted by the City to engage in such conduct in a public park, public facility, or other public place.

(2) Prima Facie Violations of this Subsection. Any of the following shall constitute evidence of a prima facie violation of this subsection; provided, however, that inclusion herein shall not be construed as limiting the activities which may be found to violate this section:

(a) The operation of any such sound production or reproduction device, radio receiving set, musical instrument, drum, phonograph, television set, machine, loud speaker and sound amplifier, or similar machine or device between the hours of 10:00 p.m. and 8:00 a.m. in such a manner as to be plainly audible at a distance of 50 feet from the building, structure, or vehicle in which it is located.

(b) The operation of any sound amplifier which is part of, or connected to, any radio, stereo receiver, compact disc player, digital video disc player, computer, cassette tape player, or other similar device when operated in such a manner as to be plainly audible at a distance of 50 feet and when operated in such a manner as to cause a person to be aware of vibration accompanying the sound at a distance of 50 feet from the source.

(3) Impoundment. Any person who is authorized to enforce any provision of this chapter and who encounters evidence of a prima facie violation of this section is empowered to confiscate and impound as evidence any or all of the components amplifying or transmitting the sound.

(C) Hospitals, Schools, Libraries, Rest Homes, Long-Term Medical or Mental Care Facilities. To make noise adjacent to a hospital, school, library, rest home, or long-term medical or mental care facility, which noise unreasonably interferes with the workings of such institutions or which disturbs or unduly annoys occupants of such institutions.

(D) Jake Brakes. The use of jake brakes, using compression release engine brakes and any method of using engine compression to slow a vehicle is prohibited in the City of Palmdale and unlawful. (Ord. 1458 § 1, 2014; Ord. 1332 § 1, 2007)

9.18.030 Loud parties.

(A) Loud Parties Defined. A “loud party” is a gathering of two or more people on private property which is determined by law enforcement personnel at the scene to be disruptive to the public peace, health, safety, or welfare due to the magnitude of the crowd, noise, disturbances, unruly behavior of those attending the party or gathering, excessive traffic or traffic congestion, illegally parked vehicles blocking other traffic or fire access or destruction of property.

(B) Loud Parties Prohibited. It shall be unlawful for any responsible person to organize, cause, or permit a loud party.

(1) For the purposes of this subsection, “responsible person” means the person who owns the property where the party, gathering or event takes place; the person in charge of the premises; and/or the person who organized the event. If the responsible person is a minor, then the parents or guardians of that minor are also responsible persons whether or not they are present at the party. All responsible persons, as defined herein, are deemed to have caused or permitted the loud party and are responsible for and may be charged with a violation of this chapter; provided, however, a property owner who is not present at the party or gathering may not be charged with a violation of this chapter unless the absentee owner had knowledge that the party or gathering was occurring, was planned to occur or reasonably should have known the party or gathering would occur. This exception does not apply to a parent or guardian of a responsible person who is a minor.

(2) Prima Facie Violations of this Subsection. The following shall constitute evidence of a prima facie violation of this subsection; provided, however, that inclusion herein shall not be construed as limiting the activities which may be found to violate this subsection: A party, event or gathering where:

(a) Noise emanating from or attributable to that party, event or gathering is audible from a distance of 50 feet from the source of that noise; or

(b) Persons present at the party or gathering are acting in a wild, unruly, uncontrollable manner disruptive to neighbors; or

(c) The number of persons present violates the fire code, presenting a fire hazard; or

(d) Vehicles of those attending the party or gathering are illegally parked or parked in a manner to cause traffic congestion or to block traffic or fire access; or

(e) Persons present at the party or gathering have caused or are causing destruction to property of others.

(C) Loud Parties Declared a Public Nuisance. Loud parties as defined in this section are hereby declared to be a public nuisance and may be abated as set forth herein or as otherwise provided by law.

(D) Authority of Law Enforcement Personnel. Law enforcement personnel are authorized to take all actions and to give all directions and orders that may be necessary to abate the nuisance, violation or condition, including the arrest of, or issuance of citations to, the responsible person or persons, and any others who are in violation of this chapter or any other state statute or local ordinance.

(E) Cease and Desist Order. No person shall fail or refuse to obey or fail to comply with orders of law enforcement personnel to discontinue the loud party, to disperse or vacate the location of the loud party, and to turn off radios, television sets, phonographs, loud speaking amplifiers, and similar devices. Refusal to comply with such an order is a separate and additional offense from that of causing or permitting a loud party.

(F) Loud Party Participation Prohibited. All persons attending a party or social gathering declared to be a public nuisance by law enforcement personnel shall immediately disperse upon the order of law enforcement personnel, and all persons not domiciled at the site of such party or social gathering shall immediately leave the premises. No person shall fail or refuse to obey and abide by such an order. (Ord. 1458 § 2, 2014; Ord. 1332 § 1, 2007)

9.18.040 Reimbursement for law enforcement costs.

If after issuance of a written reimbursement notice as required by this section, law enforcement personnel are required to respond to the property to address another violation of this chapter within a 30-day period after issuance of said notice, then the responsible person or persons, as defined in this chapter, shall be jointly and severally liable for all actual costs and expenses incurred by the City during second or subsequent responses.

(A) Written Reimbursement Notice. Law enforcement personnel responding to a loud party shall issue a written reimbursement notice to the responsible person that if within a 30-day period after the initial response law enforcement personnel are again required to respond to the property to address a violation of this chapter, then the responsible person shall be liable to reimburse the City for all costs and expenses incurred by law enforcement personnel during second or subsequent responses for violations of this chapter.

(B) Reimbursement of Costs and Expenses. All responsible persons for a party or gathering, which requires a second or subsequent response, as described herein above are jointly and severally liable for the following costs and expenses incurred by the City:

(1) The actual costs incurred by the City for the services of the law enforcement personnel for each response after the initial response;

(2) Damage to public property incurred in the course of any second or subsequent response by law enforcement personnel; and

(3) Injuries to any law enforcement personnel involved in a second or subsequent response.

(C) Collection. The expense of a reimbursable response hereunder shall be charged against the person liable for the expense under this chapter. The charge constitutes a debt of that person to the City, and is collectible by the City in the same manner as in the case of an obligation under a contract, expressed or implied.

(D) Other Penalties Not Precluded. Nothing contained in this subsection is intended to preclude the filing of any administrative or criminal charges or the imposition of criminal fines or administrative penalties, or the summary, civil or administrative abatement of any public nuisance under state or local law, including other sections of this chapter, against any person or persons who may be subject to the reimbursement provisions of this section. (Ord. 1332 § 1, 2007)

9.18.050 Enforcement and penalties for all provisions of this chapter.

(A) This chapter may be enforced by Peace Officers and by the City of Palmdale employees specified in PMC Title 1.

(B) Violations of this chapter may be punished as set forth in PMC Title 1.

(C) As an additional remedy for violations of this chapter, the operation or maintenance of any device, instrument, vehicle, or machinery in violation of any provision of this chapter, which operation or maintenance causes discomfort or annoyance to reasonable persons of normal sensitiveness, or which endangers the comfort, repose, health, or peace of residents in the area, shall be deemed and is declared to be a public nuisance which may be abated through summary abatement, administrative abatement, or abatement by a restraining order or injunction issued by a court of competent jurisdiction. (Ord. 1332 § 1, 2007)

APPENDIX 3.2:

COUNTY OF LOS ANGELES NOISE CONTROL

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Chapter 12.08 NOISE CONTROL

Parts:

Part 1 GENERAL PROVISIONS

12.08.010 Title for citation.

The ordinance codified in this chapter may be cited as the "noise control ordinance of the county of Los Angeles."

(Ord. 11778 § 2 (Art. 1 § 101), 1978: Ord. 11773 § 2 (Art. 1 § 101), 1978.)

12.08.020 Declaration of policy—Nuisances deemed misdemeanors.

A. In order to control unnecessary, excessive and annoying noise and vibration in the county of Los Angeles, it is declared to be the policy of the county to prohibit such noise and vibration generated from any sources as specified in this chapter. It shall be the policy of the county to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the county where noise levels are above acceptable values.

B. It is determined that certain noise levels and vibration are detrimental to the public health, welfare and safety and contrary to public interest, and therefore the board of supervisors of the county does ordain and declare that creating, maintaining, causing or allowing to be created, caused or maintained any noise or vibration in a manner prohibited by or not in conformity with the provisions of this chapter is a public nuisance and shall be punishable as such.

(Ord. 11778 § 2 (Art. 2 § 201), 1978: Ord. 11773 § 2 (Art. 2 § 201), 1978.)

Part 2 DEFINITIONS

12.08.030 Terminology—Conformity with ANSI standards.

All terminology used in this chapter, not defined in this Part 2, shall be in conformance with applicable publications of the American National Standards Institute (ANSI) or its successor body.

(Ord. 11778 § 2 (Art. 3 § 301), 1978: Ord. 11773 § 2 (Art. 3 § 301), 1978.)

12.08.040 Definitions applicable.

The following words, phrases and terms as used in this chapter shall have the meanings as indicated in this Part 2.

(Ord. 11778 § 2 (Art. 3 § 302 (part)), 1978: Ord. 11773 § 2 (Art. 3 § 302 (part)), 1978.)

12.08.050 Agricultural property.

"Agricultural property" means a parcel of real property which is undeveloped for any use other than agricultural purposes.

(Ord. 11778 § 2 (Art. 3 § 302(a)), 1978: Ord. 11773 § 2 (Art. 3 § 302(a)), 1978.)

12.08.060 Ambient noise histogram.

"Ambient noise histogram" means the composite of all noise from sources near and far, excluding the alleged intrusive noise source. In this context, the ambient noise histogram shall constitute the normal or existing level of environmental noise at a given location.

(Ord. 11778 § 2 (Art. 3 § 302(b)), 1978: Ord. 11773 § 2 (Art. 3 § 302(b)), 1978.)

12.08.070 A-weighted sound level.

"A-weighted sound level" means the sound level in decibels as measured on a soundlevel meter using the A-weighting network. The level so read is designated dB (A) or dBA.

(Ord. 11778 § 2 (Art. 3 § 302(c)), 1978: Ord. 11773 § 2 (Art. 3 § 302(c)), 1978.)

12.08.080 Commercial property.

"Commercial property" means a parcel of real property which is developed and used either in part or in whole for commercial purposes. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable. (See Title 22 of this code.)

(Ord. 11778 § 2 (Art. 3 § 302(d)), 1978: Ord. 11773 § 2 (Art. 3 § 302(d)), 1978.)

12.08.090 Construction.

"Construction" means any site preparation, assembly, erection, substantial repair, alteration, or similar action, for or of public or private rights-of-way, structures, utilities, or similar property.

(Ord. 11778 § 2 (Art. 3 § 302(e)), 1978: Ord. 11773 § 2 (Art. 3 § 302(e)), 1978.)

12.08.100 Cumulative period.

"Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.

(Ord. 11778 § 2 (Art. 3 § 302(f)), 1978: Ord. 11773 § 2 (Art. 3 § 302(f)), 1978.)

12.08.110 Decibel.

"Decibel" means a unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base of 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals.

(Ord. 11778 § 2 (Art. 3 § 302(g)), 1978: Ord. 11773 § 2 (Art. 3 § 302(g)), 1978.)

12.08.120 Dwelling unit.

"Dwelling unit" means a single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation.

(Ord. 11778 § 2 (Art. 3 § 302(h)), 1978: Ord. 11773 § 2 (Art. 3 § 302(h)), 1978.)

12.08.130 Emergency machinery, vehicle or alarm.

"Emergency machinery, vehicle or alarm" means any machinery, vehicle or alarm used, employed, performed or operated in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

(Ord. 11778 § 2 (Art. 3 § 302(i)), 1978: Ord. 11773 (Art. 3 § 302(i)), 1978.)

12.08.140 Emergency work.

"Emergency work" means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency.

(Ord. 11778 § 2 (Art. 3 § 302(j)), 1978: Ord. 11773 (Art. 3 § 302(j)), 1978.)

12.08.150 Fixed noise source.

"Fixed noise source" means a stationary device which creates sounds while fixed or motionless, including but not limited to residential, agricultural, industrial and commercial machinery and equipment, pumps, fans, compressors, air conditioners and refrigeration equipment.

(Ord. 11778 § 2 (Art. 3 § 302(k)), 1978: Ord. 11773 (Art. 3 § 302(k)), 1978.)

12.08.160 Grading.

"Grading" means any excavating or filling of earth material or any combination thereof conducted at a site to prepare said site for construction or other improvements thereon.

(Ord. 11778 § 2 (Art. 3 § 302(1)), 1978: Ord. 11773 (Art. 3 § 302(1)), 1978.)

12.08.170 Health care institution.

"Health care institution" means any hospital, convalescent home, or other similar facilities which provide health care, medical treatment, room, board or other services for the ill, retarded or convalescent.

(Ord. 11778 § 2 (Art. 3 § 302(m)), 1978: Ord. 11773 (Art. 3 § 302(m)), 1978.)

12.08.180 Health officer.

"Health officer" means the director of the department of public health of the county of Los Angeles, or his duly authorized representative.

(Ord. 2006-0040 § 106, 2006: Ord. 11778 § 2 (Art. 3 § 302(n)), 1978: Ord. 11773 (Art. 3 § 302(n)), 1978.)

12.08.190 Impulsive noise.

"Impulsive noise" means a sound of short duration, usually less than one second and of high intensity, with an abrupt onset and rapid decay.

(Ord. 11778 § 2 (Art. 3 § 302(o)), 1978: Ord. 11773 (Art. 3 § 302 (o)), 1978.)

12.08.200 Industrial property.

"Industrial property" means property which is developed and used either in part or in whole for manufacturing purposes. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable. (See Title 22 of this code.)

(Ord. 11778 § 2 (Art. 3 § 302(p)), 1978: Ord. 11773 § 2 (Art. 3 § 302(p)), 1978.)

12.08.210 Intrusive noise.

"Intrusive noise" means that alleged offensive noise which intrudes over and above the existing ambient noise at the receptor property.

(Ord. 11778 § 2 (Art. 3 § 302(q)), 1978: Ord. 11773 § 2 (Art. 3 § 302(q)), 1978.)

12.08.220 Mobile noise source.

"Mobile noise source" means any noise source other than a fixed noise source.

(Ord. 11778 § 2 (Art. 3 § 302(r)), 1978: Ord. 11773 § 2 (Art. 3 § 302(r)), 1978.)

12.08.230 Noise disturbance.

"Noise disturbance" means an alleged intrusive noise which violates an applicable noise standard as set forth in this chapter.

(Ord. 11778 § 2 (Art. 3 § 302(s)), 1978: Ord. 11773 § 2 (Art. 3 § 302(s)), 1978.)

12.08.240 Noise histogram.

"Noise histogram" means a graphical representation of the distribution of frequency of occurrence of all noise levels near and far measured over a given period of time.

(Ord. 11778 § 2 (Art. 3 § 302(u)), 1978: Ord. 11773 § 2 (Art. 3 § 302(u)), 1978.)

12.08.250 Noise level (L_N).

"Noise level (L_N)" means that noise level expressed in decibels which exceeds the specified (L_N) value as a percentage of total time measured. For instance, an L_{25} noise level means that noise level which is exceeded 25 percent of the time measured.

(Ord. 11778 § 2 (Art. 3 § 302 (v)), 1978: Ord. 11773 § 2 (Art. 3 § 302(v)), 1978.)

12.08.260 Noise-sensitive zone.

"Noise-sensitive zone" means any area designated pursuant to Part 4 of this chapter for the purpose of ensuring exceptional quiet.

(Ord. 11778 § 2 (Art. 3 § 302(t)), 1978: Ord. 11773 § 2 (Art. 3 § 302(t)), 1978.)

12.08.270 Noise zone.

"Noise zone" means any defined area or region of a generally consistent land use, as described in Section 12.08.380.

(Ord. 11778 § 2 (Art. 3 § 302(w)), 1978: Ord. 11773 § 2 (Art. 3 § 302(w)), 1978.)

12.08.280 Person.

"Person" means any individual, firm, association, partnership, joint venture, or corporation.

(Ord. 11778 § 2 (Art. 3 § 302(x)), 1978: Ord. 11773 § 2 (Art. 3 § 302(x)), 1978.)

12.08.290 Powered model vehicle.

"Powered model vehicle" means any self-propelled airborne, waterborne or landborne plane, vessel or vehicle which is not designed to carry individuals, including but not limited to any model airplane, boat, car or rocket.

(Ord. 11778 § 2 (Art. 3 § 302(y)), 1978: Ord. 11773 § 2(Art. 3 § 302(y)), 1978.)

12.08.300 Public right-of-way.

"Public right-of-way" means any street, avenue, boulevard, highway, sidewalk or alley, or similar place, which is owned or controlled by a governmental entity.

(Ord. 11778 § 2 (Art. 3 § 302(z)), 1978: Ord. 11773 § 2 (Art. 3 § 302(z)), 1978.)

12.08.310 Pure tone noise.

"Pure tone noise" means any sound which can be judged as audible as a single pitch or a set of single pitches by the health officer, for the purposes of this chapter, a pure tone shall exist if the one-third octave band sound-pressure level in the band with the tone exceeds the arithmetic average of the sound-pressure levels of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hertz and above, and by 8 dB for center frequencies between 160 and 400 Hertz, and by 15 dB for center frequencies less than or equal to 125 Hertz.

(Ord. 11778 § 2 (Art. 3 § 302(aa)), 1978: Ord. 11773 § 2 (Art. 3 § 302(aa)), 1978.)

12.08.320 Real property boundary.

"Real property boundary" means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including intra-building real property divisions.

(Ord. 11778 § 2 (Art. 3 § 302(bb)), 1978: Ord. 11773 § 2 (Art. 3 § 302(bb)), 1978.)

12.08.330 Residential property.

"Residential property" means a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels. In cases of multiple land uses of any property, the county zoning classification of such property pursuant to county Ordinance 1494, as amended, shall be applicable.

(Ord. 11778 § 2 (Art. 3 § 302(cc)), 1978: Ord. 11773 § 2 (Art. 3 § 302(cc)), 1978.)

12.08.340 Sound level meter.

"Sound level meter" means an instrument, including a microphone, an amplifier, an output meter and frequency weighting network, for the measurement of sound levels, which satisfies the requirements pertinent for Type S2A meters in American National Standards Institute specifications for sound level meters, S1.4-1971, or the most recent revision thereof.

(Ord. 11778 § 2 (Art. 3 § 302(dd)), 1978: Ord. 11773 § 2 (Art. 3 § 302(dd)), 1978.)

12.08.350 Vibration.

"Vibration" means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observations of moving objects. The perception threshold shall be presumed to be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

(Ord. 11778 § 2 (Art. 3. § 302(ee)), 1978: Ord. 11773 § 2 (Art. 3 § 302(ee)), 1978.)

12.08.360 Weekday.

"Weekday" means any day, Monday through Friday, which is not a legal holiday.

(Ord. 11778 § 2 (Art. 3 § 302(ff)), 1978: Ord. 11773 § 2 (Art. 3 § 302(ff), 1978.)

Part 3 COMMUNITY NOISE CRITERIA

12.08.370 Decibel measurement—Basis.

Any decibel measurement made pursuant to the provisions of this chapter shall be based on a reference sound-pressure of 20 micropascals, as measured with a sound level meter using the A-weighted network (scale) at slow response, or at the fast response when measuring impulsive sound levels and vibrations.

(Ord. 11778 § 2 (Art. 4 § 401), 1978: Ord. 11773 § 2 (Art. 4 § 401), 1978.)

12.08.380 Noise zones designated.

Receptor properties described hereinafter in this chapter are hereby assigned to the following noise zones:

Noise Zone I—Noise-sensitive area; Noise Zone II—Residential properties; Noise Zone III—Commercial properties; Noise Zone IV—Industrial properties.

(Ord. 11778 § 2 (Art. 4 § 402), 1978: Ord. 11773 § 2 (Art. 4 § 402), 1978.)

12.08.390 Exterior noise standards—Citations for violations authorized when.

A. Unless otherwise herein provided, the following exterior noise levels shall apply to all receptor properties within a designated noise zone:

Noise Zone	Designated Noise Zone Land Use (Receptor property)	Time Interval	Exterior Noise Level (dB)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 pm to 7:00 am (nighttime)	45
		7:00 am to 10:00 pm (daytime)	50
III	Commercial properties	10:00 pm to 7:00 am (nighttime)	55
		7:00 am to 10:00 pm (daytime)	60
IV	Industrial properties	Anytime	70

B. Unless otherwise herein provided, no person shall operate or cause to be operated, any source of sound at any location within the unincorporated county, 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 any of the following exterior noise standards:

Standard No. 1 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable noise level from subsection A of this section; or, if the ambient L50 exceeds the foregoing level, then the ambient L50 becomes the exterior noise level for Standard No. 1.

Standard No. 2 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable noise level from subsection A of this section plus 5dB; or, if the ambient L25 exceeds the foregoing level, then the ambient L25 becomes the exterior noise level for Standard No. 2.

Standard No. 3 shall be the exterior noise level which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable noise level from subsection A of this section plus 20dB; or, if the ambient L8.3 exceeds the foregoing level, then the ambient L8.3 becomes exterior noise level for Standard No. 3.

Standard No. 4 shall be the exterior noise level which may not be exceeded for a cumulative period of more than one minute in any hour. Standard No. 4 shall be the applicable noise level from subsection A of this section plus 15dB; or, if the ambient L1.7 exceeds the foregoing level, then the ambient L1.7 becomes the exterior noise level for Standard No. 4.

Standard No. 5 shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable noise level from subsection A of this section plus 20dB; or, if the ambient L0 exceeds the foregoing level then the ambient L0 becomes the exterior noise level for Standard No. 5.

C. If the measurement location is on a boundary property between two different zones, the exterior noise level utilized in subsection B of this section to determine the exterior standard shall be the arithmetic mean of the exterior noise levels in subsection A of the subject zones. Except as provided for above in this subsection C, when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level as designated in subsection A shall be the daytime exterior noise level for the subject receptor property.

D. The ambient noise histogram shall be measured at the same location along the property line utilized in subsection B of this section, with the alleged intruding noise source inoperative. If for any reason the alleged intruding noise source cannot be turned off, the ambient noise histogram will be estimated by performing a measurement in the same general area of the alleged intruding noise source but at a sufficient distance such that the noise from the alleged intruding noise source is at least 10dB below the ambient noise histogram in order that only the actual ambient noise histogram be measured. If the difference between the ambient noise histogram and the alleged intruding noise source is 5 to 10dB, then the level of the ambient noise histogram itself can be reasonably determined by subtracting a one-decibel correction to account for the contribution of the alleged intruding noise source.

E. In the event the intrusive exceeds the exterior noise standards as set forth in subsections B and C of this section at a specific receptor property and the health officer has reason to believe that this violation at said specific receptor property was unanticipated and due to abnormal atmospheric conditions, the health officer shall issue an abatement notice in lieu of a citation. If the specific violation is abated, no citation shall be issued therefor. If, however, the specific violation is not abated, the health officer may issue a citation.

(Ord. 11778 § 2 (Art. 4 § 403), 1978: Ord. 11773 § 2 (Art. 4 § 403), 1978.)

12.08.400 Interior noise standards.

A. No person shall operate or cause to be operated within a dwelling unit, any source of sound, or allow the creation of any noise, which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed the following standards:

Standard No. 1 The applicable interior noise level for cumulative period of more than five minutes in any hour; or

Standard No. 2 The applicable interior noise level plus 5dB for a cumulative period of more than one minute in any hour; or

Standard No. 3 The applicable interior noise level plus 10dB or the maximum measured ambient noise level for any period of time.

B. The following interior noise levels for multifamily residential dwellings shall apply, unless otherwise specifically indicated, within all such dwellings with windows in their normal seasonal configuration.

Noise Zone	Designated Land Use	Time Interval	Allowable Interior Noise Level (dB)
All	Multifamily	10 pm—7 am	40
	Residential	7 am—10 pm	45

C. If the measured ambient noise level reflected by the L50 exceeds that permissible within any of the interior noise standards in subsection A of Section 12.08.390, the allowable interior noise level shall be increased in 5dB increments in each standard as appropriate to reflect said ambient noise level (L50).

(Ord. 11778 § 2(Art. 4 § 404), 1978: Ord. 11773 § 2 (Art. 4 § 404), 1978.)

12.08.410 Correction for certain types of sounds.

For any source of sound which emits a pure tone or impulsive noise, the noise levels as set forth in Sections 12.08.390 and 12.08.400 shall be reduced by five decibels.

(Ord. 11778 § 2 (Art. 4 § 405), 1978: Ord. 11773 § 2 (Art. 4 § 405), 1978.)

12.08.420 Measurement methods.

A. Utilizing the A-weighting scale of the sound-level meter and the "slow" meter response (use "fast" response for impulsive type sounds), the noise level shall be measured at a position or positions at any point on the receiver's property.

B. In general, the microphone shall be located four to five feet above the ground; 10 feet or more from the nearest reflective surface, where possible. However, in those cases where another elevation is deemed appropriate, the latter shall be utilized.

C. Interior noise measurements shall be made within the affected residential unit. The measurements shall be made at a point at least four feet from the wall, ceiling or floor nearest the noise source, with windows in the normal seasonal configuration. Calibration of the measurement equipment, utilizing an acoustic calibrator, shall be performed immediately prior to recording any noise data.

(Ord. 11778 § 2 (Art. 4 § 406), 1978: Ord. 11773 § 2 (Art. 4 § 406), 1978.)

Part 4 SPECIFIC NOISE RESTRICTIONS

12.08.430 Acts deemed violations when.

Notwithstanding any other provisions of this chapter, the acts set out in this Part 4, and the causing or permitting thereof, are declared to be in violation of this chapter.

(Ord. 11778 § 2 (Art. 5 § 501 (part)), 1978: Ord. 11773 § 2 (Art. 5 § 501 (part)), 1978.)

12.08.440 Construction noise.

A. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited.

B. Noise Restrictions at Affected Structures. The contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in the following schedule:

1. At Residential Structures.

a. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

	Single-family Residential	Multi-family Residential	Semiresidential/ Commercial

Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75dBA	80dBA	85dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60dBA	64dBA	70dBA

b. Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment:

	Single-family Residential	Multi-family Residential	Semiresidential/ Commercial
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60dBA	65dBA	70dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50dBA	55dBA	60dBA

2. At Business Structures.

a. Mobile equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

Daily, including Sunday and legal holidays, all hours: maximum of 85dBA.

C. All mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order.

D. In case of a conflict between this chapter and any other ordinance regulating construction activities, provisions of any specific ordinance regulating construction activities shall control.

(Ord. 11778 § 2 (Art. 5 § 501(c)), 1978: Ord. 11778 § 2 (Art. 5 § 501(c)), 1978.)

12.08.450 Forced-air blowers in tunnel car washes.

Operating or permitting the operation of any forced-air blower in a tunnel car wash between the hours of 7:00 a.m. and 8:00 p.m. in such a manner as to exceed any of the following sound levels is prohibited:

	Units Installed	
Measurement Location	Before 1-1-80 dB	On or After 1-1-80 dB
Any point on contiguous receptor property, five feet above grade level, no closer than three feet from any wall		
Residential	70	60
Commercial/Industrial	75	65

(Ord. 11778 § 2 (Art. 5 § 501(m)), 1978: Ord. 11773 § 2 (Art. 5 § 501(m)), 1978.)

12.08.460 Loading and unloading operations.

Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of 10:00 p.m. and 6:00 a.m. in such a manner as to cause noise disturbance is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(b)), 1978: Ord. 11773 § 2 (Art. 5 § 501(b)), 1978.)

12.08.470 Noise disturbances in noise-sensitive zones.

A. Creating or causing the creation of any noise disturbance within any noise-sensitive zone, as designated by the health officer, is prohibited, provided that conspicuous signs are displayed indicating the presence of the zone.

B. Noise-sensitive zones must be indicated by the display of conspicuous signs in at least three separate locations within 164 meters (one-tenth mile) of the institution or facility.

(Ord. 11778 § 2 (Art. 5 § 501(k)), 1978: Ord. 11773 § 2(Art. 5 § 501(k)), 1978.)

12.08.480 Places of public entertainment.

Operating, playing or permitting the operation or playing of any radio, television, phonograph, drum, musical instrument, sound amplifier or similar device which produces, reproduces or amplifies sound in any place of public entertainment at a sound level greater than 95dBA, as read by the slow response on a soundlevel meter at any point that is normally occupied by a customer is prohibited, unless a conspicuous and legible sign is located outside such place, near each public entrance, stating "WARNING: SOUND LEVELS WITHIN MAY CAUSE HEARING IMPAIRMENT."

(Ord. 11778 § 2 (Art. 5 § 501(f)), 1978: Ord. 11773 § 2 (Art. 5 § 501(f)), 1978.)

12.08.490 Powered model vehicles.

Operating or permitting the operation of powered model vehicles so as to create a noise disturbance across a residential real-property boundary, or within a noise-sensitive zone between the hours of 8:00 p.m. and 7:00 a.m. the following day is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(g)), 1978: Ord. 11773 § 2 (Art. 5 § 501(g)) 1978.)

12.08.500 Emergency signaling devices.

A. The intentional sounding or permitting the sounding outdoors of any emergency signaling device, including fire, burglar or civil-defense alarm, siren, whistle, or similar stationary emergency signaling device, except for emergency purposes or for testing, as provided in subsection B2 below, is prohibited.

B. 1. Testing of a stationary emergency signaling device shall not occur before 7:00 a.m. or after 7:00 p.m. Any such testing shall use only the minimum cycle test time. In no case shall such test time exceed 60 seconds.

2. Testing of the complete emergency signaling system, including the functioning of the signaling device, and the personnel response to the signaling device, shall not occur more than once in each calendar month. Such testing shall not occur before 7:00 a.m. or after 10:00 p.m. The time limit specified in subsection B1 above shall not apply to such complete-system testing.

C. Sounding or permitting the sounding of any exterior burglar or fire alarm, or any motor-vehicle burglar alarm is prohibited, unless such alarm is terminated within 15 minutes of activation.

(Ord. 11778 § 2 (Art. 5 § 501(i)), 1978: Ord. 11773 § 2 (Art. 5 § 501(i)), 1978.)

12.08.510 Stationary nonemergency signaling devices.

A. Sounding or permitting the sounding of any electronically amplified signal from any stationary bell, chime, siren, whistle, or similar device intended primarily for nonemergency purposes, from any place, for more than 10 consecutive seconds in any hourly period is prohibited.

B. Houses of religious worship shall be exempt for the operation of this provision.

C. Sound sources covered by this provision and not exempted under subsection B may be exempted by a variance issued by the health officer.

(Ord. 11778 § 2 (Art. 5 § 501(h)), 1978: Ord. 11773 § 2(Art. 5 § 501(h)), 1978.)

12.08.520 Refuse collection vehicles.

A. On or after three years following August 17, 1978, the effective date of the ordinance codified in this chapter, operating or permitting the operation of the compacting mechanism of any motor vehicle which compacts refuse and which creates, during the compacting cycle, a sound level in excess of 86dBA when measured at 50 feet from any point of the vehicle is prohibited.

B. Operating or permitting the operation of the compacting mechanism of any motor vehicle which compacts refuse between the hours of 10:00 p.m. and 6:00 a.m. the following day in a residential area or noise-sensitive zone, or within 500 feet thereof is prohibited.

C. Collecting refuse with collection vehicle between the hours of 10:00 p.m. and 6:00 a.m. the following day in a residential area or noise-sensitive zone or within 500 feet thereof.

D. In the case of conflict between this chapter and any other ordinance regulating refuse collection, provisions of any specific ordinance regulating refuse collection shall control.

(Ord. 11778 § 2 (Art. 5 § 501(j)), 1978: Ord. 11773 § 2 (Art. 5 § 501(j)), 1978.)

12.08.530 Residential airconditioning or refrigeration equipment.

Operating or permitting the operation of any airconditioning or refrigeration equipment in such a manner as to exceed any of the following sound levels is prohibited.

Measurement Location	Units Installed Before 1-1-80 dBA	Units Installed On or After 1-1-80 dBA
Any point on neighboring property line, 5 feet above grade level, no closer than 3 feet from any wall.	60	55
Center of neighboring patio, 5 feet above grade level, no closer than 3 feet from any wall.	55	50
Outside the neighboring living area window nearest the equipment location, not more	55	50

than 3 feet from the window opening, but at least 3 feet from any other surface.		

(Ord. 11778 § 2 (Art. 5 § 501(1)), 1978: Ord. 11773 § 2 (Art. 5 § 501(1)), 1978.)

12.08.540 Street sales.

Offering for sale, selling anything, or advertising by shouting or outcry within any residential or commercial area or noise-sensitive zone of the unincorporated areas of the county is prohibited except by variance issued by the health officer. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food and beverages at licensed sporting events, parades, fairs, circuses, or other similar licensed public-entertainment events.

(Ord. 11778 § 2 (Art 5 § 501(a)), 1978: Ord. 11773 § 2 (Art. 5 § 501(a)), 1978.)

12.08.541 Street sales—Restrictions on sound system speakers.

A person offering for sale, selling or advertising anything edible shall not emit music or other sounds from an external speaker affixed to a motor vehicle between the hours of 8:00 p.m. and 6:00 a.m. within any residential, commercial or noise sensitive-zone of the unincorporated area of the County. The provisions of this section shall not be construed to prohibit the selling by outcry of merchandise, food and beverages, at licensed sporting events, parades, fairs, circuses, or other similar licensed-entertainment events.

(Ord. 2002-0028 § 2, 2002)

12.08.550 Vehicle or motorboat repairs and testing.

Repairing, rebuilding, modifying or testing any motor vehicle, motorcycle or motorboat in such a manner as to cause a noise disturbance across a real-property boundary or within a noisesensitive zone is prohibited.

(Ord. 11778 § 2 (Art. 5 § 501(e)), 1978: Ord. 11773 § 2 (Art. 5 § 501(e)), 1978.)

12.08.560 Vibration.

Operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on a public space or public right-of-way is prohibited. The perception threshold shall be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

(Ord. 11778 § 2 (Art. 5 § 501(d)), 1978: Ord. 11773 § 2 (Art. 5 § 501(d)), 1978.)

Part 5 EXEMPTIONS

12.08.570 Activities exempt from chapter restrictions.

The following activities set out in this chapter shall be exempted from the provisions of this chapter:

A. Emergency Exemption. The emission of sound for the purpose of alerting persons to the existence of an emergency, or the emission of sound in the performance of emergency work;

B. Warning Devices. Warning devices necessary for the protection of public safety, as for example police, fire and ambulance sirens, and train horns;

C. Outdoor Activities. Activities conducted on public playgrounds and public or private school grounds, including but not limited to school athletic and school entertainment events;

D. Exemption from Exterior Noise Standards. The following activities are exclusively regulated by the prohibitions of Part 4 of this chapter:

1. Construction,
2. Stationary nonemergency signaling devices,
3. Emergency signaling devices,
4. Refuse collection vehicles,
5. Residential air-conditioning or refrigeration equipment,
6. Forced-air blowers;

E. Motion Picture Production and Related Activities;

F. Railroad Activities. All locomotives and rail cars operated by any railroad which is regulated by the California Public Utilities Commission;

G. Federal or State Preexempted Activities. Any activity, to the extent regulation thereof has been preempted by state or federal law;

H. Public Health and Safety Activities. All transportation, flood control, and utility company maintenance and construction operations at any time on public right-of-way, and those situations which may occur on private real property deemed necessary to serve the best interest of the public and to protect the public's health and well being, including but not limited to street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, snow removal, house moving, vacuuming catchbasins, removal of damaged poles and vehicles, repair of water hydrants and mains, gas lines, oil lines, sewers, etc.;

I. Motor Vehicles on Private Right-of-way and Private Property. Except as provided in Section 12.08.550, all legal vehicles of transportation operating in a legal manner in accordance with local, state and federal vehicle-noise regulations within the public right-of-way or air space, or on private property;

J. Seismic Surveys Authorized by the State Land Commission;

K. Agricultural Operations. All mechanical devices, apparatus or equivalent associated with agricultural operations conducted on agricultural property, unless if in the vicinity of residential land uses, in which case a variance permit is required to operate noise-producing devices, with the following stipulations:

1. Operations do not take place between 8:00 p.m. and 6:00 a.m., or
2. Such operations and equipment are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions, or
3. Such operations and equipment are associated with agricultural pest-control through pesticide application, provided the application is made in accordance with permits issued by or regulations enforced by the county agricultural commissioner,

4. Such devices utilized for pest control which incorporate stationary or mobile noise sources (electro-mechanical birdscare devices, etc.) are operated only by permit issued by the health officer. The allowable hours and days for operation of these devices will be specified in the permit,

5. All equipment and machinery powered by internal combustion engines shall be equipped with a proper muffler and air-intake silencer in good working order;

L. Minor Maintenance to Residential Real Property. Noise sources associated with the minor maintenance of residential real property, provided said activities take place as follows:

1. During Pacific Standard Time between the hours of 8:00 a.m. and 6:00 p.m. on any day except Sunday, when such activities may take place between the hours of 9:00 a.m. and 6:00 p.m., and

2. During Daylight Savings Time between the hours of 8:00 a.m. and 7:00 p.m. on any day except Sunday, when such activities may take place between the hours of 9:00 a.m. and 6:00 p.m.;

M. Operation of Oil and Gas Wells.

1. Normal well servicing, remedial or maintenance work performed within an existing well which does not involve drilling or redrilling and which is restricted to the hours between 7:00 a.m. and 10:00 p.m., and

2. Drilling or redrilling work which is done in full compliance with the conditions of permits issued under Chapter 5, Article 1, of the County Zoning Ordinance, as amended, as set out in Title 22 of this code.

(Ord. 97-0007 § 1, 1997: Ord. 11778 § 2(Art. 6 § 601), 1978: Ord. 11773 § 2 (Art. 6 § 601), 1978.)

Part 6 VARIANCES

12.08.580 Conditions for granting variances—Health officer authority.

A. Variances from the requirements of this chapter may be granted by the health officer for a period of not to exceed two years, subject to such terms, conditions and requirements as he may deem reasonable. A variance may be granted only if the health officer makes the findings that:

1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with this chapter; or

2. The activity, operation or noise source cannot feasibly be done in a manner that would comply with the provisions of this chapter, and no other reasonable alternative is available to the applicant.

B. In granting a variance, the health officer may prescribe any conditions or requirements he deems necessary to minimize adverse effects upon the community or the surrounding neighborhood.

C. In granting variances, the health officer shall consider the magnitude of nuisance caused by the offensive noise, the uses of property within the area of impingement by the noise, operations carried on under existing nonconforming rights or conditional use permits or zone variances, the time factors related to study, design, financing and construction of remedial work, the economic factors related to age and useful life of the equipment, the general public interest, health and welfare, the feasibility of plans submitted for correction, and the effect on the community if the variance was refused.

(Ord. 11778 § 2 (Art. 7 § 701), 1978: Ord. 11773 § 2 (Art. 7 § 701), 1978.)

12.08.590 Application—Contents.

Every applicant for a variance shall file with the health officer a written application on a form prescribed by the health officer. The application shall state the name and address of the applicant, the nature of the noise source involved, and such other information as the health officer may require.

(Ord. 11778 § 2 (Art. 7 § 702), 1978: Ord. 11773 § 2 (Art. 7 § 702), 1978.)

12.08.600 Application—Fee.

Every applicant shall pay a fee of $25.00 for each application for variance.

(Ord. 11778 § 2 (Art. 7 § 703), 1978: Ord. 11773 § 2 (Art. 7 § 703), 1978.)

12.08.610 Application—Action by health officer.

A. The health officer shall act, within 30 days, if possible, on an application for a variance, and shall notify the applicant of the action taken, namely, approval, conditional approval, or denial. Before acting on an application for a variance, the health officer may require the applicant to furnish further information. Failure of the applicant to provide such further information may be grounds for denial of the variance.

B. In the event of denial of an application for a variance, the health officer shall notify the applicant in writing of the reasons therefor. The health officer shall not accept a further application unless the applicant has complied with the objections specified by the health officer as his reasons for denial.

(Ord. 11778 § 2 (Art. 7 § 704), 1978: Ord. 11773 § 2 (Art. 7 § 704), 1978.)

12.08.620 Application—Denial conditions.

The applicant may at his option deem the variance denied if the health officer fails to act on the application within 30 days after filing or within 10 days after applicant furnishes the further information requested by the health officer, whichever is later.

(Ord. 11778 § 2 (Art. 7 § 705), 1978: Ord. 11773 § 2 (Art. 7 § 705), 1978.)

12.08.630 Public hearing—For reconsideration of health officer decision.

Within 10 days after notice by the health officer of the decision on application for variance, any interested party may petition the health officer in writing for a public hearing to reconsider the decision. The health officer shall thereupon appoint a hearing officer to conduct said hearing.

(Ord. 11778 § 2 (Art. 7 § 706), 1978: Ord. 11773 § 2 (Art. 7 § 706), 1978.)

12.08.640 Public hearing—Decision and findings—Appeals.

A. Based upon the evidence presented at the public hearing, the hearing officer may affirm, modify or reverse the previous determination subject to such terms, conditions and requirements as he may deem necessary. The hearing officer shall be guided by the same considerations as set forth in Section 12.08.580.

B. A decision by the hearing officer to grant a variance may be made only if the hearing officer makes the findings that:

1. Additional time is necessary for the applicant to alter or modify his activity, operation or noise source to comply with this chapter; or

2. The activity, operation or noise source cannot feasibly be done in a manner that would comply with the provisions of this chapter, and no other reasonable alternative is available to the applicant.

C. The decision of the hearing officer shall be by written order, and shall be final. Appeals from an adverse decision shall be made to a court of competent jurisdiction.

(Ord. 11778 § 2 (Art. 7 § 707), 1978: Ord. 11773 § 2 (Art. 7 § 707), 1978.)

Part 7 VIOLATIONS AND ENFORCEMENT

12.08.650 Enforcement—Health officer powers and duties.

The health officer shall have primary responsibility for the enforcement of the noise regulations contained in this chapter. The health officer shall make all noise-level measurements required for the enforcement of this chapter. Nothing in this chapter shall prevent the health officer from efforts to obtain voluntary compliance by way of warning, notice, or educational means.

(Ord. 11778 § 2 (Art. 8 § 801), 1978: Ord. 11773 § 2 (Art. 8 § 801), 1978.)

12.08.660 Initial violations.

In the event of an initial violation of the provisions of this chapter a written notice of violation shall be given the alleged violator, specifying the time by which the condition shall be corrected or an application for permit or variance shall be received by the health officer. The health officer shall take no further action in the event the cause of the violation has been removed, the condition abated or fully corrected within the time period specified in the written notice.

(Ord. 11778 § 2 (Art. 8 § 802), 1978: Ord. 11773 § 2 (Art. 8 § 802), 1978.)

12.08.670 Violation—Penalty.

Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than $500.00 or be imprisoned in the County Jail for a period not exceeding six months or by both such fine and imprisonment. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such.

(Ord. 11778 § 2 (Art. 8 § 803), 1978: Ord. 11773 § 2 (Art. 8 § 803, 1978.)

12.08.680 Severability.

If any provision, clause, sentence or paragraph of this chapter or the application thereof to any person or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of the provisions of this chapter which can be given effect without the invalid provisions or application and, to this end, the provisions of this chapter are hereby declared to be severable.

(Ord. 11778 § 2 (Art. 8 § 804), 1978: Ord. 11773 § 2 (Art. 8 § 804), 1978.)

APPENDIX 5.1:

STUDY AREA PHOTOS

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14267_L1_A 1.North
34, 38' 46.380000", 118, 7' 23.380000"

14267_L1_A 2.South
34, 38' 46.380000", 118, 7' 23.350000"

14267_L1_A 3.East
34, 38' 46.400000", 118, 7' 23.300000"

14267_L1_A 4.West
34, 38' 46.340000", 118, 7' 23.350000"

14267_L2_B 1.North
34, 38' 50.170000", 118, 7' 15.500000"

14267_L2_B 2.South
34, 38' 50.010000", 118, 7' 15.470000"

14267_L2_B 3.East
34, 38' 49.970000", 118, 7' 15.440000"

14267_L2_B 4.West
34, 38' 49.980000", 118, 7' 15.440000"

14267_L3_C 1.North
34, 38' 54.570000", 118, 7' 7.750000"

14267_L3_C 2.South
34, 38' 54.390000", 118, 7' 7.780000"

14267_L3_C 3.East
34, 38' 54.540000", 118, 7' 7.670000"

14267_L3_C 4.West
34, 38' 54.510000", 118, 7' 7.700000"

14267_L4_G 1.North
34, 38' 44.940000", 118, 7' 7.200000"

14267_L4_G 2.South
34, 38' 44.900000", 118, 7' 7.230000"

14267_L4_G 3.East
34, 38' 44.900000", 118, 7' 7.200000"

14267_L4_G 4.West
34, 38' 44.830000", 118, 7' 7.400000"

14267_L5_H 1.North
34, 38' 49.160000", 118, 7' 42.880000"

14267_L5_H 2.South
34, 38' 49.100000", 118, 7' 42.880000"

14267_L5_H 3.East
34, 38' 49.090000", 118, 7' 42.880000"

14267_L5_H 4.West
34, 38' 49.170000", 118, 7' 42.960000"

14267_L6_I 1.North
34, 38' 25.140000", 118, 7' 41.120000"

14267_L6_I 2.South
34, 38' 25.040000", 118, 7' 41.120000"

14267_L6_I 3.East
34, 38' 25.060000", 118, 7' 40.960000"

14267_L6_I 4.West
34, 38' 24.970000", 118, 7' 40.990000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS

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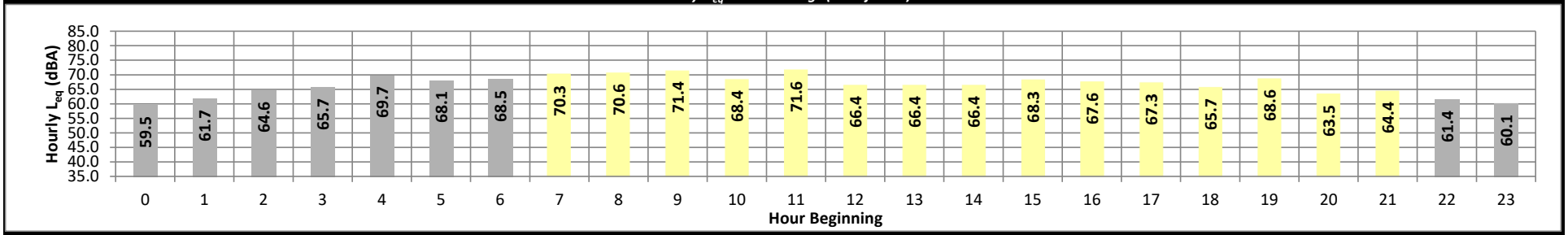
24-Hour Noise Level Measurement Summary

Date: Thursday, October 27, 2022 *Location:* L1 - Located north of the project site near single-family *Meter:* Piccolo II *JN:* 14267

Project: Antelope Valley Commerce Center *Source:* residence at 42020 4th St E. *Analyst:* Z. Ibrahim

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	59.5	69.4	46.5	69.0	68.2	66.3	64.7	59.3	55.3	48.4	47.7	46.7	59.5	10.0	69.5
	1	61.7	71.0	50.5	70.6	69.8	67.7	66.5	62.4	57.4	52.2	51.3	50.7	61.7	10.0	71.7
	2	64.6	74.9	51.2	74.6	74.3	72.5	70.3	63.0	59.1	52.9	52.1	51.4	64.6	10.0	74.6
	3	65.7	75.1	56.8	74.8	74.3	71.7	69.9	65.9	62.4	58.0	57.4	56.9	65.7	10.0	75.7
	4	69.7	80.5	57.7	80.1	79.4	76.8	73.8	68.9	65.5	59.9	58.8	57.8	69.7	10.0	79.7
	5	68.1	76.4	59.5	76.0	75.4	73.2	72.1	68.4	66.0	61.9	60.8	59.7	68.1	10.0	78.1
	6	68.5	76.3	61.0	75.9	75.3	73.3	72.0	68.9	67.0	63.2	62.2	61.2	68.5	10.0	78.5
Day	7	70.3	80.2	61.8	79.7	78.9	76.8	74.6	69.3	67.4	64.0	63.1	62.1	70.3	0.0	70.3
	8	70.6	81.1	58.8	80.6	80.0	77.7	75.8	69.2	66.1	61.4	60.4	59.0	70.6	0.0	70.6
	9	71.4	79.0	58.3	78.5	78.0	76.4	75.2	72.5	70.1	61.5	60.1	58.6	71.4	0.0	71.4
	10	68.4	78.3	54.1	77.8	77.2	75.1	73.3	68.4	64.6	57.9	56.4	54.4	68.4	0.0	68.4
	11	71.6	83.0	55.1	82.0	80.7	78.7	77.2	70.5	64.4	58.3	57.1	55.5	71.6	0.0	71.6
	12	66.4	77.0	55.5	76.3	75.6	72.8	70.5	65.8	63.0	58.3	57.1	55.7	66.4	0.0	66.4
	13	66.4	76.7	53.6	76.2	75.5	73.3	71.3	65.8	62.4	56.9	55.4	54.0	66.4	0.0	66.4
	14	66.4	75.8	55.5	75.4	74.8	72.6	70.8	66.2	63.6	58.8	57.4	55.8	66.4	0.0	66.4
	15	68.3	79.4	56.5	78.9	78.2	75.4	72.4	66.9	63.8	59.3	58.2	56.8	68.3	0.0	68.3
	16	67.6	78.6	56.9	78.1	77.3	74.0	71.3	66.4	64.0	60.0	58.8	57.3	67.6	0.0	67.6
	17	67.3	78.1	56.7	77.4	76.6	73.3	71.8	66.3	63.8	59.5	58.4	57.0	67.3	0.0	67.3
	18	65.7	76.2	53.3	75.7	75.1	72.3	70.0	65.0	62.4	56.6	55.0	53.6	65.7	0.0	65.7
	19	68.6	80.9	49.7	80.0	79.4	78.0	73.8	64.1	61.0	53.0	51.3	49.9	68.6	5.0	73.6
	20	63.5	72.2	51.0	71.8	71.4	69.7	67.9	64.0	61.0	54.0	52.6	51.2	63.5	5.0	68.5
	21	64.4	76.3	50.4	75.7	74.9	70.6	67.7	63.6	60.1	53.1	51.6	50.6	64.4	5.0	69.4
Night	22	61.4	69.6	49.9	69.3	68.8	67.2	65.7	62.3	58.8	52.8	51.5	50.2	61.4	10.0	71.4
	23	60.1	69.5	47.7	69.1	68.4	66.4	64.9	60.3	56.2	49.5	48.6	47.8	60.1	10.0	70.1

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	63.5	72.2	49.7	71.8	71.4	69.7	67.7	63.6	60.1	53.0	51.3	49.9
	Max	71.6	83.0	61.8	82.0	80.7	78.7	77.2	72.5	70.1	64.0	63.1	62.1
Energy Average		68.4	Average:		77.6	76.9	74.5	72.2	66.9	63.8	58.2	56.9	55.4
Night	Min	59.5	69.4	46.5	69.0	68.2	66.3	64.7	59.3	55.3	48.4	47.7	46.7
	Max	69.7	80.5	61.0	80.1	79.4	76.8	73.8	68.9	67.0	63.2	62.2	61.2
Energy Average		65.8	Average:		73.3	72.7	70.6	68.9	64.4	60.9	55.4	54.5	53.6

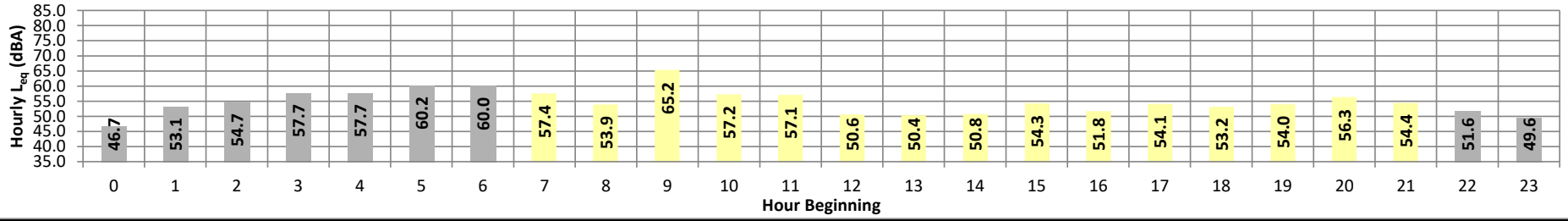
24-Hour	L_{eq} (dBA) Daytime (7am-10pm)	Nighttime (10pm-7am)
67.6	**68.4**	**65.8**

24-Hour Noise Level Measurement Summary

Date: Thursday, October 27, 2022 *Location:* L2 - Located north of the project site near single-family *Meter:* Piccolo II *JN:* 14267

Project: Antelope Valley Commerce Center *Source:* residence at 42057 5th St E. *Analyst:* Z. Ibrahim

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	46.7	52.8	42.1	52.4	51.8	50.6	49.6	47.5	45.6	43.2	42.8	42.3	46.7	10.0	56.7
	1	53.1	63.2	45.8	62.4	61.3	59.0	57.3	52.5	49.7	47.1	46.6	46.0	53.1	10.0	63.1
	2	54.7	60.3	49.4	59.8	59.3	58.4	57.8	55.7	53.8	50.9	50.2	49.6	54.7	10.0	64.7
	3	57.7	64.9	48.9	64.6	64.3	63.6	62.8	58.1	54.7	50.4	49.7	49.0	57.7	10.0	67.7
	4	57.7	63.3	51.1	63.0	62.7	61.9	61.3	59.0	56.4	52.7	52.1	51.3	57.7	10.0	67.7
	5	60.2	65.3	54.1	65.1	64.8	63.9	63.3	61.4	59.3	55.8	55.0	54.3	60.2	10.0	70.2
	6	60.0	63.8	55.7	63.5	63.3	62.7	62.3	61.0	59.7	56.9	56.4	55.8	60.0	10.0	70.0
Day	7	57.4	61.4	54.4	61.1	60.8	60.2	59.7	58.1	57.0	55.2	54.9	54.5	57.4	0.0	57.4
	8	53.9	62.4	49.0	61.4	60.3	58.3	57.3	54.1	52.2	49.9	49.6	49.2	53.9	0.0	53.9
	9	65.2	71.6	53.7	70.8	70.5	69.4	68.7	66.1	64.5	59.0	56.6	54.6	65.2	0.0	65.2
	10	57.2	64.3	49.3	63.9	63.6	62.8	62.1	59.2	53.0	50.3	49.9	49.4	57.2	0.0	57.2
	11	57.1	65.5	47.5	64.8	63.9	62.2	61.4	58.7	53.8	49.7	49.2	47.8	57.1	0.0	57.1
	12	50.6	57.4	45.4	56.9	56.2	54.9	54.1	51.3	49.4	46.6	46.1	45.6	50.6	0.0	50.6
	13	50.4	57.0	45.3	56.6	56.1	55.1	54.4	50.9	48.8	46.4	45.9	45.4	50.4	0.0	50.4
	14	50.8	57.5	45.2	57.1	56.5	55.3	54.3	51.4	49.5	46.4	45.9	45.3	50.8	0.0	50.8
	15	54.3	63.5	49.3	62.6	61.3	58.7	57.5	54.4	52.4	50.2	49.8	49.4	54.3	0.0	54.3
	16	51.8	59.0	46.5	58.6	58.2	56.9	56.1	51.6	49.7	47.5	47.1	46.6	51.8	0.0	51.8
	17	54.1	60.2	49.4	59.9	59.4	58.3	57.5	54.8	52.7	50.4	50.0	49.6	54.1	0.0	54.1
	18	53.2	59.1	48.9	58.7	58.4	57.6	56.9	53.4	51.9	49.8	49.4	49.0	53.2	0.0	53.2
	19	54.0	59.2	49.4	58.9	58.5	57.7	57.0	54.7	53.3	50.7	50.2	49.6	54.0	5.0	59.0
	20	56.3	62.7	50.3	62.3	61.9	60.8	60.1	57.1	54.7	51.5	51.0	50.5	56.3	5.0	61.3
	21	54.4	60.8	48.9	60.4	59.9	58.7	58.0	55.0	53.2	50.0	49.6	49.0	54.4	5.0	59.4
Night	22	51.6	57.3	46.4	57.0	56.6	55.8	54.9	52.3	50.6	47.7	47.0	46.5	51.6	10.0	61.6
	23	49.6	56.7	44.1	56.3	55.8	54.5	53.4	50.1	47.9	45.1	44.7	44.2	49.6	10.0	59.6

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	50.4	57.0	45.2	56.6	56.1	54.9	54.1	50.9	48.8	46.4	45.9	45.3
	Max	65.2	71.6	54.4	70.8	70.5	69.4	68.7	66.1	64.5	59.0	56.6	54.6
Energy Average		56.9	Average:		60.9	60.4	59.1	58.4	55.4	53.1	50.2	49.7	49.0
Night	Min	46.7	52.8	42.1	52.4	51.8	50.6	49.6	47.5	45.6	43.2	42.8	42.3
	Max	60.2	65.3	55.7	65.1	64.8	63.9	63.3	61.4	59.7	56.9	56.4	55.8
Energy Average		56.5	Average:		60.5	60.0	58.9	58.1	55.3	53.1	50.0	49.4	48.8

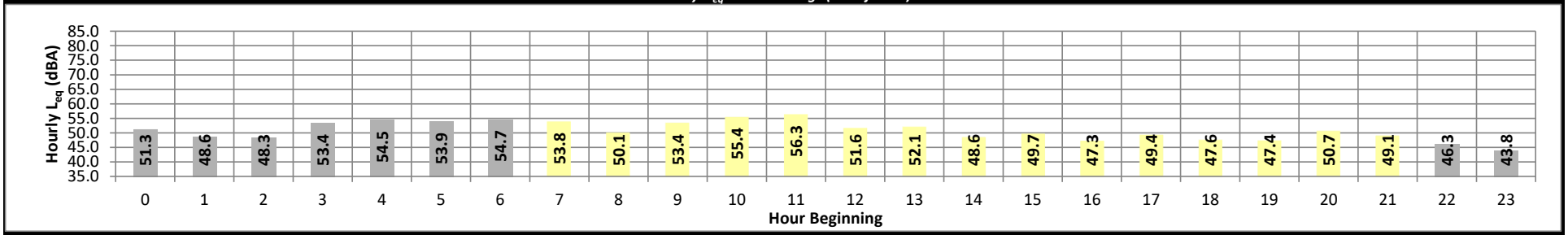
24-Hour	L_{eq} (dBA) Daytime (7am-10pm)	Nighttime (10pm-7am)
56.7	**56.9**	**56.5**

24-Hour Noise Level Measurement Summary

Date: Thursday, October 27, 2022 | *Location:* L3 - Located north of the project site near single-family | *Meter:* Piccolo II | *JN:* 14267

Project: Antelope Valley Commerce Center | *Source:* residence at 42104 6th St E. | *Analyst:* Z. Ibrahim

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	51.3	60.0	47.0	59.5	58.4	55.4	54.1	51.4	49.7	47.6	47.4	47.1	51.3	10.0	61.3
	1	48.6	56.5	42.6	56.0	55.5	54.0	52.5	48.7	46.5	43.6	43.2	42.8	48.6	10.0	58.6
	2	48.3	53.2	44.6	52.8	52.3	51.4	50.9	49.0	47.5	45.5	45.1	44.7	48.3	10.0	58.3
	3	53.4	58.4	49.3	58.1	57.8	56.9	56.4	54.4	52.5	50.1	49.8	49.4	53.4	10.0	63.4
	4	54.5	58.1	50.8	57.8	57.5	57.0	56.7	55.5	54.1	51.9	51.5	51.0	54.5	10.0	64.5
	5	53.9	57.3	51.0	57.1	56.8	56.3	55.9	54.7	53.5	51.7	51.4	51.1	53.9	10.0	63.9
	6	54.7	57.8	52.1	57.5	57.3	56.7	56.5	55.4	54.3	52.7	52.5	52.2	54.7	10.0	64.7
Day	7	53.8	57.6	51.6	57.3	56.9	56.2	55.8	54.3	53.4	52.2	51.9	51.7	53.8	0.0	53.8
	8	50.1	54.5	47.5	54.0	53.4	52.4	52.0	50.8	49.6	48.1	47.9	47.6	50.1	0.0	50.1
	9	53.4	60.3	49.9	59.7	59.0	57.7	56.9	53.6	51.9	50.5	50.3	50.0	53.4	0.0	53.4
	10	55.4	61.8	49.4	61.0	60.0	59.3	59.0	56.8	54.5	50.4	50.1	49.7	55.4	0.0	55.4
	11	56.3	63.8	45.9	63.0	62.4	61.4	60.8	57.7	54.1	48.0	47.4	46.3	56.3	0.0	56.3
	12	51.6	61.7	43.4	61.0	59.8	57.0	55.5	51.9	48.8	45.1	44.5	43.7	51.6	0.0	51.6
	13	52.1	60.0	44.9	59.5	58.8	57.5	56.7	52.8	49.6	46.0	45.6	45.0	52.1	0.0	52.1
	14	48.6	56.1	43.9	55.5	54.7	53.3	52.2	48.9	46.9	44.7	44.4	44.0	48.6	0.0	48.6
	15	49.7	58.8	42.0	58.3	57.7	55.8	54.2	49.7	46.7	43.2	42.8	42.2	49.7	0.0	49.7
	16	47.3	54.4	43.0	54.0	53.4	51.7	50.4	47.8	45.9	43.9	43.6	43.2	47.3	0.0	47.3
	17	49.4	57.8	43.6	57.3	56.1	54.7	53.9	49.6	46.5	44.3	44.1	43.7	49.4	0.0	49.4
	18	47.6	52.0	44.9	51.7	51.2	50.3	49.7	48.2	47.0	45.6	45.3	45.0	47.6	0.0	47.6
	19	47.4	51.6	44.6	51.3	51.0	50.2	49.6	47.8	47.0	45.4	45.0	44.7	47.4	5.0	52.4
	20	50.7	56.0	46.3	55.6	55.2	54.5	54.0	51.7	49.5	47.2	46.8	46.5	50.7	5.0	55.7
	21	49.1	54.5	45.0	54.1	53.6	52.6	51.9	49.9	48.3	45.9	45.5	45.1	49.1	5.0	54.1
Night	22	46.3	51.6	42.5	51.4	51.1	50.4	49.5	46.7	45.3	43.3	43.0	42.6	46.3	10.0	56.3
	23	43.8	49.8	39.6	49.4	49.1	48.2	47.6	44.3	42.5	40.4	40.1	39.7	43.8	10.0	53.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	47.3	51.6	42.0	51.3	51.0	50.2	49.6	47.8	45.9	43.2	42.8	42.2
	Max	56.3	63.8	51.6	63.0	62.4	61.4	60.8	57.7	54.5	52.2	51.9	51.7
Energy Average		51.8	Average:		56.9	56.2	55.0	54.2	51.4	49.3	46.7	46.3	45.9
Night	Min	43.8	49.8	39.6	49.4	49.1	48.2	47.6	44.3	42.5	40.4	40.1	39.7
	Max	54.7	60.0	52.1	59.5	58.4	57.0	56.7	55.5	54.3	52.7	52.5	52.2
Energy Average		51.8	Average:		55.5	55.1	54.0	53.3	51.1	49.5	47.4	47.1	46.7

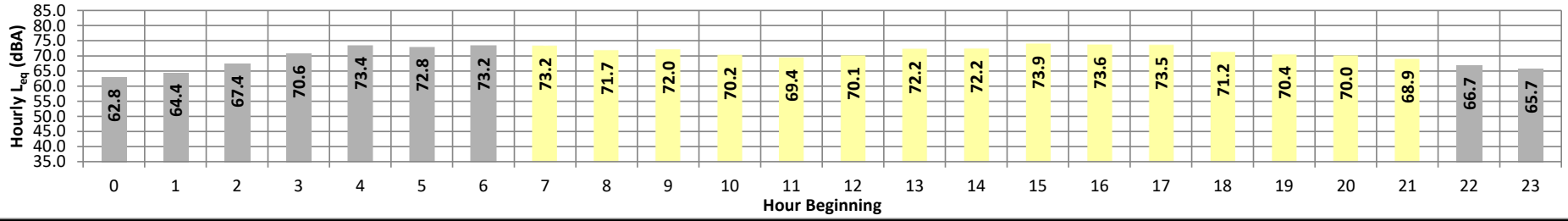
24-Hour	L_{eq} (dBA) Daytime (7am-10pm)	Nighttime (10pm-7am)
51.8	**51.8**	**51.8**

24-Hour Noise Level Measurement Summary

Date: Thursday, October 27, 2022 *Location:* L4 - Located north of the project site near silo at 461 E *Meter:* Piccolo II *JN:* 14267

Project: Antelope Valley Commerce Center *Source:* Columbia Way. *Analyst:* Z. Ibrahim

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	62.8	73.3	46.4	73.0	72.4	69.9	68.3	62.3	55.6	47.7	47.0	46.5	62.8	10.0	72.8
	1	64.4	75.1	47.6	74.7	73.9	71.4	69.7	64.2	57.6	49.3	48.5	47.7	64.4	10.0	74.4
	2	67.4	77.9	54.0	77.4	76.5	73.9	72.1	67.2	63.1	56.6	55.5	54.2	67.4	10.0	77.4
	3	70.6	81.0	56.2	80.7	80.0	77.6	75.6	70.2	65.6	58.0	57.0	56.3	70.6	10.0	80.6
	4	73.4	82.5	59.6	82.1	81.3	78.9	77.5	74.4	70.8	62.6	61.2	60.1	73.4	10.0	83.4
	5	72.8	80.8	60.6	80.5	79.9	78.1	76.8	73.9	70.6	63.6	62.1	60.8	72.8	10.0	82.8
	6	73.2	81.6	60.8	81.1	80.4	78.4	77.2	74.3	71.3	64.1	62.4	60.9	73.2	10.0	83.2
Day	7	73.2	80.0	63.3	79.7	79.1	77.6	76.7	74.5	72.0	66.3	65.0	63.5	73.2	0.0	73.2
	8	71.7	80.0	59.4	79.7	79.0	76.7	75.5	72.7	70.0	62.8	61.3	59.7	71.7	0.0	71.7
	9	72.0	79.9	59.2	79.6	79.0	77.1	76.0	73.0	70.2	64.0	62.3	59.5	72.0	0.0	72.0
	10	70.2	78.4	56.1	78.0	77.3	75.5	74.4	71.4	68.0	59.8	57.8	56.4	70.2	0.0	70.2
	11	69.4	77.4	55.6	77.0	76.4	74.6	73.7	70.5	67.2	59.3	57.6	55.9	69.4	0.0	69.4
	12	70.1	78.9	55.0	78.5	77.9	75.7	74.2	70.9	67.5	59.2	57.2	55.3	70.1	0.0	70.1
	13	72.2	83.3	56.1	82.9	82.0	78.3	75.8	71.8	68.5	60.4	58.3	56.4	72.2	0.0	72.2
	14	72.2	81.5	58.4	81.1	80.2	77.7	76.2	72.8	69.9	62.7	60.7	58.7	72.2	0.0	72.2
	15	73.9	83.9	61.9	83.5	82.6	79.3	77.2	73.9	71.4	66.2	64.3	62.2	73.9	0.0	73.9
	16	73.6	83.8	60.8	83.4	82.4	79.3	77.0	73.6	71.0	65.3	63.4	61.1	73.6	0.0	73.6
	17	73.5	83.8	61.6	83.4	82.4	78.8	76.7	73.5	71.1	65.5	64.0	62.0	73.5	0.0	73.5
	18	71.2	78.8	58.8	78.5	77.9	76.1	75.1	72.3	69.5	62.5	60.7	59.1	71.2	0.0	71.2
	19	70.4	79.5	55.6	79.2	78.4	76.2	74.4	71.1	67.8	59.0	57.2	55.9	70.4	5.0	75.4
	20	70.0	79.6	56.1	79.2	78.4	75.8	74.3	70.7	67.1	59.1	57.7	56.3	70.0	5.0	75.0
	21	68.9	78.6	52.9	78.2	77.3	74.9	73.6	69.6	65.1	55.4	54.1	53.1	68.9	5.0	73.9
Night	22	66.7	76.0	51.2	75.7	74.8	72.8	71.6	67.8	62.6	53.3	52.2	51.4	66.7	10.0	76.7
	23	65.7	76.1	48.3	75.8	75.1	72.9	71.2	65.5	58.5	49.8	49.0	48.4	65.7	10.0	75.7

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	68.9	77.4	52.9	77.0	76.4	74.6	73.6	69.6	65.1	55.4	54.1	53.1
	Max	73.9	83.9	63.3	83.5	82.6	79.3	77.2	74.5	72.0	66.3	65.0	63.5
Energy Average		71.8	Average:		80.1	79.4	76.9	75.4	72.2	69.1	61.8	60.1	58.3
Night	Min	62.8	73.3	46.4	73.0	72.4	69.9	68.3	62.3	55.6	47.7	47.0	46.5
	Max	73.4	82.5	60.8	82.1	81.3	78.9	77.5	74.4	71.3	64.1	62.4	60.9
Energy Average		70.1	Average:		77.9	77.1	74.9	73.3	68.9	64.0	56.1	55.0	54.0

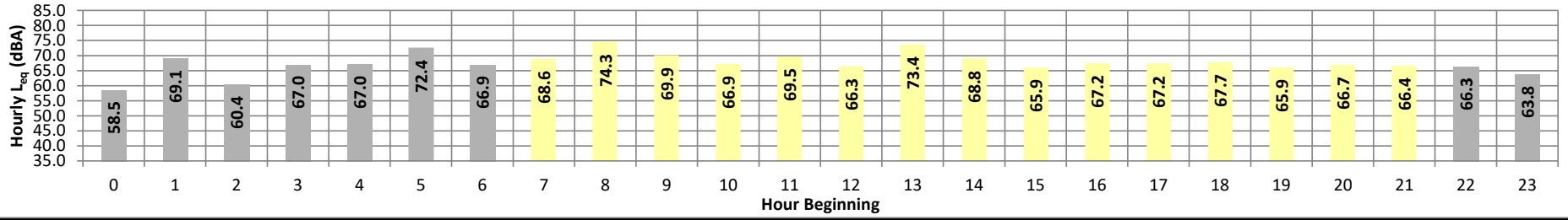
24-Hour	L_{eq} (dBA) Daytime (7am-10pm)	Nighttime (10pm-7am)
71.2	**71.8**	**70.1**

24-Hour Noise Level Measurement Summary

Date: Thursday, October 27, 2022 *Location:* L5 - Located northwest of the project site near gas station at *Meter:* Piccolo II *JN:* 14267

Project: Antelope Valley Commerce Center *Source:* 42011 Sierra Hwy. *Analyst:* Z. Ibrahim

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	58.5	67.1	49.4	66.7	66.1	64.6	63.5	59.2	55.1	50.5	50.0	49.5	58.5	10.0	68.5
	1	69.1	78.7	51.3	78.1	77.6	76.8	76.0	68.5	57.1	52.3	51.8	51.4	69.1	10.0	79.1
	2	60.4	68.2	49.6	67.9	67.3	66.1	65.2	61.4	57.3	51.0	50.3	49.7	60.4	10.0	70.4
	3	67.0	76.4	59.5	75.7	75.0	73.2	71.8	66.7	63.3	60.2	59.8	59.5	67.0	10.0	77.0
	4	67.0	78.7	56.9	78.2	77.0	73.2	71.2	65.4	62.3	58.6	57.8	57.1	67.0	10.0	77.0
	5	72.4	83.2	59.5	83.0	82.7	79.5	77.6	71.1	64.7	60.7	60.2	59.7	72.4	10.0	82.4
	6	66.9	73.9	59.6	73.5	73.0	72.0	71.0	68.1	64.9	60.9	60.2	59.7	66.9	10.0	76.9
Day	7	68.6	77.3	60.0	76.5	75.6	73.7	72.4	69.4	66.6	62.0	61.2	60.5	68.6	0.0	68.6
	8	74.3	84.9	59.8	84.1	82.6	80.2	79.8	74.4	68.4	62.0	61.0	60.1	74.3	0.0	74.3
	9	69.9	79.7	61.0	78.7	77.3	73.8	73.0	70.6	68.5	63.0	62.0	61.3	69.9	0.0	69.9
	10	66.9	74.2	56.5	73.7	73.1	71.7	70.9	68.6	64.6	58.8	57.6	56.6	66.9	0.0	66.9
	11	69.5	80.1	58.1	79.2	78.2	75.3	73.1	69.4	66.6	60.5	59.3	58.3	69.5	0.0	69.5
	12	66.3	75.7	55.1	75.2	74.7	72.2	70.1	66.6	64.0	58.0	56.5	55.3	66.3	0.0	66.3
	13	73.4	85.2	59.2	84.5	83.9	81.6	79.6	70.1	65.1	61.0	60.1	59.3	73.4	0.0	73.4
	14	68.8	81.0	56.9	79.9	78.8	75.4	73.0	67.3	64.4	59.3	58.3	57.2	68.8	0.0	68.8
	15	65.9	73.1	58.4	72.5	71.7	70.2	69.2	67.1	64.5	60.2	59.5	58.7	65.9	0.0	65.9
	16	67.2	76.6	58.3	76.1	75.5	73.5	70.5	67.4	64.9	60.3	59.5	58.6	67.2	0.0	67.2
	17	67.2	76.2	59.4	75.6	74.8	72.4	70.7	67.6	64.9	60.9	60.1	59.6	67.2	0.0	67.2
	18	67.7	75.7	60.7	75.3	74.6	72.3	71.3	68.5	65.8	62.1	61.4	60.9	67.7	0.0	67.7
	19	65.9	75.5	57.0	75.1	74.5	71.7	69.7	66.1	63.0	58.2	57.6	57.1	65.9	5.0	70.9
	20	66.7	77.3	57.5	76.8	75.9	72.7	71.0	66.2	63.1	58.9	58.2	57.6	66.7	5.0	71.7
	21	66.4	77.5	57.0	77.0	76.0	72.5	70.2	66.0	62.4	58.1	57.5	57.1	66.4	5.0	71.4
Night	22	66.3	74.9	62.6	74.1	73.4	71.3	70.0	66.2	64.3	62.9	62.8	62.6	66.3	10.0	76.3
	23	63.8	74.8	56.8	73.7	72.8	69.6	67.9	63.3	60.1	57.3	57.1	56.9	63.8	10.0	73.8

Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%
Day	Min	65.9	73.1	55.1	72.5	71.7	70.2	69.2	66.0	62.4	58.0	56.5	55.3
	Max	74.3	85.2	61.0	84.5	83.9	81.6	79.8	74.4	68.5	63.0	62.0	61.3
Energy Average		69.2	Average:		77.3	76.5	73.9	72.3	68.3	65.1	60.2	59.3	58.5
Night	Min	58.5	67.1	49.4	66.7	66.1	64.6	63.5	59.2	55.1	50.5	50.0	49.5
	Max	72.4	83.2	62.6	83.0	82.7	79.5	77.6	71.1	64.9	62.9	62.8	62.6
Energy Average		67.3	Average:		74.5	73.9	71.8	70.5	65.6	61.0	57.1	56.7	56.2

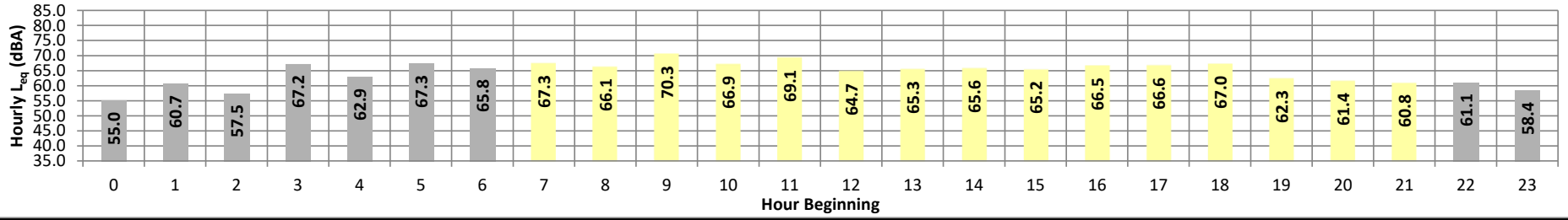
24-Hour	L_{eq} (dBA) Daytime (7am-10pm)	Nighttime (10pm-7am)
68.6	**69.2**	**67.3**

24-Hour Noise Level Measurement Summary

Date: Thursday, October 27, 2022 *Location:* L6 - Located west of the project site near gas retail plaza at *Meter:* Piccolo II *JN:* 14267

Project: Antelope Valley Commerce Center *Source:* 190 Sierra Ct *Analyst:* Z. Ibrahim

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	55.0	62.6	46.3	62.2	61.7	60.3	59.4	56.1	52.5	47.6	47.0	46.5	55.0	10.0	65.0
	1	60.7	67.9	50.1	67.6	67.2	66.1	65.2	62.0	58.4	51.3	50.8	50.2	60.7	10.0	70.7
	2	57.5	67.1	47.3	66.7	66.1	64.0	62.2	57.6	53.1	48.6	48.0	47.4	57.5	10.0	67.5
	3	67.2	75.5	61.2	75.3	75.1	74.4	71.3	66.9	64.4	62.2	61.7	61.3	67.2	10.0	77.2
	4	62.9	70.5	54.9	70.3	69.9	68.6	67.5	63.4	60.6	56.4	55.7	55.1	62.9	10.0	72.9
	5	67.3	74.1	58.1	73.8	73.4	72.2	71.3	68.8	65.0	60.6	59.0	58.3	67.3	10.0	77.3
	6	65.8	71.2	57.8	71.0	70.6	69.6	69.1	67.1	64.9	60.0	58.9	58.0	65.8	10.0	75.8
Day	7	67.3	72.5	60.0	72.2	71.9	71.0	70.4	68.5	66.5	62.4	61.1	60.2	67.3	0.0	67.3
	8	66.1	72.1	58.8	71.7	71.2	69.9	69.3	67.5	65.0	60.6	59.7	59.0	66.1	0.0	66.1
	9	70.3	77.0	56.9	76.3	76.1	75.0	74.4	72.0	69.6	59.0	57.8	57.1	70.3	0.0	70.3
	10	66.9	75.9	55.1	75.4	75.0	74.1	73.3	65.7	61.5	57.1	56.0	55.3	66.9	0.0	66.9
	11	69.1	76.5	57.8	76.0	75.5	74.3	73.5	70.7	66.0	60.8	59.6	58.2	69.1	0.0	69.1
	12	64.7	73.1	57.3	72.7	72.1	70.0	68.7	64.8	62.7	59.0	58.3	57.4	64.7	0.0	64.7
	13	65.3	71.2	59.2	71.0	70.7	69.7	69.0	66.2	64.0	60.8	60.1	59.3	65.3	0.0	65.3
	14	65.6	74.6	58.2	74.1	73.5	71.5	69.7	65.4	63.4	60.1	59.3	58.4	65.6	0.0	65.6
	15	65.2	71.6	58.5	71.2	70.8	69.2	68.1	66.0	64.3	60.5	59.7	58.8	65.2	0.0	65.2
	16	66.5	76.3	59.0	75.7	74.6	71.7	69.8	66.2	64.7	60.9	60.0	59.2	66.5	0.0	66.5
	17	66.6	74.6	60.3	74.2	73.5	71.2	69.7	66.9	65.4	62.1	61.4	60.5	66.6	0.0	66.6
	18	67.0	75.0	60.6	74.7	74.2	72.1	70.7	67.2	65.3	61.9	61.4	60.8	67.0	0.0	67.0
	19	62.3	67.9	55.2	67.7	67.3	66.4	65.7	63.5	61.4	57.1	56.2	55.4	62.3	5.0	67.3
	20	61.4	70.1	50.7	69.6	68.8	66.6	65.4	62.2	59.5	53.2	52.1	50.9	61.4	5.0	66.4
	21	60.8	68.6	49.6	68.1	67.6	66.1	65.0	61.8	58.7	52.2	50.7	49.8	60.8	5.0	65.8
Night	22	61.1	69.7	48.6	69.3	68.7	66.8	66.0	61.6	58.4	51.4	50.1	48.8	61.1	10.0	71.1
	23	58.4	66.3	47.5	65.9	65.4	63.6	62.9	59.6	55.7	49.3	48.3	47.6	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	60.8	67.9	49.6	67.7	67.3	66.1	65.0	61.8	58.7	52.2	50.7	49.8
	Max	70.3	77.0	60.6	76.3	76.1	75.0	74.4	72.0	69.6	62.4	61.4	60.8
Energy Average		66.4	Average:		72.7	72.2	70.6	69.5	66.3	63.9	59.2	58.2	57.3
Night	Min	55.0	62.6	46.3	62.2	61.7	60.3	59.4	56.1	52.5	47.6	47.0	46.5
	Max	67.3	75.5	61.2	75.3	75.1	74.4	71.3	68.8	65.0	62.2	61.7	61.3
Energy Average		63.6	Average:		69.1	68.7	67.3	66.1	62.6	59.2	54.2	53.3	52.6

24-Hour	L_{eq} (dBA) Daytime (7am-10pm)	Nighttime (10pm-7am)
65.5	**66.4**	**63.6**

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CONTOURS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: 10th St. W
Road Segment: n/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,005 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,658 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.63	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-17.66	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-22.16	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	69.5	69.3	66.9	63.2	71.1	71.5
Medium Trucks:	63.1	63.3	58.5	55.9	64.2	64.5
Heavy Trucks:	62.6	62.9	52.6	55.9	63.9	64.0
Vehicle Noise:	71.1	71.0	67.6	64.6	72.5	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	100	216	465	1,001
CNEL:	106	228	491	1,058

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP
Road Name: 10th St. W
Road Segment: n/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,483 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,690 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.44%
Medium Trucks:	81.9%	6.8%	11.3%	1.89%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.54	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-17.66	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-22.16	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	69.6	69.4	66.9	63.3	71.1	71.6
Medium Trucks:	63.1	63.3	58.5	55.9	64.2	64.5
Heavy Trucks:	62.6	62.9	52.6	55.9	63.9	64.0
Vehicle Noise:	71.2	71.1	67.7	64.7	72.6	72.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	101	218	469	1,010
CNEL:	107	230	496	1,068

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025)
Road Name: 10th St. W
Road Segment: n/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,959 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,721 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.47	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-17.50	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-21.99	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	69.7	69.5	67.0	63.4	71.2	71.6
Medium Trucks:	63.3	63.4	58.6	56.1	64.3	64.6
Heavy Trucks:	62.8	63.1	52.7	56.1	64.1	64.2
Vehicle Noise:	71.3	71.2	67.7	64.8	72.7	73.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	103	221	476	1,026
CNEL:	108	234	503	1,085

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025)
Road Name: 10th St. W
Road Segment: n/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,102 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,731 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.40%
Medium Trucks:	81.9%	6.8%	11.3%	1.92%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.44	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-17.50	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-21.99	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	69.7	69.5	67.0	63.4	71.2	71.7
Medium Trucks:	63.3	63.4	58.6	56.1	64.3	64.6
Heavy Trucks:	62.8	63.1	52.7	56.1	64.1	64.2
Vehicle Noise:	71.3	71.2	67.8	64.8	72.7	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	103	222	478	1,029
CNEL:	109	234	505	1,088

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | *Project Name:* Antelope Valley Commerc
Road Name: 10th St. W | *Job Number:* 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,595 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,763 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.36	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-17.39	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-21.89	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	69.8	69.6	67.1	63.5	71.3	71.8
Medium Trucks:	63.4	63.5	58.7	56.2	64.4	64.7
Heavy Trucks:	62.9	63.2	52.8	56.2	64.2	64.3
Vehicle Noise:	71.4	71.3	67.8	64.9	72.8	73.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	104	225	484	1,043
CNEL:	110	237	512	1,102

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | *Project Name:* Antelope Valley Commerc
Road Name: 10th St. W | *Job Number:* 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,073 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,795 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.43%
Medium Trucks:	81.9%	6.8%	11.3%	1.89%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-0.28	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-17.39	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-21.89	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	69.9	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.4	63.5	58.7	56.2	64.4	64.7
Heavy Trucks:	62.9	63.2	52.8	56.2	64.2	64.3
Vehicle Noise:	71.4	71.3	67.9	64.9	72.8	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	105	227	488	1,052
CNEL:	111	240	516	1,112

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | *Project Name:* Antelope Valley Commerc
Road Name: 10th St. W | *Job Number:* 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,948 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,389 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.40	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-18.43	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-22.93	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.8	68.5	66.1	62.5	70.3	70.7
Medium Trucks:	62.4	62.5	57.7	55.2	63.4	63.7
Heavy Trucks:	61.9	62.2	51.8	55.2	63.2	63.3
Vehicle Noise:	70.3	70.2	66.8	63.8	71.7	72.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	89	192	413	889
CNEL:	94	203	436	940

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | *Project Name:* Antelope Valley Commerc
Road Name: 10th St. W | *Job Number:* 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	21,426 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,421 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.45%
Medium Trucks:	81.9%	6.8%	11.3%	1.89%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.30	-0.42	-1.20	*-4.71*	0.000	0.000
Medium Trucks:	82.40	-18.43	-0.40	-1.20	*-4.88*	0.000	0.000
Heavy Trucks:	86.40	-22.93	-0.40	-1.20	*-5.29*	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	*Leq Peak Hour*	*Leq Day*	*Leq Evening*	*Leq Night*	*Ldn*	*CNEL*
Autos:	68.9	68.6	66.2	62.6	70.4	70.8
Medium Trucks:	62.4	62.5	57.7	55.2	63.4	63.7
Heavy Trucks:	61.9	62.2	51.8	55.2	63.2	63.3
Vehicle Noise:	70.4	70.3	66.9	63.9	71.8	72.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	90	194	417	899
CNEL:	95	205	441	951

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: 10th St. W | Job Number: 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,158 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,198 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.44	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-20.93	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	70.5	68.1	64.5	72.3	72.7
Medium Trucks:	64.4	64.5	59.7	57.1	65.4	65.7
Heavy Trucks:	63.9	64.2	53.8	57.2	65.2	65.2
Vehicle Noise:	72.3	72.2	68.8	65.8	73.7	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	561	1,208
CNEL:	128	275	593	1,277

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: 10th St. W | Job Number: 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	33,301 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,208 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.40%
Medium Trucks:	81.9%	6.8%	11.3%	1.92%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.62	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.44	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-20.93	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	70.5	68.1	64.5	72.3	72.7
Medium Trucks:	64.4	64.5	59.7	57.1	65.4	65.7
Heavy Trucks:	63.9	64.2	53.8	57.2	65.2	65.2
Vehicle Noise:	72.3	72.2	68.8	65.9	73.8	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,210
CNEL:	128	276	594	1,280

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: 10th St. W | Job Number: 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,298 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,738 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.55	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.48	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-19.98	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	71.5	69.0	65.4	73.2	73.7
Medium Trucks:	65.3	65.4	60.7	58.1	66.4	66.7
Heavy Trucks:	64.8	65.1	54.8	58.1	66.1	66.2
Vehicle Noise:	73.3	73.2	69.8	66.8	74.7	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	301	649	1,398
CNEL:	148	318	686	1,478

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: 10th St. W | Job Number: 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,776 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,770 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.42%
Medium Trucks:	81.9%	6.8%	11.3%	1.91%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.60	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.48	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-19.98	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	71.5	69.1	65.5	73.3	73.7
Medium Trucks:	65.3	65.4	60.7	58.1	66.4	66.7
Heavy Trucks:	64.8	65.1	54.8	58.1	66.1	66.2
Vehicle Noise:	73.3	73.2	69.8	66.8	74.7	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	653	1,406
CNEL:	149	320	690	1,487

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Sierra Hwy.
Road Segment: n/o Avenue L

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,859 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,582 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.83	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-17.87	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-22.36	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	69.1	66.6	63.0	70.9	71.3
Medium Trucks:	62.9	63.1	58.3	55.7	64.0	64.3
Heavy Trucks:	62.4	62.7	52.4	55.7	63.7	63.8
Vehicle Noise:	70.9	70.8	67.4	64.4	72.3	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	970
CNEL:	103	221	476	1,025

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP
Road Name: Sierra Hwy.
Road Segment: n/o Avenue L

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,790 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,710 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	95.56%
Medium Trucks:	81.9%	6.8%	11.3%	2.11%
Heavy Trucks:	85.3%	2.0%	12.7%	2.33%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.58	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-17.14	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-16.71	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	69.3	66.9	63.3	71.1	71.5
Medium Trucks:	63.7	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	68.1	68.4	58.0	61.4	69.4	69.5
Vehicle Noise:	72.5	72.5	68.0	66.0	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	574	1,238
CNEL:	129	279	601	1,294

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025)
Road Name: Sierra Hwy.
Road Segment: n/o Avenue L

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,234 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,071 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.34	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.70	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.19	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.3	67.8	64.2	72.0	72.4
Medium Trucks:	64.1	64.2	59.4	56.9	65.1	65.4
Heavy Trucks:	63.6	63.9	53.5	56.9	64.9	65.0
Vehicle Noise:	72.1	72.0	68.5	65.6	73.5	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,161
CNEL:	123	264	569	1,227

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025)
Road Name: Sierra Hwy.
Road Segment: n/o Avenue L

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,793 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,108 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.02%
Medium Trucks:	81.9%	6.8%	11.3%	1.96%
Heavy Trucks:	85.3%	2.0%	12.7%	1.02%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.40	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.55	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-19.39	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	70.3	67.9	64.3	72.1	72.5
Medium Trucks:	64.3	64.4	59.6	57.0	65.3	65.6
Heavy Trucks:	65.4	65.7	55.3	58.7	66.7	66.8
Vehicle Noise:	72.4	72.4	68.7	65.9	73.8	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,227
CNEL:	129	279	600	1,293

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: n/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,151 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,397 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.97	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.06	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-20.56	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.9	68.5	64.8	72.7	73.1
Medium Trucks:	64.7	64.9	60.1	57.5	65.8	66.1
Heavy Trucks:	64.2	64.5	54.2	57.5	65.5	65.6
Vehicle Noise:	72.7	72.6	69.2	66.2	74.1	74.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	135	291	628	1,353

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: n/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,082 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,525 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	96.15%
Medium Trucks:	81.9%	6.8%	11.3%	2.05%
Heavy Trucks:	85.3%	2.0%	12.7%	1.80%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.14	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.57	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-16.14	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	71.1	68.6	65.0	72.8	73.3
Medium Trucks:	65.2	65.4	60.6	58.0	66.3	66.6
Heavy Trucks:	68.7	69.0	58.6	62.0	70.0	70.0
Vehicle Noise:	73.8	73.8	69.6	67.3	75.2	75.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	152	327	704	1,517
CNEL:	159	343	739	1,591

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,142 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,866 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.12	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-17.15	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.64	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.8	67.4	63.8	71.6	72.0
Medium Trucks:	63.7	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	63.2	63.5	53.1	56.4	64.5	64.5
Vehicle Noise:	71.6	71.5	68.1	65.1	73.0	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	503	1,083
CNEL:	114	247	531	1,145

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,460 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,020 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	95.88%
Medium Trucks:	81.9%	6.8%	11.3%	2.05%
Heavy Trucks:	85.3%	2.0%	12.7%	2.07%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.16	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.53	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-16.50	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	70.1	67.6	64.0	71.8	72.3
Medium Trucks:	64.3	64.4	59.6	57.1	65.3	65.6
Heavy Trucks:	68.3	68.6	58.2	61.6	69.6	69.7
Vehicle Noise:	73.1	73.0	68.7	66.5	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	290	624	1,345
CNEL:	141	303	654	1,408

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,718 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,368 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.92	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.11	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-20.61	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.8	68.4	64.8	72.6	73.0
Medium Trucks:	64.7	64.8	60.0	57.5	65.7	66.0
Heavy Trucks:	64.2	64.5	54.1	57.5	65.5	65.6
Vehicle Noise:	72.6	72.5	69.1	66.2	74.1	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	273	589	1,269
CNEL:	134	289	623	1,342

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,348 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,410 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.07%
Medium Trucks:	81.9%	6.8%	11.3%	1.95%
Heavy Trucks:	85.3%	2.0%	12.7%	0.97%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.98	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.98	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-19.00	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.9	68.5	64.9	72.7	73.1
Medium Trucks:	64.8	64.9	60.2	57.6	65.9	66.2
Heavy Trucks:	65.8	66.1	55.7	59.1	67.1	67.2
Vehicle Noise:	73.0	72.9	69.3	66.5	74.4	74.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,334
CNEL:	141	303	653	1,406

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,769 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,703 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.49	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.54	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-20.03	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	71.4	69.0	65.4	73.2	73.6
Medium Trucks:	65.3	65.4	60.6	58.0	66.3	66.6
Heavy Trucks:	64.8	65.1	54.7	58.1	66.1	66.1
Vehicle Noise:	73.2	73.1	69.7	66.7	74.6	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	139	299	643	1,386
CNEL:	147	316	680	1,465

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,087 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,857 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	96.32%
Medium Trucks:	81.9%	6.8%	11.3%	2.02%
Heavy Trucks:	85.3%	2.0%	12.7%	1.66%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.69	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.10	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.94	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	71.6	69.2	65.6	73.4	73.8
Medium Trucks:	65.7	65.8	61.0	58.5	66.7	67.0
Heavy Trucks:	68.9	69.2	58.8	62.1	70.2	70.2
Vehicle Noise:	74.3	74.2	70.1	67.7	75.7	76.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	349	753	1,622
CNEL:	170	367	790	1,702

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Sierra Hwy.
Road Segment: s/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,279 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,074 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.34	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.69	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.18	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.3	67.8	64.2	72.0	72.5
Medium Trucks:	64.1	64.2	59.4	56.9	65.1	65.5
Heavy Trucks:	63.6	63.9	53.5	56.9	64.9	65.0
Vehicle Noise:	72.1	72.0	68.6	65.6	73.5	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,162
CNEL:	123	265	570	1,228

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP
Road Name: Sierra Hwy.
Road Segment: s/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	36,120 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,395 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	96.30%
Medium Trucks:	81.9%	6.8%	11.3%	1.90%
Heavy Trucks:	85.3%	2.0%	12.7%	1.80%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.92	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.13	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-16.35	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.8	68.4	64.8	72.6	73.0
Medium Trucks:	64.7	64.8	60.0	57.5	65.7	66.0
Heavy Trucks:	68.4	68.7	58.4	61.7	69.7	69.8
Vehicle Noise:	73.6	73.5	69.4	67.0	75.0	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	146	314	676	1,457
CNEL:	153	329	709	1,529

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025)
Road Name: Sierra Hwy.
Road Segment: s/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	38,490 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,552 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.24	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.79	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-20.28	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	71.2	68.7	65.1	72.9	73.4
Medium Trucks:	65.0	65.1	60.3	57.8	66.0	66.4
Heavy Trucks:	64.5	64.8	54.4	57.8	65.8	65.9
Vehicle Noise:	73.0	72.9	69.5	66.5	74.4	74.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,334
CNEL:	141	304	655	1,410

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025)
Road Name: Sierra Hwy.
Road Segment: s/o Avenue M

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,048 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,655 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.16%
Medium Trucks:	81.9%	6.8%	11.3%	1.91%
Heavy Trucks:	85.3%	2.0%	12.7%	0.93%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.41	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.67	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-18.77	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	71.3	68.9	65.3	73.1	73.5
Medium Trucks:	65.1	65.3	60.5	57.9	66.2	66.5
Heavy Trucks:	66.0	66.3	56.0	59.3	67.3	67.4
Vehicle Noise:	73.3	73.3	69.7	66.9	74.8	75.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,412
CNEL:	149	321	692	1,490

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,297 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,871 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.76	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.28	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-19.77	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	71.7	69.2	65.6	73.4	73.9
Medium Trucks:	65.5	65.6	60.9	58.3	66.6	66.9
Heavy Trucks:	65.0	65.3	55.0	58.3	66.3	66.4
Vehicle Noise:	73.5	73.4	70.0	67.0	74.9	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	144	311	670	1,443
CNEL:	153	329	708	1,525

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	48,138 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,192 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	96.57%
Medium Trucks:	81.9%	6.8%	11.3%	1.91%
Heavy Trucks:	85.3%	2.0%	12.7%	1.52%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.18	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-14.86	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.84	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	72.1	69.7	66.1	73.9	74.3
Medium Trucks:	65.9	66.1	61.3	58.7	67.0	67.3
Heavy Trucks:	69.0	69.3	58.9	62.3	70.3	70.3
Vehicle Noise:	74.6	74.6	70.6	68.1	76.0	76.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	369	795	1,712
CNEL:	180	388	835	1,799

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue N

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,732 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,634 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.38	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.65	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-20.15	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	71.3	68.9	65.3	73.1	73.5
Medium Trucks:	65.2	65.3	60.5	57.9	66.2	66.5
Heavy Trucks:	64.6	65.0	54.6	57.9	65.9	66.0
Vehicle Noise:	73.1	73.0	69.6	66.6	74.5	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	294	633	1,363
CNEL:	144	310	669	1,440

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue N

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	41,390 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,744 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	96.23%
Medium Trucks:	81.9%	6.8%	11.3%	2.05%
Heavy Trucks:	85.3%	2.0%	12.7%	1.71%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.51	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.20	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.98	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	71.4	69.0	65.4	73.2	73.6
Medium Trucks:	65.6	65.7	60.9	58.4	66.6	66.9
Heavy Trucks:	68.8	69.1	58.7	62.1	70.1	70.2
Vehicle Noise:	74.1	74.1	70.0	67.6	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	738	1,590
CNEL:	167	359	774	1,668

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue N

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,046 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,119 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.12	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-14.92	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-19.41	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	72.0	69.6	66.0	73.8	74.2
Medium Trucks:	65.9	66.0	61.2	58.7	66.9	67.2
Heavy Trucks:	65.4	65.7	55.3	58.7	66.7	66.8
Vehicle Noise:	73.8	73.7	70.3	67.4	75.3	75.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	329	708	1,525
CNEL:	161	347	748	1,612

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue N

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	47,533 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,151 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.14%
Medium Trucks:	81.9%	6.8%	11.3%	1.95%
Heavy Trucks:	85.3%	2.0%	12.7%	0.91%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.15	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-14.82	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-18.14	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	72.1	69.6	66.0	73.8	74.3
Medium Trucks:	66.0	66.1	61.3	58.8	67.0	67.3
Heavy Trucks:	66.7	67.0	56.6	59.9	68.0	68.0
Vehicle Noise:	74.1	74.0	70.4	67.6	75.5	75.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	341	734	1,582
CNEL:	167	360	775	1,669

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue N

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	51,922 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,442 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.54	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-14.49	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-18.98	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	72.5	70.0	66.4	74.2	74.7
Medium Trucks:	66.3	66.4	61.6	59.1	67.3	67.7
Heavy Trucks:	65.8	66.1	55.7	59.1	67.1	67.2
Vehicle Noise:	74.3	74.2	70.8	67.8	75.7	76.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	756	1,629
CNEL:	172	371	799	1,722

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Sierra Hwy. | Job Number: 14267
Road Segment: s/o Avenue N

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,580 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,552 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	96.50%
Medium Trucks:	81.9%	6.8%	11.3%	2.02%
Heavy Trucks:	85.3%	2.0%	12.7%	1.48%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.64	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-14.14	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-15.50	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	72.6	70.1	66.5	74.3	74.8
Medium Trucks:	66.7	66.8	62.0	59.4	67.7	68.0
Heavy Trucks:	69.3	69.6	59.2	62.6	70.6	70.7
Vehicle Noise:	75.1	75.0	71.0	68.6	76.5	76.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	184	396	853	1,838
CNEL:	193	416	897	1,932

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Challenger Wy.
Road Segment: n/o Avenue L
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,253 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,144 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-2.24	1.55	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-19.27	1.59	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-23.77	1.59	-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:	69.9	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.5	63.6	58.9	56.3	64.6	64.9
Heavy Trucks:	63.0	63.3	53.0	56.3	64.3	64.4
Vehicle Noise:	71.5	71.4	67.9	65.0	72.9	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	81	174	376	810
CNEL:	86	184	397	856

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP
Road Name: Challenger Wy.
Road Segment: n/o Avenue L
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,254 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,210 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.53%
Medium Trucks:	81.9%	6.8%	11.3%	1.82%
Heavy Trucks:	85.3%	2.0%	12.7%	0.65%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-1.99	1.55	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-19.27	1.59	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-23.77	1.59	-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	69.9	67.5	63.9	71.7	72.1
Medium Trucks:	63.5	63.6	58.9	56.3	64.6	64.9
Heavy Trucks:	63.0	63.3	53.0	56.3	64.3	64.4
Vehicle Noise:	71.6	71.5	68.2	65.2	73.1	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	83	179	386	832
CNEL:	88	190	409	880

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025)
Road Name: Challenger Wy.
Road Segment: n/o Avenue L
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,361 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,151 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-2.21	1.55	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-19.25	1.59	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-23.74	1.59	-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:	69.9	69.7	67.2	63.6	71.4	71.9
Medium Trucks:	63.5	63.7	58.9	56.3	64.6	64.9
Heavy Trucks:	63.0	63.3	53.0	56.3	64.3	64.4
Vehicle Noise:	71.5	71.4	68.0	65.0	72.9	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	81	175	377	813
CNEL:	86	185	399	859

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025)
Road Name: Challenger Wy.
Road Segment: n/o Avenue L
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,647 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,170 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.43%
Medium Trucks:	81.9%	6.8%	11.3%	1.90%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-2.14	1.55	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-19.25	1.59	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-23.74	1.59	-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	69.7	67.3	63.7	71.5	71.9
Medium Trucks:	63.5	63.7	58.9	56.3	64.6	64.9
Heavy Trucks:	63.0	63.3	53.0	56.3	64.3	64.4
Vehicle Noise:	71.5	71.4	68.0	65.1	73.0	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	82	177	380	820
CNEL:	87	187	402	866

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: n/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	17,433 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,156 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.20	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-19.23	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-23.72	1.59	-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:	69.9	69.7	67.3	63.7	71.5	71.9
Medium Trucks:	63.6	63.7	58.9	56.3	64.6	64.9
Heavy Trucks:	63.1	63.4	53.0	56.4	64.4	64.4
Vehicle Noise:	71.5	71.4	68.0	65.0	72.9	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	378	815
CNEL:	86	186	400	862

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: n/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,434 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,222 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.53%
Medium Trucks:	81.9%	6.8%	11.3%	1.82%
Heavy Trucks:	85.3%	2.0%	12.7%	0.65%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.95	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-19.23	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-23.72	1.59	-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	69.9	67.5	63.9	71.7	72.1
Medium Trucks:	63.6	63.7	58.9	56.3	64.6	64.9
Heavy Trucks:	63.1	63.4	53.0	56.4	64.4	64.4
Vehicle Noise:	71.7	71.6	68.2	65.2	73.1	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	89	191	411	886

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,501 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	630 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.83	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.86	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.36	1.59	-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:	67.3	67.1	64.6	61.0	68.8	69.3
Medium Trucks:	60.9	61.1	56.3	53.7	62.0	62.3
Heavy Trucks:	60.4	60.7	50.4	53.7	61.7	61.8
Vehicle Noise:	68.9	68.8	65.4	62.4	70.3	70.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	544
CNEL:	57	124	267	575

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,935 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	725 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.73%
Medium Trucks:	81.9%	6.8%	11.3%	1.68%
Heavy Trucks:	85.3%	2.0%	12.7%	0.60%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.21	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.86	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.36	1.59	-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:	67.9	67.7	65.3	61.6	69.5	69.9
Medium Trucks:	60.9	61.1	56.3	53.7	62.0	62.3
Heavy Trucks:	60.4	60.7	50.4	53.7	61.7	61.8
Vehicle Noise:	69.3	69.2	65.9	62.9	70.7	71.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	583
CNEL:	62	133	286	617

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,636 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	639 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.77	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.80	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.30	1.59	-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:	67.4	67.1	64.7	61.1	68.9	69.3
Medium Trucks:	61.0	61.1	56.3	53.8	62.0	62.3
Heavy Trucks:	60.5	60.8	50.4	53.8	61.8	61.9
Vehicle Noise:	68.9	68.8	65.4	62.5	70.4	70.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	58	125	269	580

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,993 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	663 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.48%
Medium Trucks:	81.9%	6.8%	11.3%	1.86%
Heavy Trucks:	85.3%	2.0%	12.7%	0.66%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.61	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.80	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.30	1.59	-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:	67.5	67.3	64.8	61.2	69.1	69.5
Medium Trucks:	61.0	61.1	56.3	53.8	62.0	62.3
Heavy Trucks:	60.5	60.8	50.4	53.8	61.8	61.9
Vehicle Noise:	69.0	68.9	65.6	62.6	70.5	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	559
CNEL:	59	127	274	591

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,725 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	645 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.73	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.76	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.26	1.59	-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:	67.4	67.2	64.7	61.1	68.9	69.4
Medium Trucks:	61.0	61.2	56.4	53.8	62.1	62.4
Heavy Trucks:	60.5	60.8	50.5	53.8	61.8	61.9
Vehicle Noise:	69.0	68.9	65.5	62.5	70.4	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	552
CNEL:	58	126	271	584

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Challenger Wy. | Job Number: 14267
Road Segment: s/o Avenue L

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,159 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	740 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.72%
Medium Trucks:	81.9%	6.8%	11.3%	1.68%
Heavy Trucks:	85.3%	2.0%	12.7%	0.60%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.12	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.76	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.26	1.59	-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:	68.0	67.8	65.3	61.7	69.5	70.0
Medium Trucks:	61.0	61.2	56.4	53.8	62.1	62.4
Heavy Trucks:	60.5	60.8	50.5	53.8	61.8	61.9
Vehicle Noise:	69.4	69.3	66.0	62.9	70.8	71.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	275	592
CNEL:	63	135	291	626

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: 20th St. | Job Number: 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,199 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	411 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.69	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-23.72	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-28.21	1.59	-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	65.2	62.8	59.2	67.0	67.4
Medium Trucks:	59.1	59.2	54.4	51.9	60.1	60.4
Heavy Trucks:	58.6	58.9	48.5	51.9	59.9	60.0
Vehicle Noise:	67.0	66.9	63.5	60.5	68.4	68.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	409
CNEL:	43	93	201	432

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: 20th St. | Job Number: 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,722 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	446 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.59%
Medium Trucks:	81.9%	6.8%	11.3%	1.78%
Heavy Trucks:	85.3%	2.0%	12.7%	0.63%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.32	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-23.72	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-28.21	1.59	-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:	65.8	65.6	63.1	59.5	67.3	67.8
Medium Trucks:	59.1	59.2	54.4	51.9	60.1	60.4
Heavy Trucks:	58.6	58.9	48.5	51.9	59.9	60.0
Vehicle Noise:	67.3	67.2	63.8	60.8	68.7	69.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	198	426
CNEL:	45	97	209	450

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: 20th St. | Job Number: 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,199 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	411 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.69	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-23.72	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-28.21	1.59	-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	65.2	62.8	59.2	67.0	67.4
Medium Trucks:	59.1	59.2	54.4	51.9	60.1	60.4
Heavy Trucks:	58.6	58.9	48.5	51.9	59.9	60.0
Vehicle Noise:	67.0	66.9	63.5	60.5	68.4	68.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	409
CNEL:	43	93	201	432

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: 20th St. | Job Number: 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,341 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	420 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.45%
Medium Trucks:	81.9%	6.8%	11.3%	1.88%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.58	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-23.72	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-28.21	1.59	-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:	65.5	65.3	62.9	59.3	67.1	67.5
Medium Trucks:	59.1	59.2	54.4	51.9	60.1	60.4
Heavy Trucks:	58.6	58.9	48.5	51.9	59.9	60.0
Vehicle Noise:	67.1	67.0	63.6	60.6	68.5	68.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	94	203	437

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: 20th St. | Job Number: 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,199 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	411 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.69	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-23.72	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-28.21	1.59	-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	65.2	62.8	59.2	67.0	67.4
Medium Trucks:	59.1	59.2	54.4	51.9	60.1	60.4
Heavy Trucks:	58.6	58.9	48.5	51.9	59.9	60.0
Vehicle Noise:	67.0	66.9	63.5	60.5	68.4	68.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	409
CNEL:	43	93	201	432

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: 20th St. | Job Number: 14267
Road Segment: n/o Avenue M

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	6,722 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	446 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.59%
Medium Trucks:	81.9%	6.8%	11.3%	1.78%
Heavy Trucks:	85.3%	2.0%	12.7%	0.63%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.32	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-23.72	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-28.21	1.59	-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:	65.8	65.6	63.1	59.5	67.3	67.8
Medium Trucks:	59.1	59.2	54.4	51.9	60.1	60.4
Heavy Trucks:	58.6	58.9	48.5	51.9	59.9	60.0
Vehicle Noise:	67.3	67.2	63.8	60.8	68.7	69.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	198	426
CNEL:	45	97	209	450

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	18,626 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,235 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.49	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-18.53	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-23.02	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.8	64.4	60.8	68.6	69.0
Medium Trucks:	60.9	61.0	56.2	53.7	61.9	62.2
Heavy Trucks:	60.8	61.1	50.7	54.0	62.1	62.1
Vehicle Noise:	68.8	68.7	65.2	62.3	70.2	70.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	699
CNEL:	74	159	343	739

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,149 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,270 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.46%
Medium Trucks:	81.9%	6.8%	11.3%	1.88%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.37	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-18.53	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-23.02	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	67.0	64.5	60.9	68.7	69.2
Medium Trucks:	60.9	61.0	56.2	53.7	61.9	62.2
Heavy Trucks:	60.8	61.1	50.7	54.0	62.1	62.1
Vehicle Noise:	68.9	68.8	65.3	62.4	70.3	70.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	709
CNEL:	75	161	347	749

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,259 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,277 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.35	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-18.38	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-22.88	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	67.0	64.6	60.9	68.8	69.2
Medium Trucks:	61.0	61.1	56.4	53.8	62.1	62.4
Heavy Trucks:	60.9	61.2	50.8	54.2	62.2	62.3
Vehicle Noise:	68.9	68.8	65.3	62.4	70.3	70.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	154	332	715
CNEL:	76	163	351	755

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,402 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,286 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.41%
Medium Trucks:	81.9%	6.8%	11.3%	1.91%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.32	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-18.38	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-22.88	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	67.0	64.6	61.0	68.8	69.2
Medium Trucks:	61.0	61.1	56.4	53.8	62.1	62.4
Heavy Trucks:	60.9	61.2	50.8	54.2	62.2	62.3
Vehicle Noise:	68.9	68.8	65.4	62.4	70.4	70.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	333	718
CNEL:	76	163	352	758

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,682 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,305 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.25	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-18.29	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-22.78	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	67.1	64.7	61.0	68.9	69.3
Medium Trucks:	61.1	61.2	56.4	53.9	62.1	62.5
Heavy Trucks:	61.0	61.3	50.9	54.3	62.3	62.4
Vehicle Noise:	69.0	68.9	65.4	62.5	70.4	70.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	156	337	725
CNEL:	77	165	356	766

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	20,205 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,340 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.45%
Medium Trucks:	81.9%	6.8%	11.3%	1.88%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.14	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-18.29	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-22.78	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	67.2	64.8	61.2	69.0	69.4
Medium Trucks:	61.1	61.2	56.4	53.9	62.1	62.5
Heavy Trucks:	61.0	61.3	50.9	54.3	62.3	62.4
Vehicle Noise:	69.1	69.0	65.5	62.6	70.5	70.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	735
CNEL:	78	167	360	776

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E
Road Name: Avenue M
Road Segment: e/o SR-14 NB Ramps
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,234 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,071 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-16.28	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-20.78	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	69.1	66.7	63.0	70.9	71.3
Medium Trucks:	63.1	63.2	58.5	55.9	64.2	64.5
Heavy Trucks:	63.0	63.3	52.9	56.3	64.3	64.4
Vehicle Noise:	71.0	70.9	67.4	64.5	72.4	72.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	458	987
CNEL:	104	225	484	1,043

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP
Road Name: Avenue M
Road Segment: e/o SR-14 NB Ramps
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,057 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,054 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	92.95%
Medium Trucks:	81.9%	6.8%	11.3%	2.15%
Heavy Trucks:	85.3%	2.0%	12.7%	4.90%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.24	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-14.12	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.55	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	70.6	68.1	64.5	72.3	72.8
Medium Trucks:	65.3	65.4	60.6	58.1	66.3	66.6
Heavy Trucks:	73.2	73.5	63.2	66.5	74.5	74.6
Vehicle Noise:	75.6	75.7	69.9	69.0	77.0	77.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	198	427	921	1,984
CNEL:	205	442	953	2,053

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025)
Road Name: Avenue M
Road Segment: e/o SR-14 NB Ramps
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	40,650 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,695 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.90	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-15.14	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.63	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.2	67.8	64.2	72.0	72.4
Medium Trucks:	64.3	64.4	59.6	57.0	65.3	65.6
Heavy Trucks:	64.1	64.4	54.1	57.4	65.4	65.5
Vehicle Noise:	72.2	72.1	68.6	65.7	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	253	546	1,177
CNEL:	124	268	577	1,243

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025)
Road Name: Avenue M
Road Segment: e/o SR-14 NB Ramps
Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	45,327 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,005 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	96.31%
Medium Trucks:	81.9%	6.8%	11.3%	1.94%
Heavy Trucks:	85.3%	2.0%	12.7%	1.74%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.32	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-14.63	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-15.10	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	70.7	68.2	64.6	72.4	72.9
Medium Trucks:	64.8	64.9	60.1	57.6	65.8	66.1
Heavy Trucks:	68.7	69.0	58.6	62.0	70.0	70.1
Vehicle Noise:	73.6	73.5	69.2	67.0	74.9	75.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	313	675	1,453
CNEL:	152	328	707	1,523

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	46,928 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,111 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.52	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-19.01	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.9	68.4	64.8	72.6	73.1
Medium Trucks:	64.9	65.0	60.2	57.7	65.9	66.2
Heavy Trucks:	64.8	65.1	54.7	58.1	66.1	66.2
Vehicle Noise:	72.8	72.7	69.2	66.3	74.2	74.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	601	1,295
CNEL:	137	295	635	1,368

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	61,751 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	4,094 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	94.08%
Medium Trucks:	81.9%	6.8%	11.3%	2.09%
Heavy Trucks:	85.3%	2.0%	12.7%	3.83%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.56	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	81.00	-12.96	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	85.38	-10.35	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.9	69.5	65.9	73.7	74.1
Medium Trucks:	66.4	66.6	61.8	59.2	67.5	67.8
Heavy Trucks:	73.4	73.7	63.4	66.7	74.7	74.8
Vehicle Noise:	76.3	76.4	71.0	69.7	77.7	77.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	476	1,026	2,210
CNEL:	229	494	1,065	2,295

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,829 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,580 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.84	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-17.87	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-22.37	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	69.1	66.6	63.0	70.9	71.3
Medium Trucks:	62.9	63.1	58.3	55.7	64.0	64.3
Heavy Trucks:	62.4	62.7	52.4	55.7	63.7	63.8
Vehicle Noise:	70.9	70.8	67.4	64.4	72.3	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	969
CNEL:	102	221	475	1,024

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	39,607 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,626 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	92.29%
Medium Trucks:	81.9%	6.8%	11.3%	2.14%
Heavy Trucks:	85.3%	2.0%	12.7%	5.57%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.14	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.21	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-11.06	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	71.1	68.6	65.0	72.8	73.2
Medium Trucks:	65.6	65.7	60.9	58.4	66.6	66.9
Heavy Trucks:	73.7	74.0	63.7	67.0	75.0	75.1
Vehicle Noise:	76.1	76.2	70.4	69.5	77.5	77.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	214	460	991	2,135
CNEL:	221	476	1,025	2,209

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,882 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,782 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.31	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-17.35	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.84	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.5	63.6	58.8	56.2	64.5	64.8
Heavy Trucks:	63.0	63.3	52.9	56.2	64.3	64.3
Vehicle Noise:	71.4	71.3	67.9	64.9	72.8	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,050
CNEL:	111	239	515	1,110

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,844 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,111 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	95.88%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	2.18%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.60	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-16.07	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.3	67.8	64.2	72.0	72.5
Medium Trucks:	64.2	64.3	59.5	57.0	65.2	65.5
Heavy Trucks:	68.7	69.0	58.7	62.0	70.0	70.1
Vehicle Noise:	73.3	73.3	68.9	66.8	74.7	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	301	648	1,396
CNEL:	146	315	678	1,461

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,917 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,917 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.00	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-17.03	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.53	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.9	67.5	63.9	71.7	72.1
Medium Trucks:	63.8	63.9	59.1	56.6	64.8	65.1
Heavy Trucks:	63.3	63.6	53.2	56.6	64.6	64.7
Vehicle Noise:	71.7	71.6	68.2	65.2	73.1	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	512	1,103
CNEL:	117	251	541	1,165

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: w/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	44,695 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,963 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	92.87%
Medium Trucks:	81.9%	6.8%	11.3%	2.12%
Heavy Trucks:	85.3%	2.0%	12.7%	5.01%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.69	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-14.73	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-10.99	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	71.6	69.2	65.6	73.4	73.8
Medium Trucks:	66.1	66.2	61.4	58.9	67.1	67.4
Heavy Trucks:	73.8	74.1	63.7	67.1	75.1	75.2
Vehicle Noise:	76.4	76.5	70.8	69.8	77.7	78.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	223	480	1,034	2,227
CNEL:	231	497	1,071	2,308

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	29,575 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,961 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.10	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.93	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.43	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	70.0	67.6	64.0	71.8	72.2
Medium Trucks:	63.9	64.0	59.2	56.7	64.9	65.2
Heavy Trucks:	63.4	63.7	53.3	56.7	64.7	64.8
Vehicle Noise:	71.8	71.7	68.3	65.3	73.2	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	520	1,119
CNEL:	118	255	549	1,183

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	52,444 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,477 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	91.91%
Medium Trucks:	81.9%	6.8%	11.3%	2.15%
Heavy Trucks:	85.3%	2.0%	12.7%	5.95%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.34	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-13.98	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.55	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	72.3	69.8	66.2	74.0	74.4
Medium Trucks:	66.8	66.9	62.2	59.6	67.9	68.2
Heavy Trucks:	75.2	75.5	65.2	68.5	76.5	76.6
Vehicle Noise:	77.5	77.6	71.6	70.9	78.8	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	264	569	1,225	2,639
CNEL:	273	588	1,267	2,729

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,332 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,011 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.21	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.82	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.32	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	70.1	67.7	64.1	71.9	72.3
Medium Trucks:	64.0	64.1	59.3	56.8	65.0	65.3
Heavy Trucks:	63.5	63.8	53.4	56.8	64.8	64.9
Vehicle Noise:	71.9	71.8	68.4	65.5	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,138
CNEL:	120	259	558	1,203

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	37,482 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,485 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	95.56%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	2.50%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.05	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-15.90	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-14.77	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	71.0	68.5	64.9	72.7	73.2
Medium Trucks:	64.9	65.0	60.2	57.7	65.9	66.2
Heavy Trucks:	70.0	70.3	60.0	63.3	71.3	71.4
Vehicle Noise:	74.2	74.2	69.6	67.7	75.6	75.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	346	745	1,605
CNEL:	168	361	779	1,678

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,837 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,044 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.28	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.75	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.25	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	70.2	67.8	64.2	72.0	72.4
Medium Trucks:	64.1	64.2	59.4	56.8	65.1	65.4
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	72.0	71.9	68.5	65.5	73.4	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	122	262	565	1,217

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Sierra Hwy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	53,706 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	3,561 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	92.03%
Medium Trucks:	81.9%	6.8%	11.3%	2.14%
Heavy Trucks:	85.3%	2.0%	12.7%	5.82%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.45	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-13.89	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-9.54	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	72.4	69.9	66.3	74.1	74.6
Medium Trucks:	66.9	67.0	62.3	59.7	68.0	68.3
Heavy Trucks:	75.3	75.6	65.2	68.5	76.6	76.6
Vehicle Noise:	77.5	77.7	71.7	70.9	78.9	79.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	266	573	1,235	2,660
CNEL:	275	593	1,277	2,751

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o 4th St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	30,721 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,037 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.27	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.77	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.26	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	70.2	67.7	64.1	72.0	72.4
Medium Trucks:	64.0	64.2	59.4	56.8	65.1	65.4
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	72.0	71.9	68.5	65.5	73.4	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	533	1,148
CNEL:	121	261	563	1,213

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o 4th St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	42,614 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,825 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	98.12%
Medium Trucks:	81.9%	6.8%	11.3%	1.39%
Heavy Trucks:	85.3%	2.0%	12.7%	0.49%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.72	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.77	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.26	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	71.6	69.2	65.6	73.4	73.8
Medium Trucks:	64.0	64.2	59.4	56.8	65.1	65.4
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	73.1	72.9	69.7	66.6	74.5	74.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	630	1,356
CNEL:	144	310	667	1,437

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o 4th St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,424 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,083 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.36	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.67	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.16	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.3	67.8	64.2	72.1	72.5
Medium Trucks:	64.1	64.3	59.5	56.9	65.2	65.5
Heavy Trucks:	63.6	63.9	53.6	56.9	64.9	65.0
Vehicle Noise:	72.1	72.0	68.6	65.6	73.5	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	251	541	1,165
CNEL:	123	265	572	1,232

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o 4th St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	35,349 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,344 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.68%
Medium Trucks:	81.9%	6.8%	11.3%	1.71%
Heavy Trucks:	85.3%	2.0%	12.7%	0.61%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.89	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.67	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.16	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.8	68.4	64.8	72.6	73.0
Medium Trucks:	64.1	64.3	59.5	56.9	65.2	65.5
Heavy Trucks:	63.6	63.9	53.6	56.9	64.9	65.0
Vehicle Noise:	72.5	72.3	69.0	66.0	73.9	74.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	574	1,236
CNEL:	131	282	607	1,307

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o 4th St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	31,893 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,115 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.43	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.61	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.10	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	70.3	67.9	64.3	72.1	72.5
Medium Trucks:	64.2	64.3	59.5	57.0	65.2	65.5
Heavy Trucks:	63.7	64.0	53.6	57.0	65.0	65.1
Vehicle Noise:	72.2	72.1	68.6	65.7	73.6	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	254	546	1,177
CNEL:	124	268	577	1,244

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o 4th St.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	43,786 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	2,903 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	98.10%
Medium Trucks:	81.9%	6.8%	11.3%	1.40%
Heavy Trucks:	85.3%	2.0%	12.7%	0.50%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.84	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	82.40	-16.61	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	86.40	-21.10	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.8	69.3	65.7	73.5	73.9
Medium Trucks:	64.2	64.3	59.5	57.0	65.2	65.5
Heavy Trucks:	63.7	64.0	53.6	57.0	65.0	65.1
Vehicle Noise:	73.2	73.1	69.9	66.7	74.6	75.0

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	298	642	1,383
CNEL:	146	316	680	1,465

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Challenger Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,272 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,742 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-0.79	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-17.83	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.32	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	70.6	68.1	64.5	72.3	72.8
Medium Trucks:	64.3	64.4	59.6	57.0	65.3	65.6
Heavy Trucks:	63.4	63.7	53.3	56.7	64.7	64.8
Vehicle Noise:	72.3	72.2	68.8	65.8	73.7	74.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	557	1,201
CNEL:	127	274	589	1,270

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Challenger Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,523 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,825 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.51%
Medium Trucks:	81.9%	6.8%	11.3%	1.84%
Heavy Trucks:	85.3%	2.0%	12.7%	0.65%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-0.58	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-17.83	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.32	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.8	68.3	64.7	72.5	73.0
Medium Trucks:	64.3	64.4	59.6	57.0	65.3	65.6
Heavy Trucks:	63.4	63.7	53.3	56.7	64.7	64.8
Vehicle Noise:	72.4	72.3	69.0	66.0	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	570	1,229
CNEL:	130	280	604	1,300

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Challenger Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	26,841 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,780 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-0.70	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-17.73	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.23	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	70.7	68.2	64.6	72.4	72.9
Medium Trucks:	64.4	64.5	59.7	57.1	65.4	65.7
Heavy Trucks:	63.5	63.8	53.4	56.8	64.8	64.9
Vehicle Noise:	72.4	72.3	68.9	65.9	73.8	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,218
CNEL:	129	278	598	1,288

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Challenger Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,198 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,803 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.42%
Medium Trucks:	81.9%	6.8%	11.3%	1.90%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-0.64	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-17.73	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.23	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.7	68.3	64.7	72.5	72.9
Medium Trucks:	64.4	64.5	59.7	57.1	65.4	65.7
Heavy Trucks:	63.5	63.8	53.4	56.8	64.8	64.9
Vehicle Noise:	72.4	72.3	69.0	65.9	73.8	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,226
CNEL:	130	279	602	1,297

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Challenger Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	27,220 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,805 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-0.64	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-17.67	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.17	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.7	68.3	64.7	72.5	72.9
Medium Trucks:	64.4	64.5	59.7	57.2	65.4	65.8
Heavy Trucks:	63.6	63.9	53.5	56.9	64.9	64.9
Vehicle Noise:	72.4	72.3	69.0	66.0	73.9	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	571	1,229
CNEL:	130	280	604	1,300

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Challenger Wy.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,471 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,888 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.50%
Medium Trucks:	81.9%	6.8%	11.3%	1.84%
Heavy Trucks:	85.3%	2.0%	12.7%	0.65%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-0.44	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-17.67	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.17	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.9	68.5	64.9	72.7	73.1
Medium Trucks:	64.4	64.5	59.7	57.2	65.4	65.8
Heavy Trucks:	63.6	63.9	53.5	56.9	64.9	64.9
Vehicle Noise:	72.6	72.5	69.1	66.1	74.0	74.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	584	1,257
CNEL:	133	287	618	1,330

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Site 2 Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,587 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,564 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-1.26	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-18.29	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.79	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	70.1	67.7	64.1	71.9	72.3
Medium Trucks:	63.8	63.9	59.1	56.6	64.8	65.1
Heavy Trucks:	62.9	63.2	52.9	56.2	64.2	64.3
Vehicle Noise:	71.8	71.7	68.4	65.3	73.2	73.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	519	1,117
CNEL:	118	255	549	1,182

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Site 2 Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,315 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,612 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.47%
Medium Trucks:	81.9%	6.8%	11.3%	1.87%
Heavy Trucks:	85.3%	2.0%	12.7%	0.66%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-1.12	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-18.29	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.79	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.2	67.8	64.2	72.0	72.4
Medium Trucks:	63.8	63.9	59.1	56.6	64.8	65.1
Heavy Trucks:	62.9	63.2	52.9	56.2	64.2	64.3
Vehicle Noise:	71.9	71.8	68.5	65.4	73.3	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	527	1,135
CNEL:	120	259	557	1,200

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Site 2 Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,156 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,602 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-1.16	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-18.19	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.68	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	70.2	67.8	64.2	72.0	72.4
Medium Trucks:	63.9	64.0	59.2	56.7	64.9	65.2
Heavy Trucks:	63.0	63.3	53.0	56.3	64.3	64.4
Vehicle Noise:	71.9	71.8	68.5	65.4	73.3	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,135
CNEL:	120	259	557	1,201

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Site 2 Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,370 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,616 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.41%
Medium Trucks:	81.9%	6.8%	11.3%	1.91%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-1.12	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-18.19	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.68	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.2	67.8	64.2	72.0	72.4
Medium Trucks:	63.9	64.0	59.2	56.7	64.9	65.2
Heavy Trucks:	63.0	63.3	53.0	56.3	64.3	64.4
Vehicle Noise:	71.9	71.8	68.5	65.5	73.4	73.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	529	1,140
CNEL:	121	260	560	1,206

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Site 2 Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,535 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,627 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-1.09	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-18.12	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.62	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	70.3	67.8	64.2	72.0	72.5
Medium Trucks:	64.0	64.1	59.3	56.7	65.0	65.3
Heavy Trucks:	63.1	63.4	53.0	56.4	64.4	64.5
Vehicle Noise:	72.0	71.9	68.5	65.5	73.4	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,147
CNEL:	121	261	563	1,213

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue M | Job Number: 14267
Road Segment: e/o Site 2 Rd.

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	25,263 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,675 vehicles
Vehicle Speed:	60 mph
Near/Far Lane Distance:	87 feet

Site Data

Barrier Height:	**0.0 feet**
Barrier Type (0-Wall, 1-Berm):	0.0
Centerline Dist. to Barrier:	68.0 feet
Centerline Dist. to Observer:	68.0 feet
Barrier Distance to Observer:	0.0 feet
Observer Height (Above Pad):	5.0 feet
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:	75.2%	10.7%	14.0%	97.46%
Medium Trucks:	81.9%	6.8%	11.3%	1.87%
Heavy Trucks:	85.3%	2.0%	12.7%	0.67%

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:	52.505
Medium Trucks:	52.336
Heavy Trucks:	52.352

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	-0.96	-0.42	-1.20	-4.71	0.000	0.000
Medium Trucks:	83.68	-18.12	-0.40	-1.20	-4.88	0.000	0.000
Heavy Trucks:	87.33	-22.62	-0.40	-1.20	-5.29	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	70.4	68.0	64.4	72.2	72.6
Medium Trucks:	64.0	64.1	59.3	56.7	65.0	65.3
Heavy Trucks:	63.1	63.4	53.0	56.4	64.4	64.5
Vehicle Noise:	72.1	72.0	68.6	65.6	73.5	73.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	251	540	1,164
CNEL:	123	265	572	1,232

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,322 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.71	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.74	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.24	1.59	-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:	69.8	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.6	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	71.5	71.4	67.9	65.0	72.9	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	86	186	401	863

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,436 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,487 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.40%
Medium Trucks:	81.9%	6.8%	11.3%	1.92%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.68	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.74	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.24	1.59	-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:	69.9	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.6	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	71.5	71.5	68.0	65.1	73.0	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	380	819
CNEL:	87	186	402	866

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,322 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.71	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.74	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.24	1.59	-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:	69.8	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.6	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	71.5	71.4	67.9	65.0	72.9	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	86	186	401	863

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,322 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.71	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.74	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.24	1.59	-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:	69.8	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.6	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	71.5	71.4	67.9	65.0	72.9	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	86	186	401	863

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,322 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,480 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.71	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.74	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.24	1.59	-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:	69.8	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.6	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	71.5	71.4	67.9	65.0	72.9	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	86	186	401	863

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 SB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,436 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,487 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.40%
Medium Trucks:	81.9%	6.8%	11.3%	1.92%
Heavy Trucks:	85.3%	2.0%	12.7%	0.68%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.68	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.74	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.24	1.59	-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:	69.9	69.6	67.2	63.6	71.4	71.8
Medium Trucks:	63.6	63.8	59.0	56.4	64.7	65.0
Heavy Trucks:	63.5	63.8	53.5	56.8	64.8	64.9
Vehicle Noise:	71.5	71.5	68.0	65.1	73.0	73.3

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	380	819
CNEL:	87	186	402	866

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	19,348 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,283 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.33	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-18.36	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.86	1.59	-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	69.0	66.6	62.9	70.8	71.2
Medium Trucks:	63.0	63.2	58.4	55.8	64.1	64.4
Heavy Trucks:	62.9	63.2	52.8	56.2	64.2	64.3
Vehicle Noise:	70.9	70.8	67.3	64.4	72.3	72.7

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	78	169	364	785

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,531 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,494 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.76%
Medium Trucks:	81.9%	6.8%	11.3%	1.66%
Heavy Trucks:	85.3%	2.0%	12.7%	0.59%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.65	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-18.36	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.86	1.59	-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:	69.9	69.7	67.2	63.6	71.4	71.9
Medium Trucks:	63.0	63.2	58.4	55.8	64.1	64.4
Heavy Trucks:	62.9	63.2	52.8	56.2	64.2	64.3
Vehicle Noise:	71.4	71.3	67.9	64.9	72.8	73.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	372	800
CNEL:	85	182	393	846

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	22,697 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,505 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.64	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.67	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.16	1.59	-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:	69.9	69.7	67.2	63.6	71.4	71.9
Medium Trucks:	63.7	63.8	59.1	56.5	64.8	65.1
Heavy Trucks:	63.6	63.9	53.5	56.9	64.9	65.0
Vehicle Noise:	71.6	71.5	68.0	65.1	73.0	73.4

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	827
CNEL:	87	188	405	873

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	23,767 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,576 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.50%
Medium Trucks:	81.9%	6.8%	11.3%	1.84%
Heavy Trucks:	85.3%	2.0%	12.7%	0.65%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.43	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.67	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-22.16	1.59	-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	69.9	67.4	63.8	71.7	72.1
Medium Trucks:	63.7	63.8	59.1	56.5	64.8	65.1
Heavy Trucks:	63.6	63.9	53.5	56.9	64.9	65.0
Vehicle Noise:	71.7	71.6	68.2	65.3	73.2	73.5

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	392	845
CNEL:	89	192	414	893

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	24,930 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,653 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.23	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.26	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-21.76	1.59	-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	70.1	67.7	64.0	71.9	72.3
Medium Trucks:	64.1	64.3	59.5	56.9	65.2	65.5
Heavy Trucks:	64.0	64.3	53.9	57.3	65.3	65.4
Vehicle Noise:	72.0	71.9	68.4	65.5	73.4	73.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	408	880
CNEL:	93	200	431	929

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: w/o SR-14 NB Ramps

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	28,113 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	1,864 vehicles
Vehicle Speed:	50 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.68%
Medium Trucks:	81.9%	6.8%	11.3%	1.71%
Heavy Trucks:	85.3%	2.0%	12.7%	0.61%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.31	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	81.00	-17.26	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	85.38	-21.76	1.59	-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	70.6	68.2	64.6	72.4	72.8
Medium Trucks:	64.1	64.3	59.5	56.9	65.2	65.5
Heavy Trucks:	64.0	64.3	53.9	57.3	65.3	65.4
Vehicle Noise:	72.4	72.3	68.9	65.9	73.8	74.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	933
CNEL:	99	212	458	986

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: E | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: e/o 10th St. W

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	8,451 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	560 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.34	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-22.37	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.87	1.59	-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	66.6	64.1	60.5	68.3	68.7
Medium Trucks:	60.4	60.5	55.8	53.2	61.5	61.8
Heavy Trucks:	59.9	60.2	49.9	53.2	61.2	61.3
Vehicle Noise:	68.4	68.3	64.8	61.9	69.8	70.1

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	234	503
CNEL:	53	115	247	532

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EP | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: e/o 10th St. W

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	11,634 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	771 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	98.10%
Medium Trucks:	81.9%	6.8%	11.3%	1.40%
Heavy Trucks:	85.3%	2.0%	12.7%	0.50%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.92	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-22.37	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.87	1.59	-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:	68.2	68.0	65.5	61.9	69.7	70.2
Medium Trucks:	60.4	60.5	55.8	53.2	61.5	61.8
Heavy Trucks:	59.9	60.2	49.9	53.2	61.2	61.3
Vehicle Noise:	69.4	69.3	66.1	63.0	70.8	71.2

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	63	135	291	627

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: e/o 10th St. W

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,360 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	621 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.90	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.93	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.42	1.59	-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:	67.2	67.0	64.6	60.9	68.8	69.2
Medium Trucks:	60.9	61.0	56.2	53.6	61.9	62.2
Heavy Trucks:	60.4	60.7	50.3	53.7	61.7	61.7
Vehicle Noise:	68.8	68.7	65.3	62.3	70.2	70.6

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	57	123	264	569

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2025) | Project Name: Antelope Valley Commerc
Road Name: Avenue N | Job Number: 14267
Road Segment: e/o 10th St. W

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	10,431 vehicles
Peak Hour Percentage:	6.63%
Peak Hour Volume:	692 vehicles
Vehicle Speed:	55 mph
Near/Far Lane Distance:	70 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:	75.2%	10.7%	14.0%	97.66%
Medium Trucks:	81.9%	6.8%	11.3%	1.73%
Heavy Trucks:	85.3%	2.0%	12.7%	0.61%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.41	1.55	-1.20	-4.66	0.000	0.000
Medium Trucks:	82.40	-21.93	1.59	-1.20	-4.87	0.000	0.000
Heavy Trucks:	86.40	-26.42	1.59	-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:	67.7	67.5	65.0	61.4	69.2	69.7
Medium Trucks:	60.9	61.0	56.2	53.6	61.9	62.2
Heavy Trucks:	60.4	60.7	50.3	53.7	61.7	61.7
Vehicle Noise:	69.1	69.0	65.7	62.7	70.6	70.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	60	130	279	601

Saturday, October 14, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: EC (2032)
Road Name: Avenue N
Road Segment: e/o 10th St. W

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	9,967	vehicles
Peak Hour Percentage:	6.63%	
Peak Hour Volume:	661	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	70	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:	75.2%	10.7%	14.0%	97.39%
Medium Trucks:	81.9%	6.8%	11.3%	1.93%
Heavy Trucks:	85.3%	2.0%	12.7%	0.69%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-4.62	1.55	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-21.66	1.59	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-26.15	1.59	-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:	67.5	67.3	64.8	61.2	69.0	69.5
Medium Trucks:	61.1	61.3	56.5	53.9	62.2	62.5
Heavy Trucks:	60.6	60.9	50.6	53.9	61.9	62.0
Vehicle Noise:	69.1	69.0	65.6	62.6	70.5	70.9

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	56	121	261	562
CNEL:	59	128	276	594

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)

Scenario: ECP (2032)
Road Name: Avenue N
Road Segment: e/o 10th St. W

Project Name: Antelope Valley Commerc
Job Number: 14267

SITE SPECIFIC INPUT DATA

Highway Data

Average Daily Traffic (Adt):	13,150	vehicles
Peak Hour Percentage:	6.63%	
Peak Hour Volume:	872	vehicles
Vehicle Speed:	55	mph
Near/Far Lane Distance:	70	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:	75.2%	10.7%	14.0%	98.02%
Medium Trucks:	81.9%	6.8%	11.3%	1.46%
Heavy Trucks:	85.3%	2.0%	12.7%	0.52%

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:	38.781
Medium Trucks:	38.553
Heavy Trucks:	38.575

FHWA Noise Model Calculations

VehicleType	*REMEL*	*Traffic Flow*	*Distance*	*Finite Road*	*Fresnel*	*Barrier Atten*	*Berm Atten*
Autos:	71.78	-3.39	1.55	-1.20	*-4.66*	0.000	0.000
Medium Trucks:	82.40	-21.66	1.59	-1.20	*-4.87*	0.000	0.000
Heavy Trucks:	86.40	-26.15	1.59	-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:	68.7	68.5	66.1	62.5	70.3	70.7
Medium Trucks:	61.1	61.3	56.5	53.9	62.2	62.5
Heavy Trucks:	60.6	60.9	50.6	53.9	61.9	62.0
Vehicle Noise:	70.0	69.8	66.6	63.5	71.4	71.8

Centerline Distance to Noise Contour (in feet)

	70 dBA	*65 dBA*	*60 dBA*	*55 dBA*
Ldn:	65	139	300	646
CNEL:	68	147	318	684

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APPENDIX 9.1:

CADNAA OPERATIONAL NOISE MODEL INPUTS

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14267 - AVCC

CadnaA Noise Prediction Model: 14267-02.cna
Date: 14.10.23
Analyst: B. Lawson

Calculation Configuration

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

Receiver Noise Levels

Name	M.	ID	Level Lr			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	52.0	51.5	58.2	50.0	45.0	0.0				5.00	a	5998323.52	2547717.57	5.00
RECEIVERS		R2	50.8	50.7	57.4	50.0	45.0	0.0				5.00	a	5998740.19	2548183.72	5.00
RECEIVERS		R3	50.1	50.0	56.7	50.0	45.0	0.0				5.00	a	5999507.67	2548300.53	5.00
RECEIVERS		R4	48.8	48.8	55.5	50.0	45.0	0.0				5.00	a	5996483.88	2548114.54	5.00
RECEIVERS		R5	55.1	55.1	61.8	50.0	45.0	0.0				5.00	a	5996690.91	2545526.12	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6000015.08	2547440.64	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6000197.22	2547437.98	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6000645.94	2547424.68	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6000838.05	2547421.36	50.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001261.51	2547413.38	50.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001559.45	2546758.46	50.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6002204.22	2546747.76	50.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6002142.93	2545441.96	50.00
POINTSOURCE		AC09	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001541.80	2545452.63	50.00
POINTSOURCE		AC10	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001563.16	2546110.35	50.00
POINTSOURCE		AC11	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6002167.49	2546093.27	50.00
POINTSOURCE		AC12	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998440.06	2545109.89	50.00
POINTSOURCE		AC13	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998459.28	2545782.56	50.00
POINTSOURCE		AC14	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001045.31	2545045.83	50.00
POINTSOURCE		AC15	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001067.73	2545717.43	50.00

Name	M.	ID	Result. PWL			Lw / Li			Operating Time			Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Special	Night			X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	(ft)		(ft)	(ft)	(ft)
POINTSOURCE		AC16	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001070.22	2546115.88	50.00
POINTSOURCE		AC17	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5999537.02	2546150.60	50.00
POINTSOURCE		AC18	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5999563.06	2546821.18	50.00
POINTSOURCE		AC19	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6001093.01	2546784.28	50.00
POINTSOURCE		AC20	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5999249.88	2546829.40	50.00
POINTSOURCE		AC21	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5999226.44	2546170.55	50.00
POINTSOURCE		AC22	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998247.28	2546199.19	50.00
POINTSOURCE		AC23	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998260.30	2546842.42	50.00
POINTSOURCE		AC24	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5997794.20	2545225.63	50.00
POINTSOURCE		AC25	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5997859.30	2546848.02	50.00
POINTSOURCE		AC26	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5997255.13	2546861.04	50.00
POINTSOURCE		AC27	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5997287.69	2547480.33	30.00
POINTSOURCE		AC28	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5997915.29	2547462.11	30.00
POINTSOURCE		AC29	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998616.07	2547314.31	30.00
POINTSOURCE		AC30	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998477.18	2547319.86	30.00
POINTSOURCE		AC31	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998352.87	2547325.42	30.00
POINTSOURCE		AC32	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998679.96	2547540.70	30.00
POINTSOURCE		AC33	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998418.84	2547547.64	30.00
POINTSOURCE		AC34	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	5998234.12	2547551.81	30.00
POINTSOURCE		DT02	84.0	84.0	84.0	Lw	84					5.00	a	5998743.84	2547519.86	5.00
POINTSOURCE		DT03	84.0	84.0	84.0	Lw	84					5.00	a	5998293.84	2547558.06	5.00
POINTSOURCE		TRASH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5998327.18	2547470.56	5.00
POINTSOURCE		TRASH02	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5998720.93	2547487.92	5.00
POINTSOURCE		TRASH03	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5997816.33	2547097.52	5.00
POINTSOURCE		TRASH04	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5997344.98	2547110.54	5.00
POINTSOURCE		TRASH05	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5997981.65	2546740.86	5.00
POINTSOURCE		TRASH06	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5997937.38	2545303.36	5.00
POINTSOURCE		TRASH07	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5997111.86	2546764.30	5.00
POINTSOURCE		TRASH08	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5998321.50	2546039.04	5.00
POINTSOURCE		TRASH09	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5999140.51	2546014.30	5.00
POINTSOURCE		TRASH10	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5999169.15	2547039.04	5.00
POINTSOURCE		TRASH11	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5998355.35	2547057.27	5.00
POINTSOURCE		TRASH12	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5999643.35	2547024.08	5.00
POINTSOURCE		TRASH13	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6001028.99	2546992.62	5.00
POINTSOURCE		TRASH14	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6000992.10	2545971.57	5.00
POINTSOURCE		TRASH15	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5999606.46	2546000.86	5.00
POINTSOURCE		TRASH16	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6000967.37	2544897.42	5.00
POINTSOURCE		TRASH17	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5998503.06	2544961.48	5.00
POINTSOURCE		TRASH18	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6000998.33	2545921.36	5.00
POINTSOURCE		TRASH19	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5998536.16	2545983.29	5.00
POINTSOURCE		TRASH20	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6001592.74	2544904.89	5.00
POINTSOURCE		TRASH21	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6002207.61	2544891.77	5.00
POINTSOURCE		TRASH22	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6002235.32	2545545.29	5.00
POINTSOURCE		TRASH23	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6001618.27	2545562.79	5.00
POINTSOURCE		TRASH24	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6001640.17	2546213.86	5.00
POINTSOURCE		TRASH25	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6001181.07	2547064.38	5.00
POINTSOURCE		TRASH26	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6000211.85	2547087.65	5.00
POINTSOURCE		TRASH27	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	5999598.93	2547103.60	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		TRUCK01	93.2	93.2	93.2	69.3	69.3	69.3	Lw	93.2									8	a
LINESOURCE		TRUCK02	93.2	93.2	93.2	62.8	62.8	62.8	Lw	93.2									8	a
LINESOURCE		TRUCK03	93.2	93.2	93.2	65.7	65.7	65.7	Lw	93.2									8	a
LINESOURCE		TRUCK04	93.2	93.2	93.2	63.2	63.2	63.2	Lw	93.2									8	a
LINESOURCE		TRUCK05	93.2	93.2	93.2	63.3	63.3	63.3	Lw	93.2									8	a
LINESOURCE		TRUCK06	93.2	93.2	93.2	63.2	63.2	63.2	Lw	93.2									8	a
LINESOURCE		TRUCK07	93.2	93.2	93.2	64.0	64.0	64.0	Lw	93.2									8	a
LINESOURCE		TRUCK08	93.2	93.2	93.2	68.5	68.5	68.5	Lw	93.2									8	a
LINESOURCE		TRUCK09	93.2	93.2	93.2	68.4	68.4	68.4	Lw	93.2									8	a
LINESOURCE		TRUCK10	93.2	93.2	93.2	69.0	69.0	69.0	Lw	93.2									8	a
LINESOURCE		TRUCK11	93.2	93.2	93.2	69.4	69.4	69.4	Lw	93.2									8	a
LINESOURCE		TRUCK12	93.2	93.2	93.2	69.1	69.1	69.1	Lw	93.2									8	a
LINESOURCE		TRUCK13	93.2	93.2	93.2	65.6	65.6	65.6	Lw	93.2									8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	a			5997283.78	2547126.17	8.00	0.00
						5998084.56	2547104.03	8.00	0.00
LINESOURCE	TRUCK02	8.00	a			5998078.05	2546915.73	8.00	0.00
						5997190.03	2546941.77	8.00	0.00
						5997124.92	2545522.50	8.00	0.00
						5997190.03	2545074.59	8.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						5998020.76	2545056.36	8.00	0.00
LINESOURCE	TRUCK03	8.00	a			5997929.74	2546920.08	8.00	0.00
						5997872.16	2545059.62	8.00	0.00
LINESOURCE	TRUCK04	8.00	a			6001392.68	2546822.66	8.00	0.00
						6001207.28	2546845.48	8.00	0.00
						6001037.56	2546852.61	8.00	0.00
						5999618.52	2546886.84	8.00	0.00
						5999180.69	2546898.25	8.00	0.00
						5998116.76	2546923.92	8.00	0.00
						5998078.05	2546915.73	8.00	0.00
LINESOURCE	TRUCK05	8.00	a			5998089.66	2546122.41	8.00	0.00
						6001319.95	2546041.11	8.00	0.00
LINESOURCE	TRUCK06	8.00	a			5998082.77	2545873.76	8.00	0.00
						6001328.08	2545788.68	8.00	0.00
LINESOURCE	TRUCK07	8.00	a			5998368.02	2545053.05	8.00	0.00
						6001122.90	2544965.47	8.00	0.00
LINESOURCE	TRUCK08	8.00	a			6001150.81	2545793.33	8.00	0.00
						6001117.86	2544823.62	8.00	0.00
LINESOURCE	TRUCK09	8.00	a			5998378.29	2545866.01	8.00	0.00
						5998347.65	2544880.91	8.00	0.00
LINESOURCE	TRUCK10	8.00	a			6001383.78	2545652.30	8.00	0.00
						6002236.89	2545629.88	8.00	0.00
LINESOURCE	TRUCK11	8.00	a			6002205.42	2544974.91	8.00	0.00
						6001478.23	2544992.42	8.00	0.00
						6001432.28	2544950.85	8.00	0.00
LINESOURCE	TRUCK12	8.00	a			6001411.63	2546304.30	8.00	0.00
						6002254.79	2546282.91	8.00	0.00
LINESOURCE	TRUCK13	8.00	a			6001360.56	2547059.73	8.00	0.00
						6001296.74	2547085.65	8.00	0.00
						6001258.85	2547098.95	8.00	0.00
						5999472.63	2547146.15	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		CAR01	81.1	81.1	81.1	53.3	53.3	53.3	Lw	81.1					5	a
AREASOURCE		CAR02	81.1	81.1	81.1	48.2	48.2	48.2	Lw	81.1					5	a
AREASOURCE		CAR03	81.1	81.1	81.1	43.9	43.9	43.9	Lw	81.1					5	a
AREASOURCE		CAR04	81.1	81.1	81.1	49.5	49.5	49.5	Lw	81.1					5	a
AREASOURCE		CAR05	81.1	81.1	81.1	61.4	61.4	61.4	Lw	81.1					5	a
AREASOURCE		CAR06	81.1	81.1	81.1	59.1	59.1	59.1	Lw	81.1					5	a
AREASOURCE		CAR07	81.1	81.1	81.1	52.0	52.0	52.0	Lw	81.1					5	a
AREASOURCE		CAR08	81.1	81.1	81.1	49.0	49.0	49.0	Lw	81.1					5	a
AREASOURCE		CAR09	81.1	81.1	81.1	56.2	56.2	56.2	Lw	81.1					5	a
AREASOURCE		CAR10	81.1	81.1	81.1	48.4	48.4	48.4	Lw	81.1					5	a
AREASOURCE		CAR11	81.1	81.1	81.1	45.0	45.0	45.0	Lw	81.1					5	a
AREASOURCE		CAR12	81.1	81.1	81.1	45.6	45.6	45.6	Lw	81.1					5	a
AREASOURCE		CAR13	81.1	81.1	81.1	47.4	47.4	47.4	Lw	81.1					5	a
AREASOURCE		CAR14	81.1	81.1	81.1	41.4	41.4	41.4	Lw	81.1					5	a
AREASOURCE		CAR15	81.1	81.1	81.1	49.0	49.0	49.0	Lw	81.1					5	a
AREASOURCE		CAR16	81.1	81.1	81.1	41.3	41.3	41.3	Lw	81.1					5	a
AREASOURCE		CAR17	81.1	81.1	81.1	46.3	46.3	46.3	Lw	81.1					5	a
AREASOURCE		CAR18	81.1	81.1	81.1	51.7	51.7	51.7	Lw	81.1					5	a
AREASOURCE		CAR19	81.1	81.1	81.1	45.0	45.0	45.0	Lw	81.1					5	a
AREASOURCE		CAR20	81.1	81.1	81.1	60.0	60.0	60.0	Lw	81.1					5	a
AREASOURCE		CAR21	81.1	81.1	81.1	49.0	49.0	49.0	Lw	81.1					5	a
AREASOURCE		CAR22	81.1	81.1	81.1	47.0	47.0	47.0	Lw	81.1					5	a
AREASOURCE		CAR23	81.1	81.1	81.1	54.0	54.0	54.0	Lw	81.1					5	a
AREASOURCE		CAR24	81.1	81.1	81.1	41.8	41.8	41.8	Lw	81.1					5	a
AREASOURCE		CAR25	81.1	81.1	81.1	46.8	46.8	46.8	Lw	81.1					5	a
AREASOURCE		CAR26	81.1	81.1	81.1	45.0	45.0	45.0	Lw	81.1					5	a
AREASOURCE		CAR27	81.1	81.1	81.1	51.6	51.6	51.6	Lw	81.1					5	a
AREASOURCE		CAR28	81.1	81.1	81.1	44.1	44.1	44.1	Lw	81.1					5	a
AREASOURCE		CAR29	81.1	81.1	81.1	46.1	46.1	46.1	Lw	81.1					5	a
AREASOURCE		CAR30	81.1	81.1	81.1	59.3	59.3	59.3	Lw	81.1					5	a
AREASOURCE		CAR31	81.1	81.1	81.1	48.0	48.0	48.0	Lw	81.1					5	a
AREASOURCE		CAR32	81.1	81.1	81.1	38.0	38.0	38.0	Lw	81.1					5	a
AREASOURCE		CAR33	81.1	81.1	81.1	52.5	52.5	52.5	Lw	81.1					5	a
AREASOURCE		CAR34	81.1	81.1	81.1	54.2	54.2	54.2	Lw	81.1					5	a
AREASOURCE		CAR35	81.1	81.1	81.1	53.7	53.7	53.7	Lw	81.1					5	a
AREASOURCE		CAR36	81.1	81.1	81.1	62.3	62.3	62.3	Lw	81.1					5	a
AREASOURCE		CAR37	81.1	81.1	81.1	61.6	61.6	61.6	Lw	81.1					5	a
AREASOURCE		CAR38	81.1	81.1	81.1	46.3	46.3	46.3	Lw	81.1					5	a
AREASOURCE		CAR39	81.1	81.1	81.1	53.9	53.9	53.9	Lw	81.1					5	a
AREASOURCE		CAR40	81.1	81.1	81.1	49.5	49.5	49.5	Lw	81.1					5	a

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		CAR41	81.1	81.1	81.1	51.3	51.3	51.3	Lw	81.1					5	a
AREASOURCE		CAR42	81.1	81.1	81.1	52.9	52.9	52.9	Lw	81.1					5	a
AREASOURCE		CAR43	81.1	81.1	81.1	54.4	54.4	54.4	Lw	81.1					5	a
AREASOURCE		CAR44	81.1	81.1	81.1	61.1	61.1	61.1	Lw	81.1					5	a
AREASOURCE		CAR45	81.1	81.1	81.1	51.6	51.6	51.6	Lw	81.1					5	a
AREASOURCE		CAR46	81.1	81.1	81.1	53.5	53.5	53.5	Lw	81.1					5	a
AREASOURCE		CAR47	81.1	81.1	81.1	51.3	51.3	51.3	Lw	81.1					5	a
AREASOURCE		CAR48	81.1	81.1	81.1	54.3	54.3	54.3	Lw	81.1					5	a
AREASOURCE		CAR49	81.1	81.1	81.1	44.6	44.6	44.6	Lw	81.1					5	a
AREASOURCE		CAR50	81.1	81.1	81.1	44.3	44.3	44.3	Lw	81.1					5	a
AREASOURCE		CAR51	81.1	81.1	81.1	48.1	48.1	48.1	Lw	81.1					5	a
AREASOURCE		CAR52	81.1	81.1	81.1	47.9	47.9	47.9	Lw	81.1					5	a
AREASOURCE		DOCK01	111.5	111.5	111.5	69.8	69.8	69.8	Lw	111.5					8	a
AREASOURCE		DOCK02	111.5	111.5	111.5	76.6	76.6	76.6	Lw	111.5					8	a
AREASOURCE		DOCK03	111.5	111.5	111.5	71.9	71.9	71.9	Lw	111.5					8	a
AREASOURCE		DOCK04	111.5	111.5	111.5	72.7	72.7	72.7	Lw	111.5					8	a
AREASOURCE		DOCK05	111.5	111.5	111.5	74.5	74.5	74.5	Lw	111.5					8	a
AREASOURCE		DOCK06	111.5	111.5	111.5	73.3	73.3	73.3	Lw	111.5					8	a
AREASOURCE		DOCK07	111.5	111.5	111.5	81.7	81.7	81.7	Lw	111.5					8	a
AREASOURCE		DOCK08	111.5	111.5	111.5	74.7	74.7	74.7	Lw	111.5					8	a
AREASOURCE		DOCK09	111.5	111.5	111.5	74.9	74.9	74.9	Lw	111.5					8	a
AREASOURCE		DOCK10	111.5	111.5	111.5	75.0	75.0	75.0	Lw	111.5					8	a
AREASOURCE		DOCK11	111.5	111.5	111.5	72.3	72.3	72.3	Lw	111.5					8	a
AREASOURCE		DOCK12	111.5	111.5	111.5	72.3	72.3	72.3	Lw	111.5					8	a
AREASOURCE		DOCK13	111.5	111.5	111.5	72.8	72.8	72.8	Lw	111.5					8	a
AREASOURCE		DOCK14	111.5	111.5	111.5	69.8	69.8	69.8	Lw	111.5					8	a
AREASOURCE		DOCK15	111.5	111.5	111.5	70.1	70.1	70.1	Lw	111.5					8	a
AREASOURCE		DOCK16	111.5	111.5	111.5	70.1	70.1	70.1	Lw	111.5					8	a
AREASOURCE		DOCK17	111.5	111.5	111.5	67.4	67.4	67.4	Lw	111.5					8	a
AREASOURCE		DOCK18	111.5	111.5	111.5	76.6	76.6	76.6	Lw	111.5					8	a
AREASOURCE		DOCK19	111.5	111.5	111.5	76.2	76.2	76.2	Lw	111.5					8	a
AREASOURCE		DOCK20	111.5	111.5	111.5	76.1	76.1	76.1	Lw	111.5					8	a
AREASOURCE		DOCK21	111.5	111.5	111.5	76.4	76.4	76.4	Lw	111.5					8	a
AREASOURCE		DOCK22	111.5	111.5	111.5	76.2	76.2	76.2	Lw	111.5					8	a
AREASOURCE		DOCK23	111.5	111.5	111.5	78.9	78.9	78.9	Lw	111.5					8	a
AREASOURCE		DOCK24	111.5	111.5	111.5	82.6	82.6	82.6	Lw	111.5					8	a
AREASOURCE		DOCK25	111.5	111.5	111.5	77.7	77.7	77.7	Lw	111.5					8	a
AREASOURCE		DOCK26	111.5	111.5	111.5	81.7	81.7	81.7	Lw	111.5					8	a
AREASOURCE		DOCK27	111.5	111.5	111.5	78.2	78.2	78.2	Lw	111.5					8	a
AREASOURCE		DOCK28	111.5	111.5	111.5	82.3	82.3	82.3	Lw	111.5					8	a
AREASOURCE		DOCK29	111.5	111.5	111.5	71.6	71.6	71.6	Lw	111.5					8	a
AREASOURCE		DOCK30	111.5	111.5	111.5	76.3	76.3	76.3	Lw	111.5					8	a

Name	ID	Height			Coordinates			
		Begin		End	x	y	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	CAR01	5.00	a		5997234.30	2547466.01	5.00	0.00
					5997225.19	2547188.67	5.00	0.00
					5997203.05	2547187.37	5.00	0.00
					5997209.56	2547467.31	5.00	0.00
AREASOURCE	CAR02	5.00	a		5997972.58	2547486.84	5.00	0.00
					5998036.39	2547489.45	5.00	0.00
					5998025.97	2547161.32	5.00	0.00
					5997962.17	2547158.72	5.00	0.00
AREASOURCE	CAR03	5.00	a		5997221.28	2547598.82	5.00	0.00
					5998018.16	2547564.97	5.00	0.00
					5998016.85	2547541.53	5.00	0.00
					5998037.69	2547541.53	5.00	0.00
					5998036.39	2547493.36	5.00	0.00
					5997277.27	2547520.70	5.00	0.00
					5997277.27	2547570.18	5.00	0.00
					5997222.58	2547572.78	5.00	0.00
AREASOURCE	CAR04	5.00	a		5998234.12	2547481.67	5.00	0.00
					5998673.71	2547472.64	5.00	0.00
					5998673.71	2547435.83	5.00	0.00
					5998235.51	2547446.95	5.00	0.00
AREASOURCE	CAR05	5.00	a		5998707.73	2547497.64	5.00	0.00
					5998729.26	2547495.56	5.00	0.00
					5998726.48	2547447.64	5.00	0.00
					5998706.34	2547449.72	5.00	0.00
AREASOURCE	CAR06	5.00	a		5998607.73	2547517.78	5.00	0.00
					5998707.04	2547515.00	5.00	0.00
					5998707.73	2547497.64	5.00	0.00
					5998609.12	2547500.42	5.00	0.00
AREASOURCE	CAR07	5.00	a		5997092.59	2546954.58	5.00	0.00
					5997134.91	2546951.32	5.00	0.00
					5997135.99	2546929.62	5.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						5997154.44	2546930.70	5.00	0.00
						5997151.18	2546803.75	5.00	0.00
						5997088.25	2546807.01	5.00	0.00
AREASOURCE	CAR08	5.00	a			5997526.57	2545159.48	5.00	0.00
						5997746.63	2545154.27	5.00	0.00
						5997742.72	2545138.65	5.00	0.00
						5997822.15	2545137.35	5.00	0.00
						5997819.54	2545086.56	5.00	0.00
						5997525.27	2545098.28	5.00	0.00
AREASOURCE	CAR09	5.00	a			5998471.62	2547572.64	5.00	0.00
						5998536.90	2547572.64	5.00	0.00
						5998532.73	2547519.86	5.00	0.00
						5998473.01	2547519.17	5.00	0.00
AREASOURCE	CAR10	5.00	a			5999471.63	2547042.29	5.00	0.00
						5999594.28	2547039.44	5.00	0.00
						5999591.42	2547018.04	5.00	0.00
						5999617.09	2547018.04	5.00	0.00
						5999617.09	2546933.90	5.00	0.00
						5999592.85	2546935.33	5.00	0.00
						5999591.42	2546909.65	5.00	0.00
						5999463.07	2546916.79	5.00	0.00
						5999463.07	2546938.18	5.00	0.00
						5999443.10	2546939.60	5.00	0.00
						5999444.53	2547019.47	5.00	0.00
						5999465.92	2547019.47	5.00	0.00
AREASOURCE	CAR11	5.00	a			5999327.58	2546848.33	5.00	0.00
						5999380.35	2546842.62	5.00	0.00
						5999354.68	2546142.37	5.00	0.00
						5999293.35	2546148.08	5.00	0.00
						5999316.17	2546818.38	5.00	0.00
AREASOURCE	CAR12	5.00	a			5999444.53	2546838.35	5.00	0.00
						5999493.02	2546834.07	5.00	0.00
						5999468.77	2546129.54	5.00	0.00
						5999410.30	2546143.80	5.00	0.00
						5999425.99	2546620.14	5.00	0.00
						5999443.10	2546620.14	5.00	0.00
AREASOURCE	CAR13	5.00	a			5999170.70	2546071.06	5.00	0.00
						5999577.16	2546062.51	5.00	0.00
						5999577.16	2545999.76	5.00	0.00
						5999172.13	2546008.31	5.00	0.00
AREASOURCE	CAR14	5.00	a			6001192.66	2545767.61	5.00	0.00
						6001247.11	2545766.54	5.00	0.00
						6001248.18	2545748.39	5.00	0.00
						6001296.22	2545737.72	5.00	0.00
						6001275.94	2545002.05	5.00	0.00
						6001242.84	2544943.33	5.00	0.00
						6001221.48	2544932.65	5.00	0.00
						6001149.95	2544932.65	5.00	0.00
						6001173.44	2545746.26	5.00	0.00
						6001192.66	2545743.05	5.00	0.00
AREASOURCE	CAR15	5.00	a			6001022.89	2546024.93	5.00	0.00
						6001300.50	2546018.53	5.00	0.00
						6001303.70	2545953.40	5.00	0.00
						6001026.09	2545963.01	5.00	0.00
AREASOURCE	CAR16	5.00	a			5997200.45	2547091.01	5.00	0.00
						5998003.83	2547074.08	5.00	0.00
						5998001.23	2547054.55	5.00	0.00
						5998023.36	2547051.95	5.00	0.00
						5998027.27	2546969.92	5.00	0.00
						5997884.04	2546966.01	5.00	0.00
						5997886.65	2546950.39	5.00	0.00
						5997196.54	2546968.62	5.00	0.00
						5997195.24	2546989.45	5.00	0.00
						5997174.41	2546986.84	5.00	0.00
						5997174.41	2547072.78	5.00	0.00
						5997201.75	2547068.88	5.00	0.00
AREASOURCE	CAR17	5.00	a			6001051.72	2545944.85	5.00	0.00
						6001280.21	2545940.58	5.00	0.00
						6001304.77	2545919.23	5.00	0.00
						6001299.43	2545840.22	5.00	0.00
						6001277.01	2545817.80	5.00	0.00
						6001041.04	2545826.34	5.00	0.00
						6001023.95	2545843.42	5.00	0.00
						6001027.16	2545926.70	5.00	0.00
AREASOURCE	CAR18	5.00	a			6001416.88	2545604.25	5.00	0.00
						6001467.06	2545622.40	5.00	0.00
						6001588.78	2545618.13	5.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						6001590.92	2545559.41	5.00	0.00
						6001431.83	2545564.74	5.00	0.00
AREASOURCE	CAR19	5.00	a			6001472.40	2545546.59	5.00	0.00
						6002235.82	2545528.44	5.00	0.00
						6002239.03	2545481.46	5.00	0.00
						6002120.51	2545488.94	5.00	0.00
						6002120.51	2545467.58	5.00	0.00
						6001557.82	2545482.53	5.00	0.00
						6001557.82	2545498.55	5.00	0.00
						6001474.53	2545503.88	5.00	0.00
AREASOURCE	CAR20	5.00	a			5998379.96	2547521.95	5.00	0.00
						5998463.98	2547521.25	5.00	0.00
						5998462.59	2547505.28	5.00	0.00
						5998379.26	2547504.58	5.00	0.00
AREASOURCE	CAR21	5.00	a			5997531.78	2545040.99	5.00	0.00
						5997895.06	2545034.48	5.00	0.00
						5997896.37	2545013.65	5.00	0.00
						5997951.05	2545012.35	5.00	0.00
						5997954.96	2544994.12	5.00	0.00
						5997935.43	2544995.42	5.00	0.00
						5997935.43	2544983.70	5.00	0.00
						5997514.86	2545004.53	5.00	0.00
AREASOURCE	CAR22	5.00	a			6001405.29	2545451.93	5.00	0.00
						6001469.48	2545451.20	5.00	0.00
						6001457.08	2545039.83	5.00	0.00
						6001440.30	2545042.02	5.00	0.00
						6001406.75	2544999.71	5.00	0.00
						6001392.89	2544998.98	5.00	0.00
AREASOURCE	CAR23	5.00	a			6001484.07	2544966.16	5.00	0.00
						6001574.51	2544966.16	5.00	0.00
						6001573.05	2544904.89	5.00	0.00
						6001484.79	2544904.89	5.00	0.00
AREASOURCE	CAR24	5.00	a			6001230.74	2546801.25	5.00	0.00
						6001286.18	2546796.39	5.00	0.00
						6001314.38	2546782.77	5.00	0.00
						6001332.86	2546777.91	5.00	0.00
						6001310.49	2546092.30	5.00	0.00
						6001292.98	2546068.96	5.00	0.00
						6001205.46	2546069.93	5.00	0.00
						6001184.06	2546090.35	5.00	0.00
						6001206.43	2546777.91	5.00	0.00
AREASOURCE	CAR25	5.00	a			6001469.01	2546798.33	5.00	0.00
						6001498.18	2546796.39	5.00	0.00
						6001500.13	2546756.52	5.00	0.00
						6001516.66	2546754.57	5.00	0.00
						6001501.10	2546348.07	5.00	0.00
						6001437.89	2546329.59	5.00	0.00
						6001451.50	2546800.28	5.00	0.00
AREASOURCE	CAR26	5.00	a			6001504.02	2546853.77	5.00	0.00
						6002276.18	2546833.34	5.00	0.00
						6002274.24	2546815.84	5.00	0.00
						6002245.06	2546787.64	5.00	0.00
						6002165.32	2546788.61	5.00	0.00
						6002166.29	2546774.99	5.00	0.00
						6001604.18	2546788.61	5.00	0.00
						6001604.18	2546803.20	5.00	0.00
						6001505.96	2546809.03	5.00	0.00
AREASOURCE	CAR27	5.00	a			6001450.53	2546257.62	5.00	0.00
						6001485.54	2546257.62	5.00	0.00
						6001488.46	2546274.16	5.00	0.00
						6001609.05	2546271.24	5.00	0.00
						6001609.05	2546208.03	5.00	0.00
						6001461.23	2546211.92	5.00	0.00
						6001458.31	2546230.39	5.00	0.00
						6001434.00	2546233.31	5.00	0.00
						6001430.11	2546254.71	5.00	0.00
AREASOURCE	CAR28	5.00	a			6001459.28	2546201.22	5.00	0.00
						6002256.73	2546183.71	5.00	0.00
						6002256.73	2546131.20	5.00	0.00
						6002140.03	2546138.98	5.00	0.00
						6002141.00	2546122.45	5.00	0.00
						6001578.90	2546135.09	5.00	0.00
						6001577.93	2546152.59	5.00	0.00
						6001484.57	2546154.54	5.00	0.00
						6001476.79	2546128.28	5.00	0.00
						6001491.37	2546122.45	5.00	0.00
						6001492.35	2546050.48	5.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						6001428.16	2546062.15	5.00	0.00
						6001429.13	2546176.91	5.00	0.00
						6001455.39	2546176.91	5.00	0.00
AREASOURCE	CAR29	5.00	a			6001049.86	2546979.22	5.00	0.00
						6001070.28	2546979.22	5.00	0.00
						6001069.31	2546999.64	5.00	0.00
						6001316.32	2546994.78	5.00	0.00
						6001320.21	2546973.38	5.00	0.00
						6001338.69	2546970.47	5.00	0.00
						6001336.75	2546891.69	5.00	0.00
						6001313.41	2546892.67	5.00	0.00
						6001314.38	2546870.30	5.00	0.00
						6001067.36	2546877.11	5.00	0.00
						6001069.31	2546900.45	5.00	0.00
						6001045.97	2546899.47	5.00	0.00
AREASOURCE	CAR30	5.00	a			5998293.15	2547524.03	5.00	0.00
						5998294.54	2547508.06	5.00	0.00
						5998202.18	2547508.75	5.00	0.00
						5998202.87	2547528.20	5.00	0.00
AREASOURCE	CAR31	5.00	a			6001425.94	2546017.52	5.00	0.00
						6001490.54	2546024.46	5.00	0.00
						6001479.27	2545684.11	5.00	0.00
						6001432.44	2545677.60	5.00	0.00
						6001414.23	2545678.90	5.00	0.00
AREASOURCE	CAR32	5.00	a			5998124.23	2545843.07	5.00	0.00
						5998333.87	2545839.17	5.00	0.00
						5998333.87	2545807.92	5.00	0.00
						5998353.40	2545807.92	5.00	0.00
						5998326.05	2544973.28	5.00	0.00
						5998305.22	2544977.19	5.00	0.00
						5998303.92	2544953.75	5.00	0.00
						5998091.68	2544958.96	5.00	0.00
						5998090.38	2544978.49	5.00	0.00
						5998073.45	2544977.19	5.00	0.00
						5998100.79	2545811.82	5.00	0.00
						5998122.93	2545813.13	5.00	0.00
AREASOURCE	CAR33	5.00	a			6000829.41	2547480.52	5.00	0.00
						6001277.46	2547469.22	5.00	0.00
						6001276.13	2547452.60	5.00	0.00
						6000830.74	2547461.91	5.00	0.00
AREASOURCE	CAR34	5.00	a			6001327.32	2547439.97	5.00	0.00
						6001317.35	2547128.20	5.00	0.00
						6001300.73	2547130.19	5.00	0.00
						6001310.04	2547439.97	5.00	0.00
AREASOURCE	CAR35	5.00	a			6000767.59	2547458.59	5.00	0.00
						6000786.87	2547455.26	5.00	0.00
						6000778.89	2547144.82	5.00	0.00
						6000760.28	2547145.48	5.00	0.00
AREASOURCE	CAR36	5.00	a			6000818.11	2547086.98	5.00	0.00
						6000871.96	2547084.99	5.00	0.00
						6000873.95	2547070.36	5.00	0.00
						6000820.77	2547071.03	5.00	0.00
AREASOURCE	CAR37	5.00	a			6001201.68	2547078.34	5.00	0.00
						6001262.17	2547077.68	5.00	0.00
						6001261.51	2547061.72	5.00	0.00
						6001202.35	2547062.39	5.00	0.00
AREASOURCE	CAR38	5.00	a			5998198.01	2547414.31	5.00	0.00
						5998251.48	2547410.83	5.00	0.00
						5998251.48	2547390.70	5.00	0.00
						5998273.01	2547388.61	5.00	0.00
						5998268.84	2547155.97	5.00	0.00
						5998243.15	2547155.28	5.00	0.00
						5998241.76	2547135.14	5.00	0.00
						5998163.29	2547137.22	5.00	0.00
						5998163.29	2547160.14	5.00	0.00
						5998139.68	2547159.45	5.00	0.00
						5998148.01	2547395.56	5.00	0.00
						5998196.62	2547394.86	5.00	0.00
AREASOURCE	CAR39	5.00	a			6000711.08	2547459.25	5.00	0.00
						6000729.70	2547459.25	5.00	0.00
						6000721.06	2547144.82	5.00	0.00
						6000703.77	2547146.81	5.00	0.00
AREASOURCE	CAR40	5.00	a			5998685.64	2547375.84	5.00	0.00
						5998757.04	2547375.42	5.00	0.00
						5998750.09	2547149.03	5.00	0.00
						5998683.43	2547150.42	5.00	0.00
AREASOURCE	CAR41	5.00	a			6000177.94	2547496.48	5.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						6000678.51	2547483.85	5.00	0.00
						6000676.52	2547463.91	5.00	0.00
						6000176.61	2547475.87	5.00	0.00
AREASOURCE	CAR42	5.00	a			5998284.82	2547418.47	5.00	0.00
						5998693.15	2547409.45	5.00	0.00
						5998691.76	2547391.39	5.00	0.00
						5998285.51	2547401.81	5.00	0.00
AREASOURCE	CAR43	5.00	a			6000113.46	2547473.21	5.00	0.00
						6000130.74	2547471.22	5.00	0.00
						6000119.44	2547160.77	5.00	0.00
						6000104.15	2547162.10	5.00	0.00
AREASOURCE	CAR44	5.00	a			5998183.43	2547509.45	5.00	0.00
						5998202.18	2547508.75	5.00	0.00
						5998200.09	2547453.89	5.00	0.00
						5998180.65	2547452.50	5.00	0.00
AREASOURCE	CAR45	5.00	a			5999546.42	2547513.10	5.00	0.00
						6000010.42	2547499.80	5.00	0.00
						6000009.09	2547479.20	5.00	0.00
						5999548.41	2547492.49	5.00	0.00
AREASOURCE	CAR46	5.00	a			6000056.29	2547474.54	5.00	0.00
						6000074.90	2547476.54	5.00	0.00
						6000065.60	2547161.44	5.00	0.00
						6000044.99	2547163.43	5.00	0.00
AREASOURCE	CAR47	5.00	a			5998124.23	2546096.98	5.00	0.00
						5998293.50	2546091.77	5.00	0.00
						5998290.90	2546031.88	5.00	0.00
						5998126.83	2546034.48	5.00	0.00
AREASOURCE	CAR48	5.00	a			5999491.24	2547480.52	5.00	0.00
						5999509.19	2547478.53	5.00	0.00
						5999501.21	2547196.01	5.00	0.00
						5999483.26	2547196.01	5.00	0.00
AREASOURCE	CAR49	5.00	a			5998125.53	2546018.86	5.00	0.00
						5998487.51	2546013.65	5.00	0.00
						5998486.21	2545995.42	5.00	0.00
						5998512.25	2545992.81	5.00	0.00
						5998512.25	2545908.18	5.00	0.00
						5998486.21	2545906.88	5.00	0.00
						5998488.81	2545889.95	5.00	0.00
						5998129.44	2545897.76	5.00	0.00
						5998129.44	2545915.99	5.00	0.00
						5998107.30	2545918.60	5.00	0.00
						5998108.61	2546001.93	5.00	0.00
						5998125.53	2546003.23	5.00	0.00
AREASOURCE	CAR50	5.00	a			5998134.65	2546892.55	5.00	0.00
						5998204.96	2546889.95	5.00	0.00
						5998177.62	2546156.88	5.00	0.00
						5998108.61	2546162.09	5.00	0.00
AREASOURCE	CAR51	5.00	a			5998158.08	2547074.85	5.00	0.00
						5998311.73	2547070.94	5.00	0.00
						5998311.73	2547050.11	5.00	0.00
						5998328.66	2547050.11	5.00	0.00
						5998328.66	2546964.17	5.00	0.00
						5998302.62	2546965.47	5.00	0.00
						5998305.22	2546944.64	5.00	0.00
						5998186.73	2546948.54	5.00	0.00
						5998188.03	2546966.77	5.00	0.00
						5998139.86	2546971.98	5.00	0.00
						5998143.76	2547055.31	5.00	0.00
						5998158.08	2547052.71	5.00	0.00
AREASOURCE	CAR52	5.00	a			5999219.19	2547045.14	5.00	0.00
						5999370.37	2547042.29	5.00	0.00
						5999368.94	2547022.32	5.00	0.00
						5999390.33	2547022.32	5.00	0.00
						5999388.91	2546939.60	5.00	0.00
						5999367.51	2546939.60	5.00	0.00
						5999364.66	2546916.79	5.00	0.00
						5999212.06	2546921.06	5.00	0.00
						5999212.06	2546943.88	5.00	0.00
						5999196.37	2546945.31	5.00	0.00
						5999197.80	2547028.03	5.00	0.00
						5999219.19	2547026.60	5.00	0.00
AREASOURCE	DOCK01	8.00	a			5999625.65	2547036.58	8.00	0.00
						6001040.42	2547005.21	8.00	0.00
						6001036.14	2546889.69	8.00	0.00
						5999623.82	2546925.34	8.00	0.00
AREASOURCE	DOCK02	8.00	a			5997328.91	2547234.37	8.00	0.00
						5997858.82	2547223.56	8.00	0.00

Name	ID	Height			Coordinates			
		Begin		End	x	y	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
					5997858.82	2547160.47	8.00	0.00
					5997332.51	2547171.29	8.00	0.00
AREASOURCE	DOCK03	8.00	a		5997825.45	2546775.11	8.00	0.00
					5997895.76	2546772.50	8.00	0.00
					5997838.47	2545285.52	8.00	0.00
					5997775.97	2545285.52	8.00	0.00
AREASOURCE	DOCK04	8.00	a		5997958.26	2546764.69	8.00	0.00
					5998015.55	2546764.69	8.00	0.00
					5997963.47	2545280.31	8.00	0.00
					5997911.38	2545285.52	8.00	0.00
AREASOURCE	DOCK05	8.00	a		5997085.86	2546790.73	8.00	0.00
					5997150.97	2546790.73	8.00	0.00
					5997117.11	2545933.96	8.00	0.00
					5997057.22	2545936.56	8.00	0.00
AREASOURCE	DOCK06	8.00	a		5997208.26	2546788.13	8.00	0.00
					5997265.55	2546780.31	8.00	0.00
					5997226.49	2545543.34	8.00	0.00
					5997169.20	2545543.34	8.00	0.00
AREASOURCE	DOCK07	8.00	a		5997902.88	2545266.25	8.00	0.00
					5997962.77	2545263.65	8.00	0.00
					5997956.26	2545087.87	8.00	0.00
					5997917.20	2545086.56	8.00	0.00
					5997914.59	2545099.59	8.00	0.00
					5997897.67	2545102.19	8.00	0.00
AREASOURCE	DOCK08	8.00	a		5998330.61	2546891.90	8.00	0.00
					5999189.99	2546868.47	8.00	0.00
					5999184.78	2546811.17	8.00	0.00
					5998330.61	2546829.40	8.00	0.00
AREASOURCE	DOCK09	8.00	a		5998312.38	2546204.40	8.00	0.00
					5999163.94	2546193.99	8.00	0.00
					5999158.74	2546131.49	8.00	0.00
					5998312.38	2546152.32	8.00	0.00
AREASOURCE	DOCK10	8.00	a		5998309.29	2546075.34	8.00	0.00
					5999147.88	2546056.80	8.00	0.00
					5999153.59	2545998.33	8.00	0.00
					5998304.05	2546020.00	8.00	0.00
AREASOURCE	DOCK11	8.00	a		5999618.40	2546854.81	8.00	0.00
					6001038.75	2546820.09	8.00	0.00
					6001034.41	2546754.99	8.00	0.00
					5999617.31	2546794.05	8.00	0.00
AREASOURCE	DOCK12	8.00	a		5999595.61	2546180.99	8.00	0.00
					6001015.97	2546143.01	8.00	0.00
					6001013.80	2546082.24	8.00	0.00
					5999596.70	2546116.97	8.00	0.00
AREASOURCE	DOCK13	8.00	a		5999593.44	2546045.35	8.00	0.00
					6001008.37	2546014.97	8.00	0.00
					6001007.29	2545958.55	8.00	0.00
					5999589.10	2545990.01	8.00	0.00
AREASOURCE	DOCK14	8.00	a		5998512.67	2545815.66	8.00	0.00
					6001011.14	2545750.53	8.00	0.00
					6001013.28	2545688.60	8.00	0.00
					5998513.73	2545750.53	8.00	0.00
AREASOURCE	DOCK15	8.00	a		5998490.24	2545137.65	8.00	0.00
					6000986.58	2545076.79	8.00	0.00
					6000986.58	2545018.07	8.00	0.00
					5998490.24	2545077.86	8.00	0.00
AREASOURCE	DOCK16	8.00	a		5998490.24	2545006.32	8.00	0.00
					6000982.31	2544947.60	8.00	0.00
					6000982.31	2544884.60	8.00	0.00
					5998488.11	2544950.80	8.00	0.00
AREASOURCE	DOCK17	8.00	a		5998525.48	2545998.24	8.00	0.00
					6001014.35	2545933.11	8.00	0.00
					6001010.07	2545823.13	8.00	0.00
					5998521.21	2545886.13	8.00	0.00
AREASOURCE	DOCK18	8.00	a		6001610.14	2545604.25	8.00	0.00
					6002244.36	2545592.51	8.00	0.00
					6002245.43	2545536.98	8.00	0.00
					6001606.93	2545555.13	8.00	0.00
AREASOURCE	DOCK19	8.00	a		6001608.00	2545737.72	8.00	0.00
					6002205.93	2545725.97	8.00	0.00
					6002204.86	2545661.91	8.00	0.00
					6001608.00	2545678.99	8.00	0.00
AREASOURCE	DOCK20	8.00	a		6001586.91	2545087.97	8.00	0.00
					6002184.27	2545072.65	8.00	0.00
					6002182.81	2545008.47	8.00	0.00
					6001587.64	2545026.70	8.00	0.00
AREASOURCE	DOCK21	8.00	a		6001583.99	2544952.30	8.00	0.00

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
						6002219.28	2544936.99	8.00	0.00
						6002219.28	2544882.28	8.00	0.00
						6001582.53	2544897.60	8.00	0.00
AREASOURCE	DOCK22	8.00	a			6001631.41	2546394.75	8.00	0.00
						6002226.58	2546376.27	8.00	0.00
						6002224.64	2546316.95	8.00	0.00
						6001630.44	2546332.51	8.00	0.00
AREASOURCE	DOCK23	8.00	a			6000880.60	2547201.32	8.00	0.00
						6001196.36	2547194.01	8.00	0.00
						6001195.03	2547130.19	8.00	0.00
						6000881.26	2547139.50	8.00	0.00
AREASOURCE	DOCK24	8.00	a			6000883.26	2547089.64	8.00	0.00
						6001193.04	2547080.34	8.00	0.00
						6001194.37	2547053.75	8.00	0.00
						6000882.59	2547062.39	8.00	0.00
AREASOURCE	DOCK25	8.00	a			6000201.87	2547217.28	8.00	0.00
						6000624.00	2547205.98	8.00	0.00
						6000623.33	2547144.82	8.00	0.00
						6000203.87	2547155.45	8.00	0.00
AREASOURCE	DOCK26	8.00	a			6000200.54	2547104.27	8.00	0.00
						6000617.35	2547095.63	8.00	0.00
						6000618.68	2547069.70	8.00	0.00
						6000199.88	2547081.00	8.00	0.00
AREASOURCE	DOCK27	8.00	a			5999589.63	2547233.90	8.00	0.00
						5999959.90	2547223.93	8.00	0.00
						5999956.58	2547162.10	8.00	0.00
						5999588.30	2547170.08	8.00	0.00
AREASOURCE	DOCK28	8.00	a			5999588.96	2547119.56	8.00	0.00
						5999954.58	2547110.92	8.00	0.00
						5999953.92	2547084.32	8.00	0.00
						5999587.63	2547096.96	8.00	0.00
AREASOURCE	DOCK29	8.00	a			5998337.82	2547073.66	8.00	0.00
						5999192.09	2547050.85	8.00	0.00
						5999180.69	2546926.77	8.00	0.00
						5998337.82	2546949.59	8.00	0.00
AREASOURCE	DOCK30	8.00	a			6001628.50	2546259.57	8.00	0.00
						6002266.46	2546245.95	8.00	0.00
						6002266.46	2546187.60	8.00	0.00
						6001626.55	2546205.11	8.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
BUILDING			BLDG_11	x	0		25.00	a	5997238.79	2547515.55	25.00	0.00
									5997966.97	2547493.92	25.00	0.00
									5997956.15	2547160.47	25.00	0.00
									5997858.82	2547160.47	25.00	0.00
									5997858.82	2547223.56	25.00	0.00
									5997328.91	2547234.37	25.00	0.00
									5997332.51	2547171.29	25.00	0.00
									5997233.38	2547176.69	25.00	0.00
BUILDING			BLDG_12	x	0		25.00	a	5998280.59	2547394.79	25.00	0.00
									5998686.14	2547383.97	25.00	0.00
									5998677.13	2547237.98	25.00	0.00
									5998275.18	2547246.99	25.00	0.00
BUILDING			BUILDING00003	x	0		25.00	a	5998201.55	2547563.66	25.00	0.00
									5998277.24	2547560.88	25.00	0.00
									5998273.77	2547536.57	25.00	0.00
									5998200.86	2547539.35	25.00	0.00
BUILDING			BUILDING00004	x	0		25.00	a	5998382.80	2547566.43	25.00	0.00
									5998454.33	2547563.66	25.00	0.00
									5998452.24	2547528.24	25.00	0.00
									5998381.41	2547531.71	25.00	0.00
BUILDING			BUILDING00005	x	0		25.00	a	5998634.82	2547552.50	25.00	0.00
									5998716.07	2547551.81	25.00	0.00
									5998718.15	2547524.72	25.00	0.00
									5998632.73	2547529.58	25.00	0.00
BUILDING			BUILDING00006	x	0		45.00	a	5997213.47	2546907.92	45.00	0.00
									5997895.76	2546892.29	45.00	0.00
									5997895.76	2546772.50	45.00	0.00
									5997825.45	2546775.11	45.00	0.00
									5997775.97	2545285.52	45.00	0.00
									5997838.47	2545285.52	45.00	0.00
									5997838.47	2545160.52	45.00	0.00
									5997218.67	2545176.15	45.00	0.00

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
									5997265.55	2546780.31	45.00	0.00
									5997208.26	2546788.13	45.00	0.00
BUILDING			BUILDING00007	x	0		45.00	a	5998204.96	2546889.95	45.00	0.00
									5998330.61	2546891.90	45.00	0.00
									5998330.61	2546829.40	45.00	0.00
									5999184.78	2546811.17	45.00	0.00
									5999189.99	2546868.47	45.00	0.00
									5999309.78	2546863.26	45.00	0.00
									5999283.74	2546126.28	45.00	0.00
									5999158.74	2546131.49	45.00	0.00
									5999163.94	2546193.99	45.00	0.00
									5998312.38	2546204.40	45.00	0.00
									5998312.38	2546152.32	45.00	0.00
									5998177.62	2546156.88	45.00	0.00
BUILDING			BUILDING00008	x	0		45.00	a	5999500.13	2546856.98	45.00	0.00
									5999618.40	2546854.81	45.00	0.00
									5999617.31	2546794.05	45.00	0.00
									6001034.41	2546754.99	45.00	0.00
									6001038.75	2546820.09	45.00	0.00
									6001148.35	2546814.67	45.00	0.00
									6001127.73	2546082.24	45.00	0.00
									6001013.80	2546082.24	45.00	0.00
									6001015.97	2546143.01	45.00	0.00
									5999595.61	2546180.99	45.00	0.00
									5999596.70	2546116.97	45.00	0.00
									5999483.85	2546122.39	45.00	0.00
BUILDING			BUILDING00009	x	0		45.00	a	5998513.73	2545750.53	45.00	0.00
									6001013.28	2545688.60	45.00	0.00
									6001011.14	2545750.53	45.00	0.00
									6001116.85	2545748.39	45.00	0.00
									6001092.29	2545010.60	45.00	0.00
									6000986.58	2545018.07	45.00	0.00
									6000986.58	2545076.79	45.00	0.00
									5998490.24	2545137.65	45.00	0.00
									5998490.24	2545077.86	45.00	0.00
									5998383.47	2545078.93	45.00	0.00
									5998406.96	2545815.66	45.00	0.00
									5998512.67	2545815.66	45.00	0.00
BUILDING			BUILDING00010	x	0		45.00	a	6001501.23	2546128.50	45.00	0.00
									6002218.74	2546110.35	45.00	0.00
									6002205.93	2545725.97	45.00	0.00
									6001608.00	2545737.72	45.00	0.00
									6001608.00	2545678.99	45.00	0.00
									6001484.14	2545682.19	45.00	0.00
BUILDING			BUILDING00011	x	0		45.00	a	6001478.96	2545474.54	45.00	0.00
									6002197.39	2545459.22	45.00	0.00
									6002184.27	2545072.65	45.00	0.00
									6001586.91	2545087.97	45.00	0.00
									6001587.64	2545026.70	45.00	0.00
									6001465.10	2545031.08	45.00	0.00
BUILDING			BUILDING00012	x	0		45.00	a	6001527.36	2546779.86	45.00	0.00
									6002236.31	2546764.30	45.00	0.00
									6002226.58	2546376.27	45.00	0.00
									6001631.41	2546394.75	45.00	0.00
									6001630.44	2546332.51	45.00	0.00
									6001506.93	2546335.42	45.00	0.00
BUILDING			BUILDING00013	x	0		45.00	a	6000812.13	2547454.60	45.00	0.00
									6001285.44	2547444.63	45.00	0.00
									6001282.78	2547408.73	45.00	0.00
									6001298.74	2547409.39	45.00	0.00
									6001293.42	2547126.87	45.00	0.00
									6001195.03	2547130.19	45.00	0.00
									6001196.36	2547194.01	45.00	0.00
									6000880.60	2547201.32	45.00	0.00
									6000881.26	2547139.50	45.00	0.00
									6000786.20	2547140.83	45.00	0.00
									6000795.51	2547364.86	45.00	0.00
									6000796.17	2547418.70	45.00	0.00
									6000811.46	2547418.04	45.00	0.00
BUILDING			BUILDING00014	x	0		45.00	a	6000156.67	2547470.55	45.00	0.00
									6000688.48	2547457.26	45.00	0.00
									6000685.82	2547423.35	45.00	0.00
									6000703.77	2547423.35	45.00	0.00
									6000695.79	2547144.15	45.00	0.00
									6000623.33	2547144.82	45.00	0.00
									6000624.00	2547205.98	45.00	0.00
									6000201.87	2547217.28	45.00	0.00

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
									6000203.87	2547155.45	45.00	0.00
									6000128.09	2547158.11	45.00	0.00
									6000139.39	2547437.31	45.00	0.00
									6000156.67	2547436.65	45.00	0.00
BUILDING			BUILDING00015	x	0		45.00	a	5999535.78	2547485.84	45.00	0.00
									6000029.70	2547477.20	45.00	0.00
									6000030.36	2547439.31	45.00	0.00
									6000045.65	2547438.64	45.00	0.00
									6000039.01	2547158.78	45.00	0.00
									5999956.58	2547162.10	45.00	0.00
									5999959.90	2547223.93	45.00	0.00
									5999589.63	2547233.90	45.00	0.00
									5999588.30	2547170.08	45.00	0.00
									5999507.86	2547172.74	45.00	0.00
									5999515.84	2547453.27	45.00	0.00
									5999533.79	2547453.27	45.00	0.00

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS

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14267 - AVCC

CadnaA Noise Prediction Model: 14267-02_Construction.cna
Date: 14.10.23
Analyst: B. Lawson

Calculation Configuration

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

Receiver Noise Levels

Name	M.	ID	Level Lr			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	57.8	-49.2	54.8	50.0	45.0	0.0				5.00	a	5998323.52	2547717.57	5.00
RECEIVERS		R2	54.0	-53.0	51.0	50.0	45.0	0.0				5.00	a	5998740.19	2548183.72	5.00
RECEIVERS		R3	53.5	-53.5	50.5	50.0	45.0	0.0				5.00	a	5999507.67	2548300.53	5.00
RECEIVERS		R4	51.2	-55.8	48.2	50.0	45.0	0.0				5.00	a	5996483.88	2548114.54	5.00
RECEIVERS		R5	54.9	-52.1	51.9	50.0	45.0	0.0				5.00	a	5996690.91	2545526.12	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		Construction01	122.6	15.6	15.6	61.5	-45.5	-45.5	PWL-Pt	115.6					8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	Construction01	8.00	a			5996837.44	2547614.92	8.00	0.00
						5998062.42	2547583.95	8.00	0.00
						5998089.07	2547556.60	8.00	0.00
						5998130.14	2547561.08	8.00	0.00
						5998187.26	2547567.32	8.00	0.00
						5998214.61	2547593.98	8.00	0.00
						5998815.18	2547574.31	8.00	0.00
						5998816.66	2547112.61	8.00	0.00
						5999459.05	2547103.19	8.00	0.00
						5999468.74	2547103.05	8.00	0.00

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				5999469.55	2547554.86	8.00	0.00
				6001345.80	2547518.61	8.00	0.00
				6001372.74	2547490.07	8.00	0.00
				6001410.51	2547494.92	8.00	0.00
				6001463.83	2547501.78	8.00	0.00
				6001494.55	2547528.14	8.00	0.00
				6002303.18	2547522.64	8.00	0.00
				6002292.37	2546877.00	8.00	0.00
				6002281.63	2546236.04	8.00	0.00
				6002279.21	2546143.99	8.00	0.00
				6002252.49	2545130.70	8.00	0.00
				6002243.92	2544805.68	8.00	0.00
				6001356.29	2544818.69	8.00	0.00
				5998100.71	2544886.01	8.00	0.00
				5998092.96	2544886.96	8.00	0.00
				5998085.49	2544889.20	8.00	0.00
				5998078.51	2544892.67	8.00	0.00
				5998072.20	2544897.26	8.00	0.00
				5998066.77	2544902.86	8.00	0.00
				5998062.35	2544909.29	8.00	0.00
				5998059.08	2544916.37	8.00	0.00
				5998057.05	2544923.90	8.00	0.00
				5998057.05	2544979.08	8.00	0.00
				5997126.92	2545008.44	8.00	0.00

APPENDIX 10.2:

CADNAA NIGHTTIME CONCRETE POUR CONSTRUCTION NOISE MODEL INPUTS

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14267 - AVCC

CadnaA Noise Prediction Model: 14267-02_Pour.cna
Date: 14.10.23
Analyst: B. Lawson

Calculation Configuration

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

Receiver Noise Levels

Name	M.	ID	Level Lr			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	42.5	-64.4	39.5	50.0	45.0	0.0				5.00	a	5998323.52	2547717.57	5.00
RECEIVERS		R2	38.7	-68.0	35.7	50.0	45.0	0.0				5.00	a	5998740.19	2548183.72	5.00
RECEIVERS		R3	38.2	-68.5	35.2	50.0	45.0	0.0				5.00	a	5999507.67	2548300.53	5.00
RECEIVERS		R4	35.9	-70.6	32.9	50.0	45.0	0.0				5.00	a	5996483.88	2548114.54	5.00
RECEIVERS		R5	39.6	-67.2	36.6	50.0	45.0	0.0				5.00	a	5996690.91	2545526.12	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		Construction01	107.3	0.3	0.3	46.2	-60.8	-60.8	PWL-Pt	100.3					8	a

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	Construction01	8.00	a			5996837.44	2547614.92	8.00	0.00
						5998062.42	2547583.95	8.00	0.00
						5998089.07	2547556.60	8.00	0.00
						5998130.14	2547561.08	8.00	0.00
						5998187.26	2547567.32	8.00	0.00
						5998214.61	2547593.98	8.00	0.00
						5998815.18	2547574.31	8.00	0.00
						5998816.66	2547112.61	8.00	0.00
						5999459.05	2547103.19	8.00	0.00
						5999468.74	2547103.05	8.00	0.00

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				5999469.55	2547554.86	8.00	0.00
				6001345.80	2547518.61	8.00	0.00
				6001372.74	2547490.07	8.00	0.00
				6001410.51	2547494.92	8.00	0.00
				6001463.83	2547501.78	8.00	0.00
				6001494.55	2547528.14	8.00	0.00
				6002303.18	2547522.64	8.00	0.00
				6002292.37	2546877.00	8.00	0.00
				6002281.63	2546236.04	8.00	0.00
				6002279.21	2546143.99	8.00	0.00
				6002252.49	2545130.70	8.00	0.00
				6002243.92	2544805.68	8.00	0.00
				6001356.29	2544818.69	8.00	0.00
				5998100.71	2544886.01	8.00	0.00
				5998092.96	2544886.96	8.00	0.00
				5998085.49	2544889.20	8.00	0.00
				5998078.51	2544892.67	8.00	0.00
				5998072.20	2544897.26	8.00	0.00
				5998066.77	2544902.86	8.00	0.00
				5998062.35	2544909.29	8.00	0.00
				5998059.08	2544916.37	8.00	0.00
				5998057.05	2544923.90	8.00	0.00
				5998057.05	2544979.08	8.00	0.00
				5997126.92	2545008.44	8.00	0.00

APPENDIX 11.1:

RAILROAD INPUTS

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U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
03 / 21 / 2023	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	750642H

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
Southern California Regional Rail Authority [SCAX]	CALIFORNIA	LOS ANGELES

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near LANCASTER	COLUMBIA WY / AVENUE M (Street/Road Name) | * (Block Number)	L

7. Do Other Railroads Operate a Separate Track at Crossing? ☒ Yes ☐ No	8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR: UP	If Yes, Specify RR:

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☒ None	☐ None Valley	☒ None	VY | 0073.02 | (prefix) | (nnnn.nnn) | (suffix)

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR (if applicable)	16. Crossing Owner (if applicable)
101VY-7302	Palmdale	☐ N/A SCAX	☐ N/A SCAX

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access (if Private Crossing)	21. Type of Train		22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☐ Freight ☐ Intercity Passenger ☒ Commuter	☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	☐ Less Than One Per Day ☒ Number Per Day 22

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone (FRA provided)
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 34.6458600	(WGS84 std: -nnn.nnnnnnn) -118.1279600	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use *
101VY-73.02	001B-409.10, 101VY-73.02
30.B. Railroad Use *	31.B. State Use *
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use *
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) *

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
888-446-9721	800-371-5465	415-703-3722

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
17	5	0	22	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2023	3.A. Maximum Timetable Speed (mph) 79 3.B. Typical Speed Range Over Crossing (mph) From 60 to 79

4. Type and Count of Tracks
Main 1 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection (Main Track only)
☒ Constant Warning Time ☐ Motion Detection ☐AFO ☒ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
03/21/2023		750642H

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1) (count)*	2.C. YIELD Signs *(R1-2) (count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☐ None
0	0	0	☒ W10-1 2 ☐ W10-3 ☐ W10-11 ☒ W10-2 2 ☐ W10-4 ☐ W10-12

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☒ All Approaches ☒ Median ☐ One Approach ☐ None	☐ Yes ☒ No	☒ Yes ☐ No

2.J. Other MUTCD Signs ☒ Yes ☐ No	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
Specify Type R15-2P Count 7 Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 4	3.E. Total Count of Flashing Light Pairs
Roadway 4 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☒ Median Gates	Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☐ Incandescent ☒ LED ☒ Back Lights Included ☐ Side Lights Included	6

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	1

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☒ Yes ☐ No	☐ Not Interconnected ☒ For Traffic Signals ☐ For Warning Signs	☒ Simultaneous ☐ Advance	☐ Yes ☒ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☐ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 6	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * 31 Length * 97

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* _____	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☒ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☒ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	60 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2021 AADT 26800	4 %	☒ Yes ☐ No Average Number per Day _____	☒ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.

APPENDIX 11.2:

RAILROAD FTA NOISE LEVEL CALCULATIONS

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Project: 14267
Receiver: Worst-Case Façade

	Source	Distance	Project Leqh	Existing Leqh	Noise Criteria Mod. Impact	Noise Criteria Sev. Impact	Impact?
1	Diesel Electric Locomotive	270 ft	40.4 dBA	71 dBA	70 dBA	75 dBA	None
2	Rail Car	270 ft	48.2 dBA	71 dBA	70 dBA	75 dBA	None
3	Diesel Multiple Unit (DMU)	270 ft	41.8 dBA	71 dBA	70 dBA	75 dBA	None
4	Rail Car	270 ft	53.5 dBA	71 dBA	70 dBA	75 dBA	None
5	--	ft		71 dBA	70 dBA	75 dBA	
6	--	ft		71 dBA	70 dBA	75 dBA	
	Combined Sources		**55 dBA**	**71 dBA**	**70 dBA**	**75 dBA**	**None**

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