

Appendix J Noise and Vibration Analysis

Appendices

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Irwindale Gateway Specific Plan

NOISE AND VIBRATION ANALYSIS

CITY OF IRWINDALE

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LIST OF ABBREVIATED TERMS

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

EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Irwindale Gateway Specific Plan development (“Project”). The Project site is located at 13620 Live Oak Lane in the City of Irwindale. The Project is a proposed development of an industrial logistics, distribution center, associated parking, and loading docks. The project site is currently a vacant lot that is used for a variety of industrial and commercial uses, as well as stockpiled materials and debris. This noise study has been prepared to satisfy applicable City of Irwindale noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

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

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Off-Site Traffic Noise	7	<i>Less Than Significant</i>	-
Operational Noise	9	<i>Less Than Significant</i>	-
Construction Noise	10	<i>Less Than Significant</i>	-
Off-Site Construction Noise		<i>Less Than Significant</i>	-
Construction Vibration		<i>Less Than Significant</i>	-

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1 INTRODUCTION

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

1.1 SITE LOCATION

The proposed Project is located at 13620 Live Oak Lane in the City of Irwindale, as shown on Exhibit 1-A. The project site is bordered by Interstate 605 (I-605) to the west, Live Oak Lane to the north and east, and Live Oak Avenue to the south.

1.2 PROJECT DESCRIPTION

The Project proposes the development of an industrial logistics, distribution center, associated parking, and loading docks. The project site is currently a vacant lot that is used for a variety of industrial and commercial uses, as well as stockpiled materials and debris. The Project includes the following two development options.

Option 1: Project Option 1 as shown on Exhibit 1-B would redevelop the project site with three new industrial buildings providing 982,796 square feet of building space – 954,796 square feet of warehouse space and 28,000 square feet of office space. A variety of general warehousing and manufacturing tenants could be accommodated in the three buildings. The proposed project would include a total of 918 standard vehicle parking spaces and 346 trailer parking spaces. In addition, the proposed project would also include approximately 253,736 square feet (5.8 acres) of landscaping.

Option 2 – Project Option 2 as shown on Exhibit 1-C would include two industrial building providing of 704,070 square feet of building space – 668,070 square feet of warehouse space, 36,000 square feet of office space, and a 400-megawatt battery energy storage system (BESS) on approximately 16 acres. The preliminary design for the BESS includes 890 metal enclosures (712 containers and 178 augmentation containers) measuring 8’ – 10’ high by 29’ – 11” long by 5’ – 5” wide, housing lithium-ion batteries, 100 power conversion systems and medium voltage transformers, and one substation. Batteries could be double stacked, which would require a higher metal enclosure but take up less space. In addition, the parking for this option would include a total of 617 standard vehicle spaces and 257 trailer spaces, and landscaping would cover 185,782 square feet (4.3 acres).

EXHIBIT 1-A: LOCATION MAP

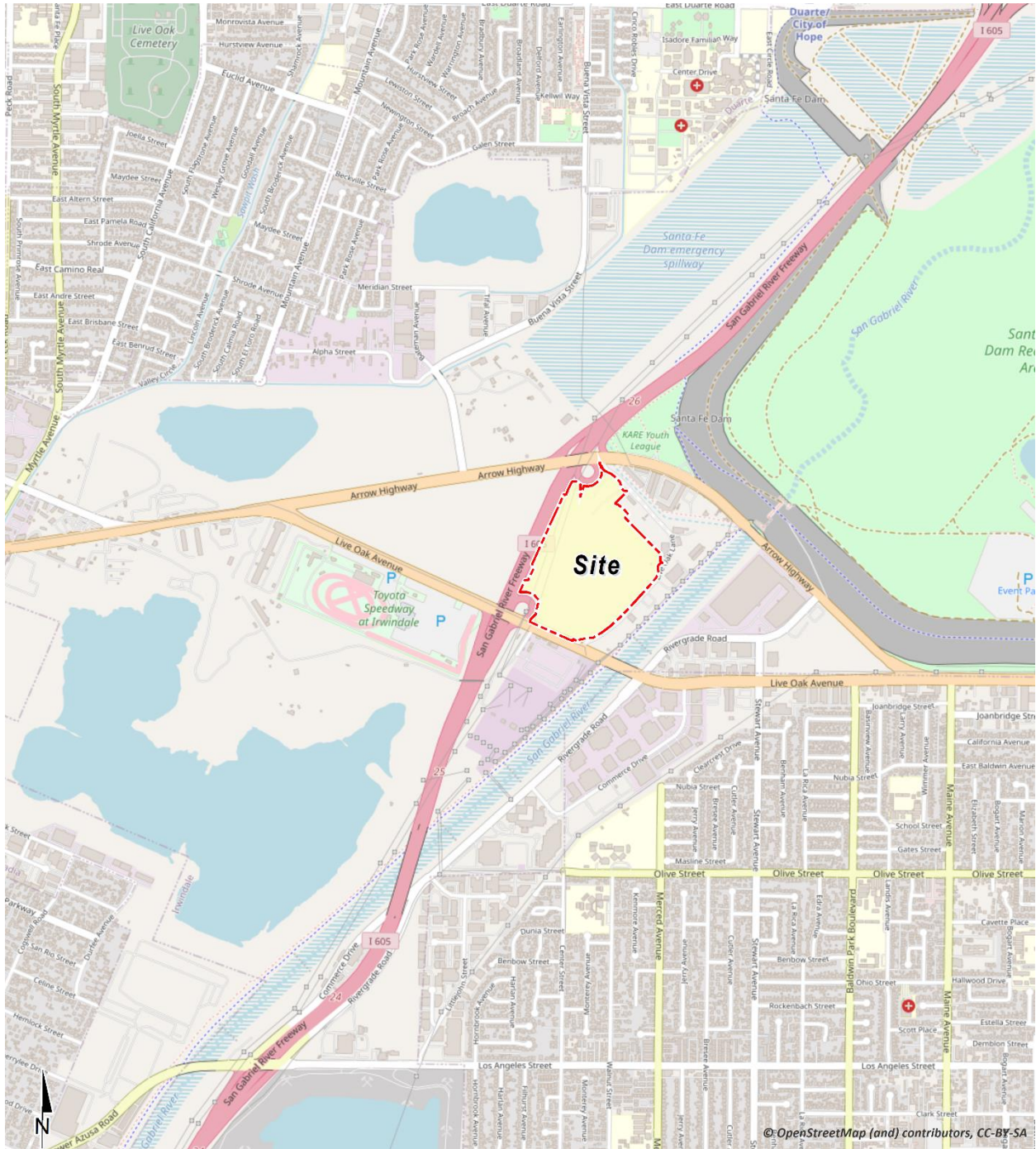
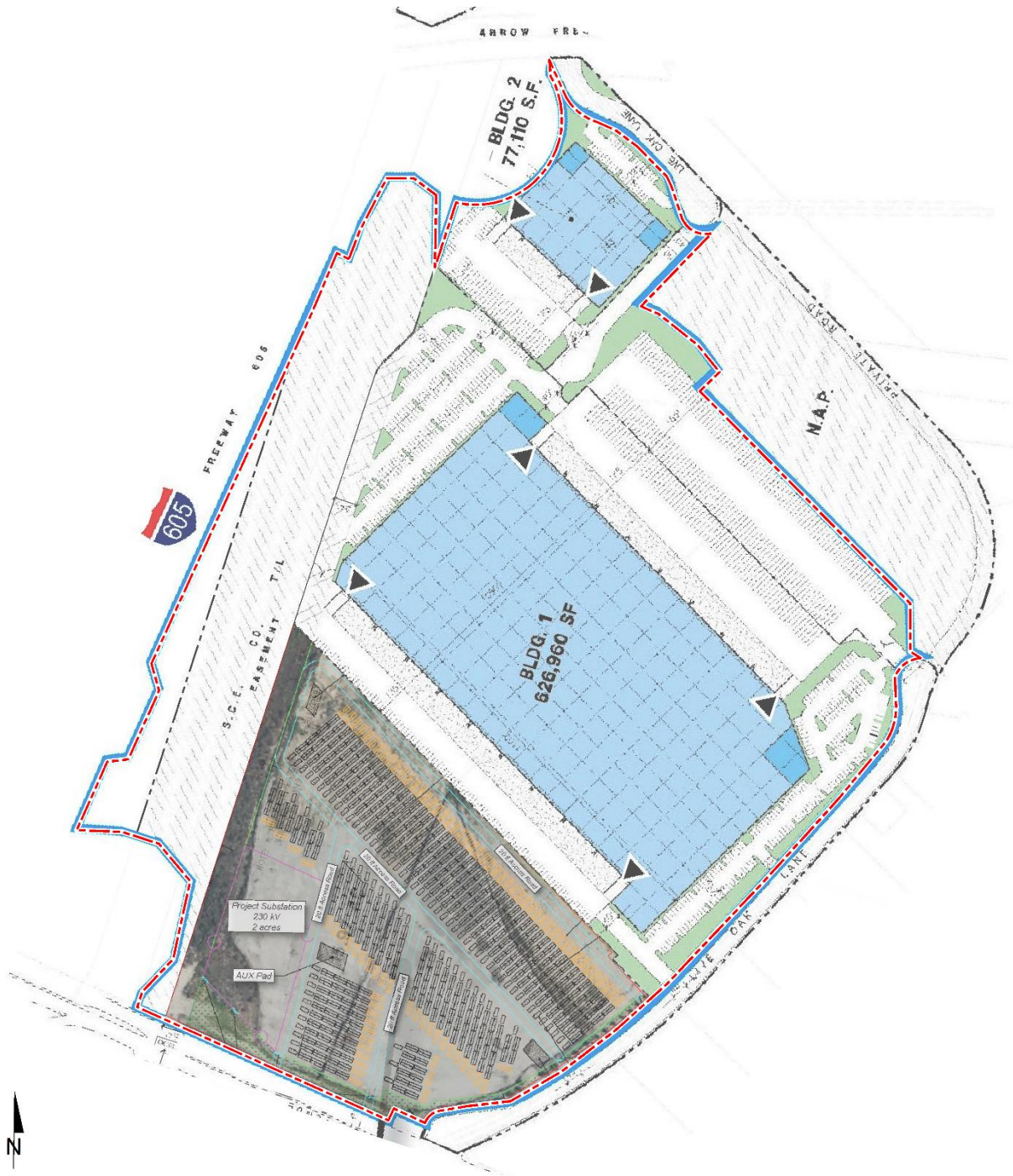


EXHIBIT 1-C: OPTION 2 SITE PLAN



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	SPEECH INTERFERENCE
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	LOUD	
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70		
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60	MODERATE	SLEEP DISTURBANCE
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50		
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40	FAINT	NO EFFECT
QUIET SUBURBAN NIGHTTIME	LIBRARY	30		
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 Irwindale relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

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

2.3.1 GEOMETRIC SPREADING

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

2.3.2 GROUND ABSORPTION

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

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

2.3.3 ATMOSPHERIC EFFECTS

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

2.3.4 SHIELDING

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

2.4 NOISE CONTROL

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

2.5 NOISE BARRIER ATTENUATION

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

2.6 LAND USE COMPATIBILITY WITH NOISE

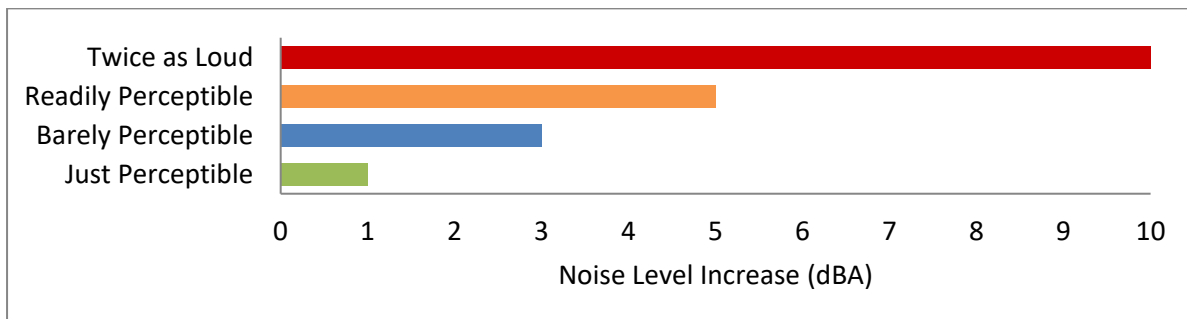
Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development,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

2.7 COMMUNITY RESPONSE TO NOISE

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

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

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



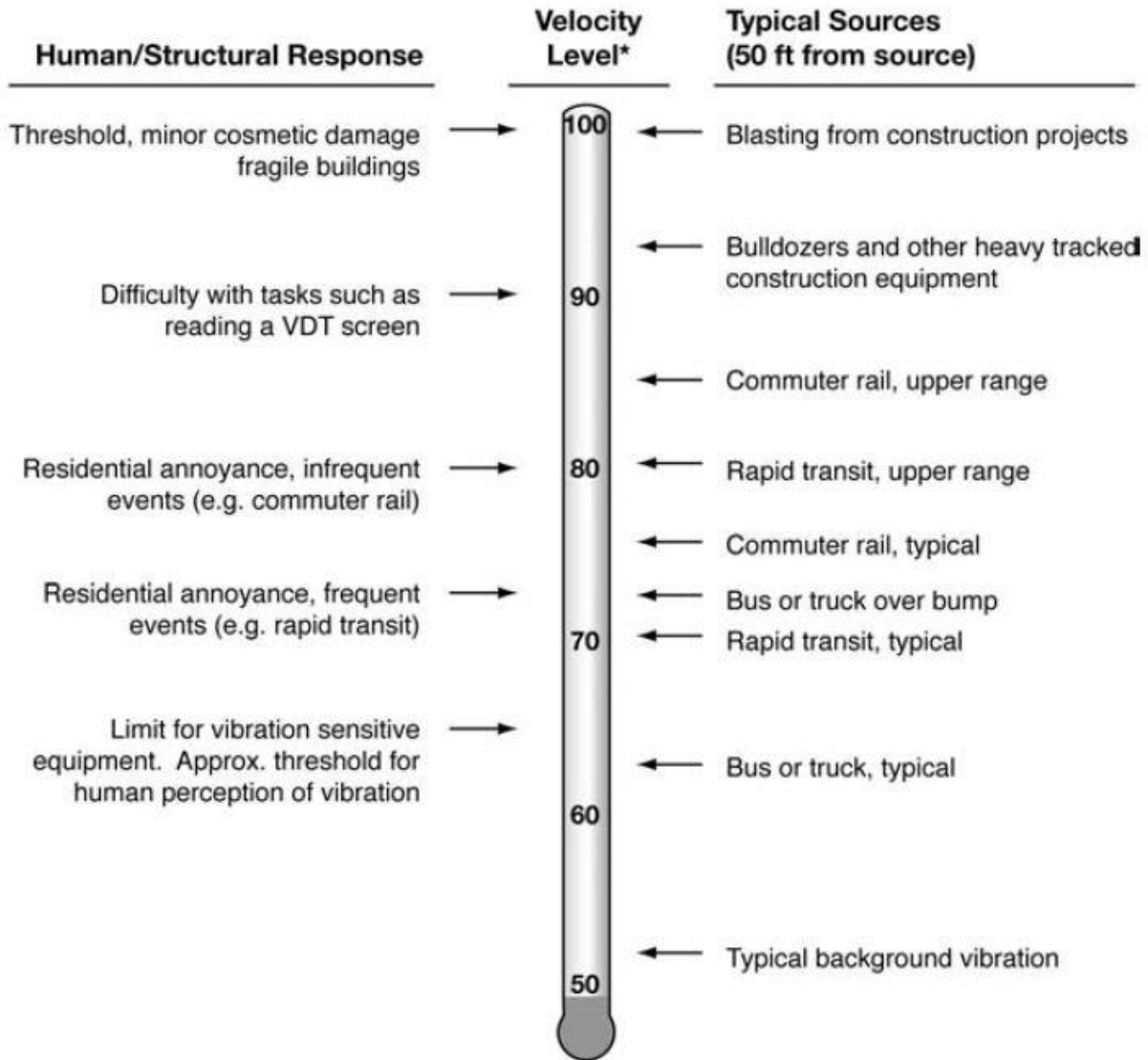
2.8 VIBRATION

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

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

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

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



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

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

3 REGULATORY SETTING

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

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

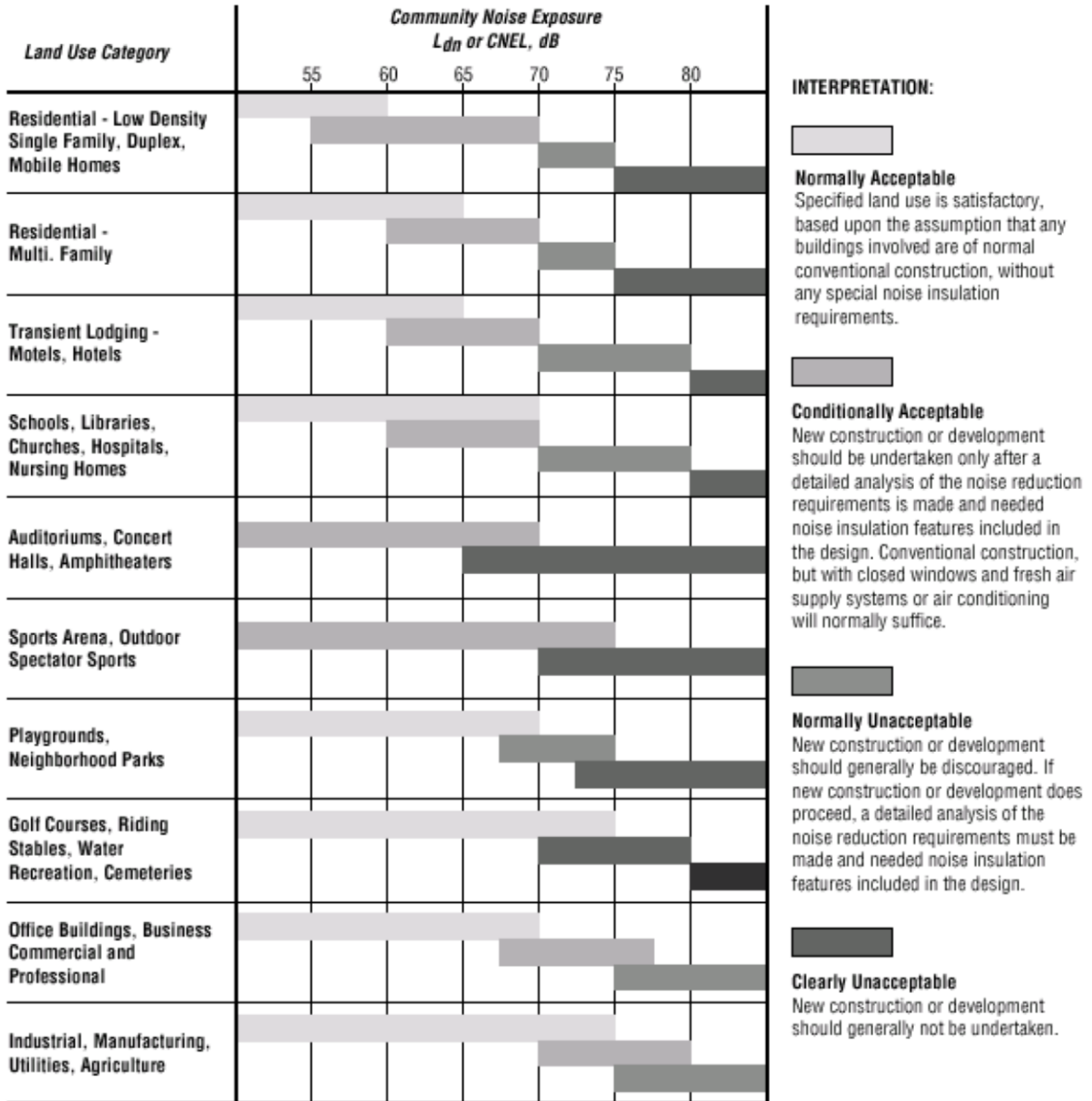
The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise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

3.2 CITY OF IRWINDALE GENERAL PLAN NOISE ELEMENT

The Public Safety Element of the City of Irwindale General Plan identifies land use noise compatibility criteria consistent with the California Office of Planning and Research (OPR) *General Plan Guidelines*. (9) The purpose of the land use noise compatibility criteria is to *limit the exposure of the community to excessive noise levels*. The *General Plan Guidelines* consider land use compatibility and identify exterior noise level compatibility criteria for transportation related noise. The OPR land use noise compatibility criteria are found in Figure 2 of the *General Plan Guidelines, Appendix D: Noise Element Guidelines* as shown on Exhibit 3-A.

The *Land Use Noise Compatibility Criteria* describes categories of compatibility and not specific noise standards. As shown on Exhibit 3-A, noise-sensitive residential uses are *normally acceptable* with exterior noise levels below 60 dBA CNEL and *conditionally acceptable* with noise levels of less than 70 dBA CNEL. Industrial uses, such as the Project, are *normally acceptable* with exterior noise levels below 75 dBA CNEL.

EXHIBIT 3-A: LAND USE NOISE COMPATIBILITY CRITERIA



Source: OPR General Plan Guidelines, Appendix D: Noise Element Guidelines, Figure 2.

3.3 OPERATIONAL NOISE STANDARDS

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

Although the Project site is located within the City of Irwindale, nearby receiver locations are also located in the adjacent County of Los Angeles and the City of Baldwin Park. Therefore, to accurately describe the potential Project related operational noise levels, this analysis presents the appropriate operational noise standards for each of the noise-sensitive receivers located within each respective jurisdiction, as shown on Table 3-1.

TABLE 3-1: OPERATIONAL NOISE STANDARDS

Jurisdiction	Land Use	Exterior Noise Level Limit (dBA Leq)	
		Daytime (7am-10pm)	Nighttime (10pm-7am)
City of Irwindale ¹	Residential	50	45
	Commercial	55	50
	Industrial	70	60
County of Los Angeles ²	Residential	50	45
City of Baldwin Park ³	Residential	55	45

¹ City of Irwindale Municipal Code, Section 9.28.030 (Appendix 3.1).

² Los Angeles County Code Section 12.08.390[A] (Appendix 3.2).

³ City of Baldwin Park Municipal Code, Section 153.140.070 (Appendix 3.3)

3.3.1 CITY OF IRWINDALE OPERATIONAL NOISE STANDARDS

The City of Irwindale Municipal Code, Section 9.28.030, identifies the exterior noise level standards for receiving land uses in the City. (13) For residential uses, the daytime (7:00 a.m. to 10:00 p.m.) exterior noise level limit is 50 dBA Leq, and 45 dBA Leq during the nighttime hours (10:00 p.m. to 7:00 p.m.). Exterior noise levels at commercial uses shall not exceed 55 dBA Leq daytime and 50 dBA Leq nighttime, and at industrial uses, 70 dBA Leq daytime and 60 dBA Leq nighttime. Appendix 3.1 includes the City of Irwindale Municipal Code noise standards. Since the Project’s general industrial land use could potentially impact adjacent noise-sensitive uses in the Project study area, this noise study relies on the more conservative residential noise level standards to describe potential Project related operational noise impacts.

3.3.2 COUNTY OF LOS ANGELES OPERATIONAL NOISE STANDARDS

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. For residential properties, the exterior noise level must not exceed 50 dBA Leq during the daytime hours (7:00 a.m. to 10:00 p.m.) and 45 dBA Leq 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.

3.3.3 CITY OF BALDWIN PARK OPERATIONAL NOISE STANDARDS

For noise-sensitive residential properties, the City of Baldwin Park Municipal Code, Section 130.34[A], states that *it is unlawful for any person within the city to make, cause or allow to be produced noise which is received on property occupied by another person within the designated zone, in excess of the following levels, except as expressly provided otherwise herein.* In addition, Section 130.34[A] identifies ambient base noise levels (ABNL) stationary-source noise level limits by land use zone for the daytime (7:00 a.m. to 10:00 p.m.) hours and the nighttime (10:00 p.m. to 7:00 a.m.) hours. For the nearby noise sensitive residential land use, the municipal code identifies a noise level limit of 55 dBA L_{eq} anytime during the daytime and 45 dBA L_{eq} during the nighttime. The City of Baldwin Park Municipal Code Noise Standards are included in Appendix 3.3.

A review of the operational noise criteria for City of Irwindale, Los Angeles County and the City of Baldwin Park shows that the City of Irwindale maintains the most restrictive exterior noise standards for residential land use. Therefore, this analysis relies on the lower and more conservative City of Irwindale Municipal exterior noise criteria exterior noise level limit is 50 dBA L_{eq} , and 45 dBA L_{eq} for noise-sensitive residential land use.

3.4 CONSTRUCTION NOISE STANDARDS

The City of Irwindale has set restrictions to control noise impacts associated with the construction of the proposed Project. Municipal Code, Section 9.28.110, indicates that construction activity is limited to the hours of 7:00 a.m. to 7:00 p.m. and cannot constitute a violation of Section 9.28.040 unless authorized by a building inspector. Section 9.28.040 identifies the construction noise level threshold for use in this noise study and indicates that Project construction noise levels shall not exceed the base exterior noise level standard or the ambient noise level by more than 5 dBA at sensitive receiver locations. (14)

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 Irwindale Gateway Specific Plan, vibration-generating activities are appropriately evaluated against standards established under the Municipal Code if such standards exist. However, the City of Irwindale does not identify specific construction vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (12 p. 38) Table 19, vibration damage are used in this noise study to

assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as “older residential structures” with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

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4 SIGNIFICANCE CRITERIA

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

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

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*. (14) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment. In general, the more a new noise 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) (15) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations 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*. (14) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, a *readily perceptible* 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. Per the FICON, in areas where the without project noise levels

range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance at noise sensitive receiver locations are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (16 p. 2_48).

4.1.2 NON-NOISE-SENSITIVE RECEIVERS

The *Land Use Compatibility Criteria* outlined in Section 3.2 was used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the *normally acceptable* exterior noise level for the Project related non-noise-sensitive warehouse/industrial land use is 75 dBA CNEL. To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a *barely perceptible* 3 dBA criteria is used. When the without Project noise levels are greater than the *normally acceptable* 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 *normally acceptable* 75 dBA CNEL exterior noise level criteria outlined in *Land Use Noise Compatibility Criteria* for warehouse/industrial land use.

4.2 VIBRATION (THRESHOLD B)

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

4.3 CEQA GUIDELINES NOT FURTHER ANALYZED (THRESHOLD C)

The Project site is not located within two miles of a public airport or within an airport land use plan. The closest airport is the San Gabriel Valley Airport located over 3.2 miles southwest of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to Guideline 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	Receiving 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	Noise-Sensitive	Exterior Noise Level Standards ³	50 dBA Leq	45 dBA Leq
		If ambient is < 60 dBA Leq ¹	≥ 5 dBA Leq Project increase	
		If ambient is 60 - 65 dBA Leq ¹	≥ 3 dBA Leq Project increase	
		If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA Leq Project increase	
Construction	Noise-Sensitive	Noise Level Increase Threshold ⁴	≥ 5 dBA dBA Leq Project increase	
		Vibration Level Threshold ⁵	0.3 PPV (in/sec)	

¹ FICON, 1992.

² California Office of Planning and Research (OPR) General Plan Guidelines Land Use Noise Compatibility Criteria.

³ City of Irwindale Municipal Code, Section 9.28.030 (Appendix 3.1).

⁴ City of Irwindale Municipal Code, Section 9.28.040 (Appendix 3.1).

⁵ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19

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

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at five locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Wednesday, April 26, 2023. 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 and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (17)

5.2 NOISE MEASUREMENT LOCATIONS

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

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

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

5.3 NOISE MEASUREMENT RESULTS

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

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

Location ¹	Description	Energy Average Noise Level (dBA L_{eq}) ²		CNEL
		Daytime	Nighttime	
L1	Located northwest of the site near the residence at 2585 Mountain Ave.	58.2	56.8	64.1
L2	Located north of the site near the sports complex at 1417 Arrow Hwy.	74.2	71.3	78.5
L3	Located southeast of the site near the residence at 5114 Stewart Ave.	65.0	63.7	70.6
L4	Located south of the site near the residence at 13803 Chilcot St.	62.6	56.5	65.1
L5	Located south of the site near the Olive Middle School at 13602 Olive St.	63.2	57.2	66.1

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

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

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

Table 5-1 provides the equivalent noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L₁, L₂, L₅, L₈, L₂₅, L₅₀, L₉₀, L₉₅, and L₉₉ percentile noise levels observed during the daytime and nighttime periods.

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



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6 TRAFFIC NOISE METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with City of Irwindale *Land Use Noise 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. (18) 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. (19) 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. (20)

6.1.1 OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts for Project Option 1 and Option 2. Table 6-1 identifies the 13 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 Irwindale General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study area are based on the *Irwindale Gateway Specific Plan Traffic Impact Analysis*, prepared by Iteris, Inc. for the following traffic scenarios (20).

- Existing
- Existing plus Project
- Buildout Year (2028) without Project Conditions
- Buildout Year (2028) with Project Conditions
- Horizon Year (2040) without Project Conditions
- Horizon Year (2040) with Project Conditions

Table 6-2 presents the Option 1 ADT volumes and Table 6-3 presents the Option 2 ADT volumes. The volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent

land use, without and with project ADT traffic volumes from the Project traffic analysis. Project Option 1 is anticipated to generate a net total of 2,058 two-way trips per day (actual vehicles) that includes 550 truck trips. Project Option 2 is anticipated to generate a net total of 1,511 two-way trips per day (actual vehicles) that includes 418 truck trips.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Avenida Barbosa	n/o Arrow Highway	Secondary	Non-Sensitive	40'	40
2	Rivergrade Road	s/o Live Oak Avenue	Collector	Non-Sensitive	30'	40
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Secondary	Sensitive	40'	40
4	Live Oak Avenue	s/o Arrow Highway	Major	Non-Sensitive	50'	40
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Major	Non-Sensitive	50'	40
6	Live Oak Avenue	e/o Graham Road	Major	Non-Sensitive	50'	40
7	Live Oak Avenue	w/o Rivergrade Road	Major	Non-Sensitive	50'	40
8	Live Oak Avenue	w/o Stewart Avenue	Major	Non-Sensitive	50'	45
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Major	Non-Sensitive	50'	45
10	Arrow Highway	w/o Live Oak Avenue	Secondary	Non-Sensitive	40'	45
11	Arrow Highway	e/o Avenida Barbosa	Secondary	Non-Sensitive	40'	45
12	Arrow Highway	e/o I-1605 NB On-Ramp	Secondary	Non-Sensitive	40'	45
13	Arrow Highway	e/o Maine Avenue	Major	Non-Sensitive	50'	45

¹ Irwindale Gateway Specific Plan Traffic Impact Analysis, Iteris, Inc.

² Based on a review of existing aerial imagery.

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

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-4 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 *Irwindale Gateway Specific Plan Traffic Impact Analysis*. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-5 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios.

TABLE 6-2: OPTION 1 AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes ¹					
			Existing		Buildout Year (2028)		Horizon Year (2040)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Avenida Barbosa	n/o Arrow Highway	10,210	10,405	17,107	17,302	25,384	25,579
2	Rivergrade Road	s/o Live Oak Avenue	9,965	10,068	15,626	15,729	22,418	22,521
3	Baldwin Park Blvd.	s/o Live Oak Avenue	10,885	11,091	16,327	16,533	22,859	23,065
4	Live Oak Avenue	s/o Arrow Highway	27,632	28,004	38,323	38,695	51,151	51,523
5	Live Oak Avenue	w/o I-605 SB On-Ramp	27,632	28,205	38,323	38,896	51,151	51,724
6	Live Oak Avenue	e/o Graham Road	16,505	17,648	28,756	29,899	43,456	44,599
7	Live Oak Avenue	w/o Rivergrade Road	18,226	18,830	27,955	28,559	39,630	40,234
8	Live Oak Avenue	w/o Stewart Avenue	18,385	18,834	29,342	29,791	42,489	42,938
9	Live Oak Avenue	w/o Baldwin Park Blvd.	16,969	17,329	27,507	27,867	40,153	40,513
10	Arrow Highway	w/o Live Oak Avenue	34,298	34,713	49,679	50,094	68,137	68,552
11	Arrow Highway	e/o Avenida Barbosa	15,351	15,443	24,999	25,091	36,576	36,668
12	Arrow Highway	e/o I-1605 NB On-Ramp	11,358	11,512	20,881	21,035	32,309	32,463
13	Arrow Highway	e/o Maine Avenue	16,846	17,155	29,441	29,750	44,554	44,863

¹ Irwindale Gateway Specific Plan Traffic Impact Analysis, Iteris, Inc.

TABLE 6-3: OPTION 2 AVERAGE DAILY TRAFFIC VOLUMES

ID	Roadway	Segment	Average Daily Traffic Volumes ¹					
			Existing		Buildout Year (2028)		Horizon Year (2040)	
			Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Avenida Barbosa	n/o Arrow Highway	10,210	10,353	17,107	17,250	25,384	25,527
2	Rivergrade Road	s/o Live Oak Avenue	9,965	10,041	15,626	15,702	22,418	22,494
3	Baldwin Park Blvd.	s/o Live Oak Avenue	10,885	11,036	16,327	16,478	22,859	23,010
4	Live Oak Avenue	s/o Arrow Highway	27,632	27,903	38,323	38,594	51,151	51,422
5	Live Oak Avenue	w/o I-605 SB On-Ramp	27,632	28,052	38,323	38,743	51,151	51,571
6	Live Oak Avenue	e/o Graham Road	16,505	17,344	28,756	29,595	43,456	44,295
7	Live Oak Avenue	w/o Rivergrade Road	18,226	18,669	27,955	28,398	39,630	40,073
8	Live Oak Avenue	w/o Stewart Avenue	18,385	18,715	29,342	29,672	42,489	42,819
9	Live Oak Avenue	w/o Baldwin Park Blvd.	16,969	17,233	27,507	27,771	40,153	40,417
10	Arrow Highway	w/o Live Oak Avenue	34,298	34,601	49,679	49,982	68,137	68,440
11	Arrow Highway	e/o Avenida Barbosa	15,351	15,418	24,999	25,066	36,576	36,643
12	Arrow Highway	e/o I-1605 NB On-Ramp	11,358	11,471	20,881	20,994	32,309	32,422
13	Arrow Highway	e/o Maine Avenue	16,846	17,073	29,441	29,668	44,554	44,781

¹ Irwindale Gateway Specific Plan Traffic Impact Analysis, Iteris, Inc.

TABLE 6-4: TIME OF DAY VEHICLE SPLITS

Vehicle Type	Time of Day Splits ¹			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	72.45%	9.15%	18.40%	100.00%
Medium Trucks	77.70%	4.78%	17.52%	100.00%
Heavy Trucks	84.32%	2.68%	13.00%	100.00%

¹ Based on existing 24-hour classification counts by vehicle type taken at Arrow Highway west of Maine Avenue (The Park at Live Oak Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth. "Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-5: WITHOUT PROJECT VEHICLE MIX

Classification	Total % Traffic Flow ¹			Total
	Autos	Medium Trucks	Heavy Trucks	
All Segments	85.65%	9.12%	5.23%	100.00%

¹Based on existing 24-hour classification counts by vehicle type taken at Arrow Highway west of Maine Avenue (The Park at Live Oak Traffic Impact Analysis, Urban Crossroads, Inc.). Vehicle mix percentage values rounded to the nearest one-hundredth.

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

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 Irwindale Gateway Specific Plan Traffic Impact Analysis* prepared by Iteris, Inc. (20) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 OFF-SITE TRAFFIC NOISE LEVELS

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Appendix 7.1 includes the Option 1 traffic noise level contours worksheets for each traffic condition with Option 2 worksheets included in Appendix 7.2.

7.2 OPTION 1 - 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 Impact Analysis prepared by Iteris, 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 2028 conditions. Table 7-1 shows that the Existing without Project exterior noise levels will range from 73.4 to 79.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-1 shows that the Existing with Project conditions noise levels will range from 73.5 to 79.8 dBA CNEL resulting in a Project related off-site existing traffic noise level increase ranging from 0.0 to 0.6 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option1- Existing Project-related traffic.

7.3 OPTION 1 – BUILDOUT YEAR 2028 TRAFFIC NOISE LEVEL INCREASES

Table 7-2 shows that the Buildout Year 2028 without Project exterior noise levels will range from 75.4 to 81.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows that the Buildout Year 2028 with Project conditions noise levels will range from 75.5 to 81.4 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.4 dBA CNEL on the study area roadway segments. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to all the study area roadway segments would experience *less than significant* noise

level increases on receiving land uses due to the Option 1- Buildout Year 2028 Project-related traffic.

7.4 OPTION 1 – HORIZON YEAR 2040 TRAFFIC NOISE LEVEL INCREASES

Table 7-3 shows that the Horizon Year 2040 without Project exterior noise levels will range from 76.9 to 82.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-3 shows that the Horizon Year 2040 with Project conditions noise levels will range from 77.0 to 82.7 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.2 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 1- Horizon Year 2040 Project-related traffic.

7.5 OPTION 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 Impact Analysis prepared by Iteris, 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 2028 conditions. Table 7-4 shows that the Existing without Project exterior noise levels will range from 76.9 to 82.7 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows that the Existing with Project conditions noise levels will range from 77.0 to 82.7 dBA CNEL resulting in a Project related off-site existing traffic noise level increase ranging from 0.0 to 0.2 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 2- Existing Project-related traffic.

7.6 OPTION 2 – BUILDOUT YEAR 2028 TRAFFIC NOISE LEVEL INCREASES

Table 7-5 shows that the Buildout Year 2028 without Project exterior noise levels will range from 75.4 to 81.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-5 shows that the Buildout Year 2028 with Project conditions noise levels will range from 75.5 to 81.3 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.3 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 2- Buildout Year 2028 Project-related traffic.

7.7 OPTION 2 – HORIZON YEAR 2040 TRAFFIC NOISE LEVEL INCREASES

Table 7-6 shows that the Horizon Year 2040 without Project exterior noise levels will range from 76.9 to 82.7 dBA CNEL, without accounting for any noise attenuation features such as noise

barriers or topography. Table 7-6 shows that the Horizon Year 2040 with Project conditions noise levels will range from 77.0 to 82.7 dBA CNEL resulting in a Project related off-site traffic noise level increase ranging from 0.0 to 0.2 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 all the study area roadway segments would experience *less than significant* noise level increases on receiving land uses due to the Option 2- Horizon Year 2040 Project-related traffic.

TABLE 7-1: OPTION 1 - EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	73.4	73.5	0.2	n/a	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	73.8	73.9	0.1	n/a	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	73.7	73.8	0.2	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	78.1	78.2	0.1	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	78.1	78.3	0.2	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	75.9	76.5	0.6	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	76.3	76.6	0.3	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	77.4	77.6	0.2	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	77.1	77.3	0.2	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	79.7	79.8	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	76.2	76.3	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	74.9	75.0	0.1	n/a	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	77.0	77.2	0.2	3.0	No

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

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

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

"n/a" Per the Land Use Noise Compatibility Criteria, 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 compatibility criteria for industrial land use (Exhibit 3-A).

TABLE 7-2: OPTION 1 – BUILDOUT YEAR 2028 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	75.6	75.7	0.1	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	75.8	75.9	0.1	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	75.4	75.5	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	79.6	79.6	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	79.6	79.7	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	78.3	78.7	0.4	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	78.2	78.4	0.2	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	79.4	79.6	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	79.2	79.3	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	81.3	81.4	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	78.3	78.4	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	77.6	77.6	0.1	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	79.5	79.6	0.1	3.0	No

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

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

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

"n/a" Per the Land Use Noise Compatibility Criteria, 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 compatibility criteria for industrial land use (Exhibit 3-A).

TABLE 7-3: OPTION 1 - HORIZON YEAR 2040 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	77.3	77.4	0.1	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	77.4	77.4	0.0	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	76.9	77.0	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	80.8	80.8	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	80.8	80.9	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	80.1	80.3	0.2	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	79.7	79.8	0.1	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	81.1	81.1	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	80.8	80.9	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	82.7	82.7	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	80.0	80.0	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	79.4	79.5	0.0	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	81.3	81.3	0.1	3.0	No

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

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

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

"n/a" Per the Land Use Noise Compatibility Criteria, 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 compatibility criteria for industrial land use (Exhibit 3-A).

TABLE 7-4: OPTION 2 - EXISTING WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	77.3	77.4	0.0	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	77.4	77.4	0.0	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	76.9	77.0	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	80.8	80.8	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	80.8	80.9	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	80.1	80.3	0.2	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	79.7	79.8	0.1	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	81.1	81.1	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	80.8	80.9	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	82.7	82.7	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	80.0	80.0	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	79.4	79.5	0.0	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	81.3	81.3	0.0	3.0	No

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

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

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

"n/a" Per the Land Use Noise Compatibility Criteria, 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 compatibility criteria for industrial land use (Exhibit 3-A).

TABLE 7-5: OPTION 2 – BUILDOUT YEAR 2028 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	75.6	75.7	0.1	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	75.8	75.8	0.0	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	75.4	75.5	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	79.6	79.6	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	79.6	79.6	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	78.3	78.6	0.3	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	78.2	78.3	0.1	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	79.4	79.5	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	79.2	79.3	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	81.3	81.3	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	78.3	78.4	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	77.6	77.6	0.1	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	79.5	79.5	0.1	3.0	No

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

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

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

"n/a" Per the Land Use Noise Compatibility Criteria, 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 compatibility criteria for industrial land use (Exhibit 3-A).

TABLE 7-6: OPTION 2 - HORIZON YEAR 2040 WITH PROJECT TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving Land Use ¹	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²	
				No Project	With Project	Project Addition	Limit	Exceeded?
1	Avenida Barbosa	n/o Arrow Highway	Non-Sensitive	77.3	77.4	0.0	3.0	No
2	Rivergrade Road	s/o Live Oak Avenue	Non-Sensitive	77.4	77.4	0.0	3.0	No
3	Baldwin Park Blvd.	s/o Live Oak Avenue	Sensitive	76.9	77.0	0.1	1.5	No
4	Live Oak Avenue	s/o Arrow Highway	Non-Sensitive	80.8	80.8	0.0	3.0	No
5	Live Oak Avenue	w/o I-605 SB On-Ramp	Non-Sensitive	80.8	80.9	0.1	3.0	No
6	Live Oak Avenue	e/o Graham Road	Non-Sensitive	80.1	80.3	0.2	3.0	No
7	Live Oak Avenue	w/o Rivergrade Road	Non-Sensitive	79.7	79.8	0.1	3.0	No
8	Live Oak Avenue	w/o Stewart Avenue	Non-Sensitive	81.1	81.1	0.1	3.0	No
9	Live Oak Avenue	w/o Baldwin Park Blvd.	Non-Sensitive	80.8	80.9	0.1	3.0	No
10	Arrow Highway	w/o Live Oak Avenue	Non-Sensitive	82.7	82.7	0.0	3.0	No
11	Arrow Highway	e/o Avenida Barbosa	Non-Sensitive	80.0	80.0	0.0	3.0	No
12	Arrow Highway	e/o I-1605 NB On-Ramp	Non-Sensitive	79.4	79.5	0.0	3.0	No
13	Arrow Highway	e/o Maine Avenue	Non-Sensitive	81.3	81.3	0.0	3.0	No

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

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

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

"n/a" Per the Land Use Noise Compatibility Criteria, 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 compatibility criteria for industrial land use (Exhibit 3-A).

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8 SENSITIVE RECEIVER LOCATIONS

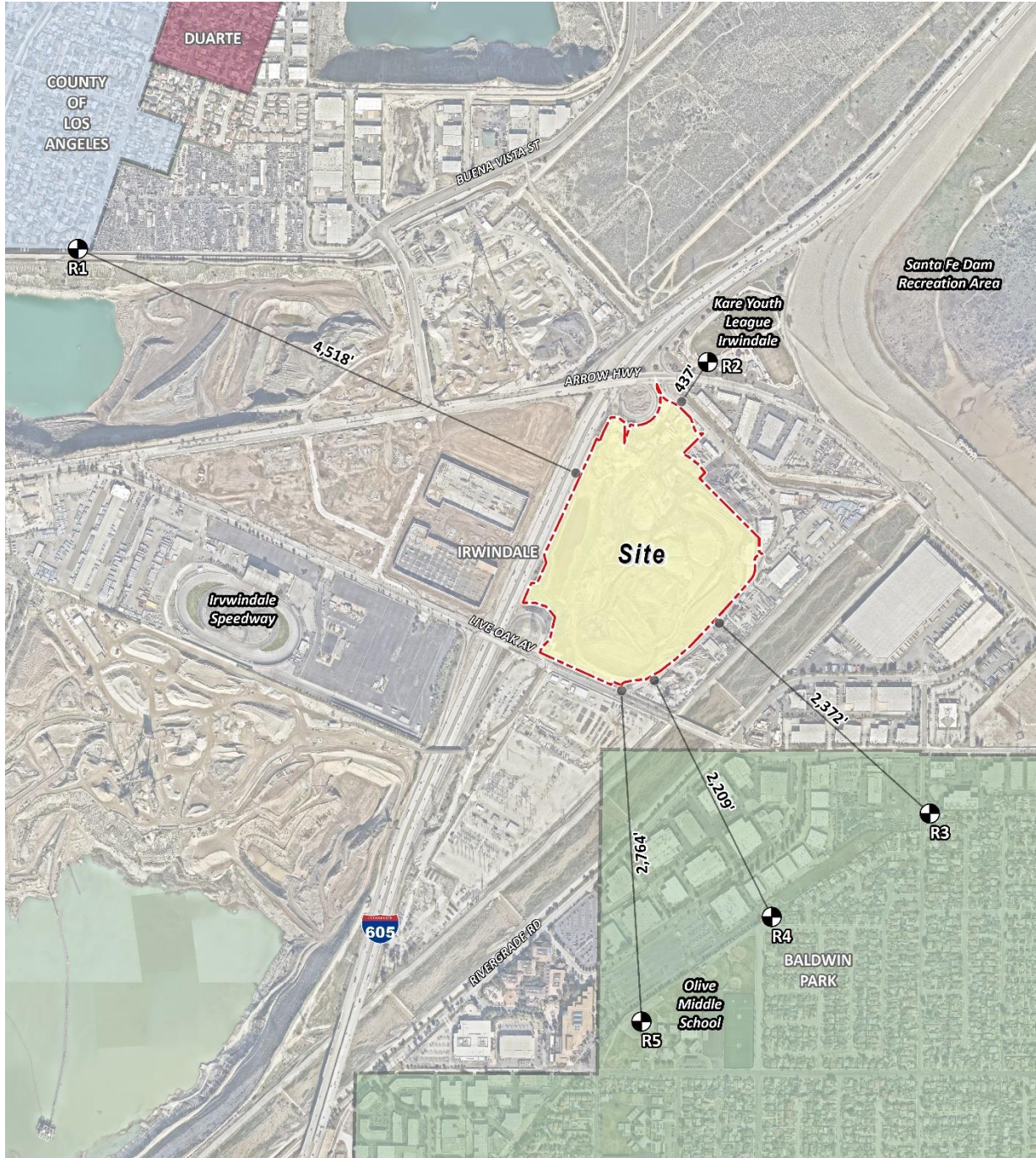
To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where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

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

- R1: Location R1 represents the existing noise sensitive residence at 2585 Mountain Avenue, in unincorporated County of Los Angeles approximately 4,518 feet northwest of the Project site. Receiver R1 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the Kare Youth League sports complex at 1417 Arrow Highway, approximately 437 feet north of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R2 is placed near the bleachers. 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 5114 Stewart Avenue in the City of Baldwin Park approximately 2,372 feet southeast of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R3 is placed at the building façade. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the existing noise sensitive residence at 13807 Nubia Street in the City of Baldwin Park, approximately 2,209 feet southeast of the Project site. Receiver R4 is placed in the private outdoor living areas facing the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.

R5: Location R5 represents the Olive Middle School at 13701 Olive Street in the City of Baldwin Park, approximately 2,764 feet south of the Project site. Receiver R5 is placed at the building façade. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.

EXHIBIT 8-A: RECEIVER LOCATIONS



9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Irwindale Gateway Specific Plan Project Option 1 and Option 2.

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 for Option 1 and Option 2. Consistent with similar industrial/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, parking lot vehicle activities, roof-top air conditioning units, trash enclosure activity, and truck movements. In addition, Option 2 will add noise source activities from the proposed 400-megawatt battery energy storage system (BESS). Exhibit 9-A presents the Option 1 operational noise source activities. The Option 2 operational noise source activities are shown on Exhibit 9-B.

9.2 REFERENCE NOISE LEVELS

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

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using a Larson Davis LxT Type 1 precision sound level meter (serial number 01146). The LxT sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 200, was programmed in “slow” mode to record noise levels in “A” weighted form and was located at approximately five feet above the ground elevation for each measurement. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (17)

EXHIBIT 9-A: OPTION 1 - OPERATIONAL NOISE SOURCE LOCATIONS

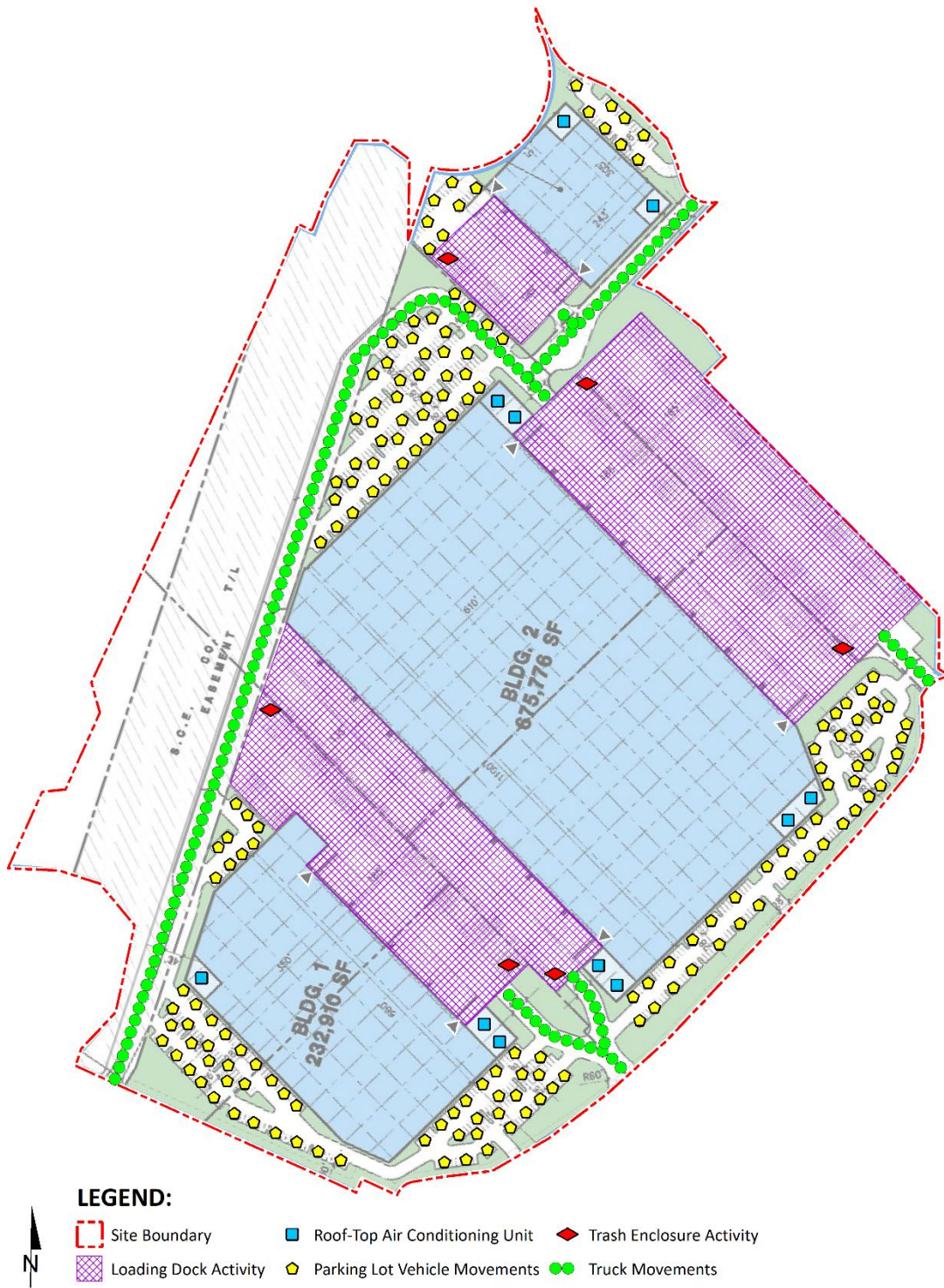


EXHIBIT 9-B: OPTION 2 - OPERATIONAL NOISE SOURCE LOCATIONS



- LEGEND:**
- Site Boundary
 - Truck Movements
 - Loading Dock Activity
 - Battery Energy Storage System (BESS)
 - Roof-Top Air Conditioning Unit
 - Parking Lot Vehicle Movements
 - Trash Enclosure Activity

TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Reference Noise Source	Noise Source Height (Feet)	Min./Hour ¹		Reference Noise Level (dBA L _{eq}) @ 50 Feet	Sound Power Level (dBA) ²
		Day	Night		
Loading Dock Activity	8'	60	60	65.7	111.5
Parking Lot Vehicle Movements	5'	60	60	52.6	81.1
Roof-Top Air Conditioning Units	5'	39	28	57.2	88.9
Trash Enclosure Activity	5'	60	30	57.3	89.0
Truck Movements	8'	60	60	59.8	93.2
Battery Energy Storage System (BESS)	8'	60	60	50.6	82.2

¹ 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.

² 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 PARKING LOT VEHICLE MOVEMENTS

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

9.2.4 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 an 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.

9.2.5 TRASH ENCLOSURE ACTIVITY

To describe the noise levels associated with a trash enclosure activity, Urban Crossroads collected a reference noise level measurement at an existing trash enclosure containing two dumpster bins. The trash enclosure noise levels describe metal gates opening and closing, metal scraping against concrete floor sounds, dumpster movement on metal wheels, 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.

9.2.6 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 exiting the Project driveways and maneuvering in and out of the outdoor loading dock activity area.

9.2.7 BATTERY ENERGY STORAGE SYSTEM (BESS) – OPTION 2

To describe the potential operation noise levels associated with the proposed BESS with site plan Option 2, reference noise levels were obtained from the Tesla Megapack Site Design Manual. (21) It is expected that the BESS with accessory switchgear and transformers will produce unmitigated exterior reference noise levels of less than 75 dBA when measured at 3 feet producing a reference noise level of 50.6 dBA L_{eq} at 50 feet.

9.3 CADNA A 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.

9.4 PROJECT OPERATIONAL NOISE LEVELS

Using the reference noise levels to represent the proposed Project operations that include loading dock activity, parking lot vehicle activities, roof-top air conditioning units, trash enclosure activity, and truck movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against exterior noise level thresholds based on the City of Irwindale exterior noise level standards at nearby noise-sensitive receiver locations.

9.4.1 OPTION 1 SITE PLAN

Table 9-2 shows Project Option 1 operational noise levels during the daytime hours are expected to range from 36.1 to 47.9 dBA L_{eq} with nighttime hourly noise levels ranging from 36.0 to 47.9 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. Table 9-2 shows that the operational noise levels associated with Irwindale Gateway Specific Plan Project will not exceed the City of Irwindale daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations. Project Option 1 operational noise level inputs and calculations are included in Appendix 9.1.

TABLE 9-2: OPTION 1 - 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	37.5	37.4	50	45	No	No
R2	47.9	47.9	50	-. ⁵	No	No
R3	42.9	42.8	50	45	No	No
R4	40.2	40.1	50	45	No	No
R5	36.1	36.0	50	-. ⁶	No	No

¹ See Exhibit 8-A for the receiver locations.
² Proposed Project operational noise levels as shown on Tables 9-2 and 9-3.
³ Exterior noise level standards, as shown on Table 4-1.
⁴ Do the estimated Project operational noise source activities exceed the noise level standards?
⁵ Represents the Kare Youth League sports complex and does not include any noise sensitive nighttime receivers.
⁶ Represents the Olive Middle School and does not include any noise sensitive nighttime receivers.
 "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

9.4.2 OPTION 2 SITE PLAN

Table 9-3 shows Project Option 2 operational noise levels during the daytime hours are expected to range from 37.7 to 47.9 dBA Leq with nighttime hourly noise levels ranging from 37.7 to 47.8 dBA Leq. 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. Table 9-3 shows that the operational noise levels associated with Irwindale Gateway Specific Plan Project will not exceed the City of Irwindale daytime and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations. Project Option 1 operational noise level inputs and calculations are included in Appendix 9.2.

TABLE 9-3: OPTION 2 - 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	37.7	37.7	50	45	No	No
R2	47.9	47.8	50	-. ⁵	No	No
R3	42.4	42.3	50	45	No	No
R4	41.5	41.4	50	45	No	No
R5	39.0	39.0	50	-. ⁶	No	No

¹ See Exhibit 8-A for the receiver locations.
² Project Option 2 operational noise level calculation included in Appendix 9.2.
³ Exterior noise level standards, as shown on Table 4-1.
⁴ Do the estimated Project operational noise source activities exceed the noise level standards?
⁵ Represents the Kare Youth League sports complex and does not include any noise sensitive nighttime receivers.
⁶ Represents the Olive Middle School and does not include any noise sensitive nighttime receivers.
 "Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

9.5 PROJECT OPERATIONAL NOISE LEVEL INCREASES

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

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

Where “SPL1,” “SPL2,” etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment.

9.5.1 OPTION 1 SITE PLAN

Noise levels that would be experienced at receiver locations when Project Option 1 source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-4 and 9-5, respectively. As indicated on Tables 9-4 and 9-5, Project Option 1 will generate noise level increases ranging from 0.0 to 0.1 dBA L_{eq} at the nearest receiver locations. Project Option 1 will not exceed the operational noise level increase significance criteria presented in Table 4-1, and, therefore, the increases at the sensitive receiver locations will be *less than significant*.

TABLE 9-4: OPTION 1 - 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	37.5	L1	58.2	58.2	0.0	5.0	No
R2	47.9	L2	74.2	74.2	0.0	1.5	No
R3	42.9	L3	65.0	65.0	0.0	1.5	No
R4	40.2	L4	62.6	62.6	0.0	5.0	No
R5	36.1	L5	63.2	63.2	0.0	5.0	No

¹ See Exhibit 8-A for the receiver locations.

² Total Project Option 1 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 Option 1 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 1 activities.

⁷ Significance increase criteria as shown on Table 4-1.

TABLE 9-5: OPTION 1 - 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	37.4	L1	56.8	56.8	0.0	5.0	No
R2	47.9	L2	71.3	71.3	0.0	1.5	No
R3	42.8	L3	63.7	63.7	0.0	5.0	No
R4	40.1	L4	56.5	56.6	0.1	5.0	No
R5	36.0	L5	57.2	57.2	0.0	5.0	No

¹ See Exhibit 8-A for the receiver locations.

² Total Project Option 1 nighttime operational noise levels as shown on Table 9-2.

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 Option 1 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 1 activities.

⁷ Significance increase criteria as shown on Table 4-1.

9.5.1 OPTION 2 SITE PLAN

Noise levels that would be experienced at receiver locations when Project Option 2 source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-6 and 9-7, respectively. As indicated on Tables 9-6 and 9-7, Project Option 2 will generate noise level increases ranging from 0.0 to 0.1 dBA L_{eq} at the nearest receiver locations. Project Option 2 will not exceed the operational noise level increase significance criteria presented in Table 4-1, and, therefore, the increases at the sensitive receiver locations will be *less than significant*.

TABLE 9-6: OPTION 2 - 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	37.7	L1	58.2	58.2	0.0	5.0	No
R2	47.9	L2	74.2	74.2	0.0	1.5	No
R3	42.4	L3	65.0	65.0	0.0	1.5	No
R4	41.5	L4	62.6	62.6	0.0	5.0	No
R5	39.0	L5	63.2	63.2	0.0	5.0	No

¹ See Exhibit 8-A for the receiver locations.

² Total Project Option 2 daytime operational noise levels as shown on Table 9-3.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed daytime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project Option 2 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 2 activities.

⁷ Significance increase criteria as shown on Table 4-1.

TABLE 9-7: OPTION 2 - NIGHTTIME 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	37.7	L1	56.8	56.9	0.1	5.0	No
R2	47.8	L2	71.3	71.3	0.0	1.5	No
R3	42.3	L3	63.7	63.7	0.0	5.0	No
R4	41.4	L4	56.5	56.6	0.1	5.0	No
R5	39.0	L5	57.2	57.3	0.1	5.0	No

¹ See Exhibit 8-A for the receiver locations.

² Total Project Option 2 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 Option 2 activities.

⁶ The noise level increase expected with the addition of the proposed Project Option 2 activities.

⁷ Significance increase criteria as shown on Table 4-1.

10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the on-site construction noise source activities in relation to the nearest sensitive receiver locations previously described in Section 8. The City of Irwindale Municipal Code, Section 9.28.110, indicates that construction activity is limited to the hours of 7:00 a.m. to 7:00 p.m. and cannot constitute a violation of Section 9.28.040 unless authorized by a building inspector. In addition, Section 9.28.040 identifies the construction noise level threshold for use in this noise study and indicates that Project construction noise levels shall not exceed the base exterior noise level standard or the ambient noise level by more than 5 dBA at sensitive receiver locations. (14)

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. (21) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE LOCATIONS



LEGEND:

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

10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming they operate at the same time. As shown on Table 10-2, the construction noise levels are expected to range from 39.5 to 59.9 dBA L_{eq} at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.

TABLE 10-1: PCONSTRUCTION REFERENCE NOISE LEVELS

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

¹ FHWA Roadway Construction Noise Model (RCNM).

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

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

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location ¹	Construction Noise Levels (dBA L _{eq})					
	Site Preparation	Grading	Building Construction	Paving	Off-Site Utilities	Highest Levels ²
R1	41.5	44.5	42.5	44.5	39.5	44.5
R2	56.9	59.9	57.9	59.9	54.9	59.9
R3	47.9	50.9	48.9	50.9	45.9	50.9
R4	48.1	51.1	49.1	51.1	46.1	51.1
R5	45.8	48.8	46.8	48.8	43.8	48.8

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 PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related noise level increase threshold of 5 dBA is used consistent with City of Irwindale Municipal Code Section 9.28.040. Table 10-3 shows that Project construction noise levels will generate noise level increases ranging from 0.2 to 0.3 dBA L_{eq} at the nearest receiver locations. The construction noise analysis shows that the nearest receiver locations will not exceed the noise level increase threshold of 5 dBA. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

TABLE 10-3: PROJECT SITE CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location ¹	Total Project Construction 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	44.5	L1	58.2	58.4	0.2	5	No
R2	59.9	L2	74.2	74.4	0.2	5	No
R3	50.9	L3	65.0	65.2	0.2	5	No
R4	51.1	L4	62.6	62.9	0.3	5	No
R5	48.8	L5	63.2	63.4	0.2	5	No

¹ Construction noise source and receiver locations are shown on Exhibit 10-A.

² Highest construction noise level as shown on Table 10-2.

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 construction activities.

⁶ The noise level increase expected with the addition of the Project construction activities.

⁷ Significance increase criteria as shown on Table 4-1.

10.5 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 10-4. 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: $PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$

TABLE 10-4: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

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

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Table 10-5 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 437 to 4,518 feet from Project construction activities, construction vibration velocity levels are estimated to range from 0.000 to 0.003 in/sec PPV. 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 sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.

TABLE 10-5: 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	Jackhammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level		
R1	4,518'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R2	437'	0.000	0.000	0.001	0.001	0.003	0.003	0.3	No
R3	2,372'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R4	2,209'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No
R5	2,764'	0.000	0.000	0.000	0.000	0.000	0.000	0.3	No

¹ Construction noise source and receiver locations are shown on Exhibit 10-A.

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

³ Based on the Vibration Source Levels of Construction Equipment (Table 10-4).

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

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

11 REFERENCES

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19. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.
20. **Iteris, Inc.** *Irwindale Gateway Traffic Impact Analysis.* May 2023.
21. **Tesla.** *Tesla Megapack Site Design Manual.* 9/20/2019.

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

12 CERTIFICATION

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

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EDUCATION

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

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

PROFESSIONAL REGISTRATIONS

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

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL CERTIFICATIONS

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

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APPENDIX 3.1:

CITY OF IRWINDALE MUNICIPAL CODE

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Chapter 9.28 NOISE REGULATION¹

Sections:

9.28.010 Declaration of policy.

It is declared to be the policy of the city to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power and contrary to the public interest. At certain levels noises are detrimental to the health and welfare of the citizenry and in the public interest shall be systematically proscribed.

(Ord. 297 § 1(part), 1976: prior code § 4800).

9.28.020 Definitions.

As used in this chapter, unless the context otherwise clearly indicates, the words and phrases used in this chapter are defined as follows:

- A. "Ambient base noise level" means reasonable and representative ambient noise levels in various land use categories in the city and at various times as established by the planning commission.
- B. "Ambient noise level" means the all-encompassing noise associated with a given environment, usually being a composite of sounds with many sources excluding the alleged offensive noise at the location and approximate time at which a comparison with the alleged offensive noise is to be made.
- C. "Commercial purpose" means and includes the use, operation, or maintenance of any sound amplifying equipment for the purpose of advertising any business, or any good, or any services, or for the purpose of attracting the attention of the public to, or advertising for, or soliciting patronage or customers to or for any performance, show entertainment, exhibition, or event, or for the purpose of demonstrating any such sound equipment.
- D. "Decibel (dB)" means a unit of level which denotes the ratio between two quantities which are proportional to power; the number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base ten of this ratio.
- E. "Emergency work" means work made necessary to restore property to a safe condition following a public calamity, or work required to protect persons or property from an imminent exposure to danger, or work performed by public utilities or public agencies and utility companies.
- F. "Motor vehicles" includes, but is not limited to, off-road vehicles, minibikes and gocarts.
- G. "Noise level" means the "A" weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty micronewtons per square meter. The unit of measure is the dB(A).

^{1*} For statutory provisions dealing with noise control, see Health and Saf. Code § 46000 et seq.; for provisions on the requirement of noise element as a guideline for use in land development, see Gov. Code § 65302(G); for provisions on noise limits for motor vehicles, see Vehicle Code § 27200 et seq.

- H. "Noncommercial purpose" means the use, operation, or maintenance of any sound amplifying equipment for other than a commercial purpose. "Noncommercial purpose" means and includes, but shall not be limited to, philanthropic, political, patriotic and charitable purposes.
- I. "Person" means a person, firm, association, copartnership, joint venture, corporation, or any entity, public or private in nature.
- J. "Sound amplifying equipment" means any machine or device for the amplification of the human voice, music, or any other sound. "Sound amplifying equipment" does not include standard automobile radios when used and heard only by the occupants of the vehicle in which the automobile radio is installed. "Sound amplifying equipment," as used in this chapter, does not include warning devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.
- K. "Sound level meter" means an instrument meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.
- L. "Sound pressure level," in decibels, of a sound means twenty times the logarithm to the base ten of the ratio of the pressure of this sound to the reference pressure, which reference pressure shall be explicitly stated.
- M. "Sound truck" means any motor vehicle, or any other vehicle regardless of motive power, whether in motion or stationary, having mounted thereon, or attached thereto, any sound amplifying equipment.

(Ord. 297 § 1(part), 1976: prior code § 4801).

9.28.030 Ambient base noise levels designated—Proof of violation.

A. Where the ambient noise level is less than designated in this section, the ambient base noise level in this section shall govern.

Zone	Ambient Base Noise Level	
	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.
Residential	45	50
Commercial	50	55
Industrial	60	70

B. Any noise at a level which exceeds the ambient or the ambient base level as set forth in subsection A of this section, whichever is greater, by more than ten dB when measured at any boundary line of the property from which the noise emanates shall constitute sufficient proof of a violation.

(Ord. 297 § 1(part), 1976: prior code § 4803).

9.28.040 Noise level violation designated.

It is unlawful for any person to wilfully make or continue, or cause to be made or continued any noise at a level which exceeds by more than five dB the ambient or the ambient base level as set forth in Section 9.28.030, whichever is greater, when measured at any boundary line of the property from which the noise emanates.

(Ord. 297 § 1(part), 1976: prior code § 4804).

9.28.050 Radios, television sets and similar devices.

It is unlawful for any person within any residential zone of the city to use or operate any radio receiving set, musical instrument, phonograph, television set or other machine or device for the producing or reproducing of sound in a manner which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4820).

9.28.060 Hawkers and peddlers.

It is unlawful for any person within the city to sell anything by outcry within any area of the city zones for residential uses.

(Ord. 297 § 1 (part), 1976: prior code § 4821).

9.28.070 Drums.

It is unlawful for any person to use any drum or other instrument or device of any kind for the purpose of attracting attention for commercial purposes by the creation of noise within the city. This section shall not apply to any person who is a participant in a duly authorized parade or who has been otherwise duly authorized to engage in such conduct.

(Ord. 297 § 1(part), 1976: prior code § 4822).

9.28.080 Schools and churches.

It is unlawful for any person to create any noise on any street, sidewalk or public place adjacent to any school, institution of learning, or church while the same is in use, if such noise unreasonably interferes with the working of such institution or would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4823).

9.28.090 Animals and fowl.

No person shall keep or maintain, or permit the keeping of, upon any premises owned, occupied or controlled by such person, any animal or fowl otherwise permitted to be kept which, by any sound, cry, or behavior, shall cause noise in any residential neighborhood which would constitute a violation of Section 9.28.040, or otherwise constitute a nuisance.

(Ord. 297 § 1(part), 1976: prior code § 4824).

9.28.100 Machinery, equipment, fans, and air conditioning.

It is unlawful for any person to operate any machinery, equipment, pump, fan, air-conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at any boundary line of any property from which such noise emanates to exceed the ambient noise level or the ambient base level as set forth in Section 9.28.030, whichever is greater, by more than ten decibels; provided, however, this section shall not prevent the reasonable operation of customary household gardening equipment or hobby shop equipment during the hours of eight a.m. to nine p.m., Monday through Saturday, and ten a.m. to eight p.m. on

Sunday, provided the same may not exceed eighty decibels (as measured from the adjacent property line) for more than three hours from sunup to sundown.

(Ord. 297 § 1(part), 1976: prior code § 4825).

9.28.110 Construction of building and projects—Times specified.

A. It is unlawful for any person within a residential zone, or within a radius of five hundred feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist or other construction type device on a development requiring a city permit, in such a manner that noise is produced which would constitute a violation of Section 9.28.040, unless beforehand authorization therefor has been duly obtained from the building inspector. Such activity is unlawful without a permit during all hours on Sunday. No permit shall be required to perform emergency work as defined in subsection E of 9.28.020.

B. Construction authorized by subsection A of this section shall be limited to seven a.m. to seven p.m.

(Ord. 297 § 1(part), 1976: prior code § 4830).

9.28.120 Industry and racetracks.

The noise level from industrial plants, auto wreckers, junkyards, racetracks or other industrial user shall not exceed the levels set forth in Section 9.28.040, except as may be specifically authorized by permit from the city.

(Ord. 297 § 1(part), 1976: prior code § 4860).

9.28.130 Vehicle repairs.

It is unlawful for any person within any residential area of the city to repair, rebuild or test any motor vehicle thereby producing noise which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1 (part), 1976: prior code § 4840).

9.28.140 Motor-driven vehicles.

It is unlawful for any person to operate any motor-driven vehicle within the city in such a manner producing noise which would constitute a violation of Section 9.28.040.

(Ord. 297 § 1(part), 1976: prior code § 4841).

9.28.150 Amplified sound—Purpose of provisions.

The council enacts this legislation for the sole purpose of securing and promoting the public health, comfort, safety and welfare for its citizenry. While recognizing that the use of sound amplifying equipment for certain purposes is protected by the constitutional rights of freedom of speech and assembly, the council nevertheless feels obligated to reasonably regulate the use of sound amplifying equipment in order to protect the correlative constitutional rights of the citizens of this community to privacy and freedom from public nuisance of loud and unnecessary noise.

(Ord. 297 § 1(part), 1976: prior code § 4850).

9.28.160 Amplified sound—Commercial use prohibited.

It is unlawful for any person to install, use, or operate within the city for commercial purposes, a loudspeaker or sound amplifying equipment in a fixed or movable position or mounted upon any sound truck.

(Ord. 297 § 1(part), 1976: prior code § 4851).

9.28.170 Amplified sound—Registration statement—Required.

It is unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use or operate within the city for noncommercial purposes a loudspeaker or sound amplifying equipment in a fixed or movable position or mounted upon any sound truck for the purposes of giving instructions, directions, talks, addresses, lectures or transmitting music to any persons or assemblages of persons in or upon any street, alley, sidewalk, park, place or public property without first filing a registration statement and obtaining approval thereof, as set forth in Section 9.28.180.

(Ord. 297 § 1(part), 1976: prior code § 4852).

9.28.180 Amplified sound—Registration statement—Filing—Approval—Disapproval—Revocation.

A. Filing. Every user of sound amplifying equipment for noncommercial purposes shall file a registration statement with the chief of police ten days prior to the date on which the sound amplifying equipment is intended to be used, which statement shall contain the following information:

1. The name, address and telephone number of both the owner and user of the sound amplifying equipment;
2. The maximum sound producing power of the sound amplifying equipment which shall include the wattage to be used, the volume in decibels of sound which will be produced, and the approximate distance for which sound will be audible from the sound amplifying equipment;
3. The license and motor number if a sound truck is to be used;
4. A general description of the sound amplifying equipment which is to be used; and
5. The nature of the use of the sound amplifying equipment proposed to be used for noncommercial purposes.

B. Approval. The chief of police shall return to the applicant an approved certified copy of the registration statement unless he finds that:

1. The conditions of the motor vehicle movement are such that in the opinion of the chief of police, use of the equipment would constitute a detriment to traffic safety; or
2. The conditions of pedestrian movement are such that use of the equipment would constitute a detriment to traffic safety; or
3. The registration statement required reveals that the applicant would violate the provisions set forth in Section 9.28.150, or any other provisions of this code.

C. Disapproval. In the event the registration statement is disapproved, the chief of police shall endorse upon the statement his reasons for disapproval and return it forthwith to the applicant.

D. Revocation. Any such permit may be revoked for violation of Section 9.28.150.

(Ord. 297 § 1(part), 1976: prior code § 4853).

9.28.190 Amplified sound—Appeals.

Any person aggrieved by disapproval of a registration statement may file an appeal to the city council within ten days of the date of disapproval. The city council shall decide the appeal at its next meeting.

(Ord. 297 § 1(part), 1976: prior code § 4854).

9.28.200 Amplified sound—Regulations of noncommercial use.

The noncommercial use of sound amplifying equipment shall be subject to the following regulations:

- A. The only sound permitted shall be either music or human speech or both.
- B. The operation of sound amplifying equipment shall only occur between the hours of eight a.m. and six p.m. each day except on Sundays and legal holidays. The operation of sound amplifying equipment on Sundays and legal holidays shall only occur between the hours of ten a.m. and six p.m.
- C. No sound emanating from sound amplifying equipment shall exceed fifteen dB above the ambient as measured at any property line.
- D. Notwithstanding the provisions of subsection C of this section, sound amplifying equipment shall not be operated within two hundred feet of churches, schools, or city or county buildings, except by special permit.
- E. In any event, the volume of sound shall be so controlled that it will not be unreasonably loud, raucous, jarring, disturbing or a nuisance to reasonable persons of normal sensitiveness within the area of audibility.

(Ord. 297 § 1(part), 1976: prior code § 4855).

9.28.210 Excessive noise prohibited.

Notwithstanding any other provision of this chapter, it is unlawful for any person to wilfully make or continue, or cause to be made or continued, any loud, unnecessary, or unusual noise which disturbs the peace or quiet of any neighborhood.

(Ord. 297 § 1(part), 1976: prior code § 4870).

9.28.220 Standards for determining violation of Section 9.28.210.

The standards which may be considered in determining whether a violation of the provisions of Section 9.28.210 exists shall include, but not be limited to, the following:

- A. The loudness of the noise;
- B. The intensity of the noise;
- C. Whether the nature of the noise is usual or unusual;
- D. Whether the origin of the noise is natural or unnatural;
- E. The loudness and intensity of the background noise, if any;

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- F. The proximity of the noise to residential sleeping facilities;
 - G. The nature and zoning of the area within which the noise emanates;
 - H. The density of the inhabitation of the area within which the noise emanates;
 - I. The time of the day or night the noise occurs;
 - J. The duration of the noise;
 - K. Whether the noise is recurrent, intermittent, or continuous; and
 - L. Whether the noise is produced by a commercial or residential activity.

(Ord. 297 § 1(part), 1976: prior code § 4871).

9.28.230 Exclusions to chapter applicability.

The provisions of this chapter shall not apply to:

- A. Sound produced by motor vehicles as regulated by sound limitation provisions of the California Vehicle Code when such vehicle is located or operated on any public street, right-of-way or highway;
- B. Aircraft operated in conformity with federal law;
- C. Public and private schools, organized activities including sports, carnivals, assemblies and other regular activities;
- D. Construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation departments, public works projects or essential public services and facilities, including those of public utilities subject to the regulatory jurisdiction of the California Public Utilities Commission;
- E. Activities of the federal, state or local government;
- F. Any noise continuing for less than thirty seconds at intervals greater than once in three hours.

(Ord. 297 § 1(part), 1976: prior code § 4880).

9.28.240 Effect of chapter.

Nothing in this chapter shall authorize any use otherwise prohibited or regulated by this code.

(Ord. 297 § 1(part), 1976: prior code § 4808).

9.28.250 Noise level enforcement criteria.

Enforcement of the provisions of this chapter shall be based on a noise level measurement to establish the noise level. The measurement shall be taken in accordance with the city's administrative instruction concerning noise level measurement procedure.

(Ord. 297 § 1(part), 1976: prior code § 4802).

9.28.251 Residential parties—Publicized commercialism regulated.

A. Definitions. For the purpose of this section:

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1. "Major party" means a group of more than fifty persons meeting together for social, recreational or amusement purposes, but excluding meetings for political, charitable or religious purposes.
 2. "Residence" means:
 - a. any property used for residential use; and
 - b. any property situated in any of the residential zones as defined and zoned in the zoning code of this city.
 3. "Publicized" means an open invitation circulated by flyer or advertised by publication, posting or distribution in or about public places suggesting unlimited or unreserved attendance.
 4. "Commercial" means the suggestion or request of a monetary charge for admission.
 5. "Permit" means a permit issued by either the city council, city manager or police chief. Such permit shall be issued upon application unless the issuer finds that such party will (or is likely to) cause problems relating to traffic, overcrowding, noise, hours after eleven p.m. or other matters affecting residential quality of life. Such permits may also contain appropriate conditions.
- B. It is unlawful to have or permit a publicized commercial major party in a residence in this city without a permit or other than in compliance with such permit.
- C. violation of this section is punishable by a fine not to exceed five hundred dollars or by imprisonment for not to exceed six months, or by both such fine and imprisonment.

(Ord. 408 § 1, 1986; Ord. 366 § 1, 1983).

9.28.260 Violations—Penalties.

Any person violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be fined in an amount not exceeding five hundred dollars 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. 297 § 1(part), 1976; prior code § 4805).

9.28.270 Violations—Additional remedies—Injunctions.

As an additional remedy, the operation or maintenance of any device, instrument, vehicle, or machinery in violation of any provision of this chapter shall be deemed, and is declared to be, a public nuisance and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction.

(Ord. 297 § 1(part), 1976; prior code § 4806).

APPENDIX 3.2:

LOS ANGELES COUNTY CODE OF ORDINANCES

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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
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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:

Measurement Location	Units Installed	
	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.		
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(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:

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- 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,

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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 re-drilling and which is restricted to the hours between 7:00 a.m. and 10:00 p.m., and
 2. Drilling or re-drilling 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.

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- 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 3.3:

CITY OF BALDWIN PARK MUNICIPAL CODE

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NOISE CONTROL

§ 130.30 POLICY DECLARATION.

It is declared to be the policy of the city to prohibit unnecessary, excessive and annoying noises from all sources subject to its police power. At certain levels, noises are detrimental to the health and welfare of the citizenry and, in the public interest, such noise levels shall be systematically proscribed.

(Ord. 1114, passed 5-1-96)

§ 130.31 DEFINITIONS.

For the purpose of this subchapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

AMBIENT NOISE. The all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far. For the purpose of this chapter, **AMBIENT NOISE LEVEL** is the level obtained when the noise level is averaged over a period of 15 minutes without inclusion of noise from isolated identifiable sources, at the location and time of day near that at which a comparison is to be made.

A-WEIGHTED SOUND PRESSURE LEVEL. The sound pressure level as measured with a sound meter using the "A"-weighting network. The standard notation is dBA.

COMMERCIAL PURPOSE. Includes the use, operation or maintenance of any sound amplifying equipment for the purpose of advertising any business, or any goods, or any services, or for the purpose of attracting the attention of the public to, or advertising for, or soliciting patronage or customers to or for any performance, show, entertainment, exhibition or event, for the purpose of demonstrating any such sound equipment.

COMMERCIAL ZONE. An area designated as neighborhood commercial (C-1), central business district (CBD), general commercial (C-2), or freeway commercial (FC) on the city zoning map.

CYCLICALLY VARYING NOISE. Steady or non-steady noise which varies in amplitude such that the same sound pressure level is obtained repetitively at reasonably uniform intervals of time. A beat is one class of noise.

DAY. The time period from 7:00 a.m. of one day to 10:00 p.m. of the same day.

DECIBEL (dB). A unit for expressing the ratio between two quantities of acoustical signal powers; the number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base ten of this ratio.

EMERGENCY WORK. Work made necessary to restore property to a safe condition following a public calamity, or work required to protect persons or property from an imminent exposure to danger, or work by private or public utilities when restoring utility service.

IMPULSIVE SOUND. A short-duration sound (such as might be produced by the impact of a drop hammer or a pile driver) with one second or less duration.

INDUSTRIAL ZONE. An area designated as commercial manufacturing (CM), office industrial (OI), industrial commercial (IC) or industrial (I) on the city zoning map.

MOTOR VEHICLES. Includes, but is not limited to, automobiles, trucks, motorcycles, mini bikes and go-carts.

NIGHT. The time period from 10:00 p.m. of one day to 7:00 a.m. of the following day.

NONCOMMERCIAL PURPOSE. The use, operation or maintenance of any sound equipment for other than a commercial use. **NONCOMMERCIAL PURPOSE** means and includes, but is not limited to, philanthropic, political, patriotic and charitable purposes.

PERSON. A person, firm, association, copartnership, joint venture, corporation, or any entity, public or private in nature, excluding the city.

PROPERTY BOUNDARY LINE. An imaginary line at the ground surface, which separates the real property owned by one person from that owned by another person and its vertical extension. This includes multiple-family dwelling units, with the property boundary being the wall separating the adjoining dwelling units.

PURE TONE. A sound wave whose instantaneous sound pressure varies essentially as a simple sinusoidal function of time.

RESIDENTIAL ZONE. An area designated as single family residential zone (R-1), residential garden (RG), or high-density multiple-family residential zone (R-3) on the city zoning map.

SOUND. The sensation perceived by the sense of hearing. For the purpose of this chapter, the terms sound and noise shall be used synonymously.

SOUND AMPLIFYING EQUIPMENT. Any device or equipment which amplifies the volume of any sound.

SOUND LEVEL (NOISE LEVEL). Expressed in decibels (dB) is the sound measured with the "A"-weight scale and with slow response by a sound level meter.

SOUND LEVEL METER. An instrument including a microphone, an amplifier, an output meter, and "A" frequency weighting networks for the measurement of sound levels, which satisfies the pertinent requirements in American Standard Specifications for Sound Level Meters SL4-1971 or the most recent revision thereof.

SOUND PRESSURE LEVEL. Twenty times the logarithm to the base ten of the ratio of the root-mean-square sound pressure to the reference pressure, which is 20 micronewtons per square meter.

SOUND TRUCK. Any motor vehicle or any other vehicle, regardless of motive power, whether in motion or stationary, which carries, is equipped with or which has mounted thereon, or attached thereto, any sound amplifying equipment for commercial, political or charitable purposes.

STEADY NOISE. Noise for which the sound pressure level remains essentially constant during the period of observation. It does not vary more than six dBA when measured with the slow meter characteristic of a sound level meter.

(Ord. 1114, passed 5-1-96; Am. Ord. 1388, passed 9-21-16)

§ 130.32 SOUND LEVEL MEASUREMENT.

Any sound level measurement made pursuant to the provisions of this chapter shall be measured with a sound level meter using the "A" weighting and response as indicated in § 130.31.

(Ord. 1114, passed 5-1-96)

§ 130.33 NOISE MEASUREMENT PROCEDURES.

The following procedures shall be utilized for measuring and evaluating exterior noise in the city unless otherwise specified in this chapter:

- (A) Noise measurements shall be conducted any time during the day or night when the suspect noise source is in operation.
- (B) The location selected for noise measurement shall be on the noise receptor's property line at a point approximately ten feet from any building, wall or obstruction (trees, bushes, etc.).
- (C) No individual other than the operator shall be within ten feet of the sound level meter during the measurement period.
- (D) The sound level meter shall be calibrated in accordance with the manufacturer's instructions.
- (E) With the noise source in operation, the operator shall record the instantaneous response at 15-second intervals or less, for a period of 15 minutes or greater. Or, for a noise source in operation for less than 15 minutes, the operator shall record the instantaneous response at 15-second intervals or less for the time the noise source is in operation.
- (F) The suspect noise source shall only be measured for a violation of this subchapter when it is five dBA or greater than another noise source within the measurement vicinity.
- (G) The corrective factors set forth in §130.34(B) shall be applied to the noise standard established for the specific noise zone.
- (H) The suspect noise level shall be compared with the standards in §130.34(A). If the noise level generated from the suspect noise source exceeds the standard, the suspect noise source shall be considered to be in violation of this chapter.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.34 AMBIENT BASE NOISE LEVELS.

(A) It is unlawful for any person within the city to make, cause or allow to be produced noise which is received on property occupied by another person within the designated zone, in excess of the following levels, except as expressly provided otherwise herein:

STANDARDS		
<i>Zone</i>	<i>Day</i> <i>7:00 a.m. - 10:00 p.m.</i>	<i>Night</i> <i>10:00 p.m. - 7:00 a.m.</i>
R-1	55 dBA	45
RG and R-3	60 dBA	55
Commercial	65 dBA	60
Industrial	70 dBA	70

At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone shall be used.

- (B) Corrections to noise limits. The numerical limits given in division (A) of this section shall be adjusted by the following

corrections, where appropriate:

Noise Condition	Correction (in dB)
1. Repetitive impulsive noise, pure tones and sound with cyclically varying amplitude.	-5
2. Steady whine, screech or hum	-5
3. Noise occurring more than 5 but less than 15 minutes per hour.	+2
4. Noise occurring more than 1 but less than 5 minutes per hour.	+5
5. Noise occurring less than 1 minute per hour.	+7

(Ord. 1114, passed 5-1-96; Am. Ord. 1388, passed 9-21-16) Penalty, see § 10.99

§ 130.35 LOUD, UNNECESSARY AND UNUSUAL NOISE.

Notwithstanding any other provision of this chapter, and in addition thereto, it is unlawful for any person to wilfully make or continue, or cause to be made and continued, any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood, or which causes discomfort or annoyance to residents of the area. The standards which shall be considered in determining whether a violation of the provisions of this section exists may include, but not be limited to, the following:

- (A) The level of the noise;
- (B) Whether the nature of the noise is usual or unusual;
- (C) The nature and zoning of the area within which the noise emanates;
- (D) The density of the inhabitation of the area within which the noise emanates;
- (E) The time of day or night the noise occurs;
- (F) The duration of the noise;
- (G) Whether the noise is recurrent, intermittent, or constant; and
- (H) Whether the origin of the noise is natural or unnatural.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.36 VIOLATIONS; ADDITIONAL REMEDIES; INJUNCTIONS.

As an additional remedy, 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 and may be subject to abatement summarily by a restraining order or injunction issued by a court of competent jurisdiction.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.37 SPECIAL NOISE SOURCES.

(A) *Horns and signaling devices.* It is unlawful for any person to sound any horn or signaling device on an automobile, motorcycle or other vehicle on any street or public place of the city, except as a danger warning; to create by means of any such signaling device any unreasonably loud or harsh sound; to sound any such device for an unnecessary and unreasonable period of time; to use any signaling device except one operated by hand or electricity; to sound any horn, whistle or other device operated by engine exhaust; and to use any such signaling device when traffic is for any reason held up.

(B) *Radios, television sets, and similar devices.* It is unlawful for any person within a residential zone of the city to use or operate any radio receiving set, musical instrument, phonograph, television set, or other machine or device for the producing or reproducing of sound (between the hours of 10:00 p.m. of one day and 7:00 a.m., of the following day) in such a manner as to disturb the peace, quiet and comfort of neighboring residents or any reasonable person of normal sensitiveness residing in the area.

(C) *Animals and fowl.* No person shall keep or maintain, or permit the keeping of, upon any premises owned, occupied, or controlled by such person any animal or fowl otherwise permitted to be kept which, by any sound, cry or behavior, shall cause annoyance or discomfort to a reasonable person of normal sensitiveness in any residential neighborhood.

(D) *Exhausts.* It is unlawful for any person to cause emission into the open air of the exhaust from any motorboat or motor vehicle except through a muffler or other device which will effectively prevent loud or explosive noises therefrom.

(E) *Construction of buildings and projects.* It is unlawful for any person within a residential zone, or within a radius of 500

feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any piledriver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device (between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the Department of Public Works. No permit shall be required to perform emergency work as defined in § 130.31.

(F) *Hawkers and peddlers.* It is unlawful for any person within the city to sell anything by outcry within any area of the city zoned for residential uses. 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, and other similar licensed public entertainment events.

(G) *Drums.* It is unlawful for any person to use any drum or other instrument or device of any kind for the purpose of attracting attention by the creation of noise within the city. This section shall not apply to any person who is a participant in a school band or duly licensed parade or who has been otherwise duly authorized to engage in such conduct.

(H) *Schools, churches, libraries, hospitals and convalescent homes.* It is unlawful for any person to create any noise on any city street, sidewalk, or public place adjacent to any school, institution of learning, church or library while the same is in use or adjacent to any hospital or convalescent home, which noise unreasonably interferes with the workings of such institution or which disturbs or unduly annoys patients in such medical facilities, provided conspicuous signs are placed in such streets, sidewalks or public place indicating the presence of these facilities.

(I) *Machinery, equipment, fans and air conditioning.* It is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device (between the hour of 10:00 p.m. of one day and 7:00 a.m. of the following day), use of which is attended by loud or unusual noises.

(J) *Exceptions.* There are exempted from this chapter the following:

- (1) Lawfully conducted parades;
- (2) Emergency work as defined in §130.31;
- (3) Aircraft flight operations;
- (4) Bells, chimes or carillons while being used in conjunction with religious services;
- (5) Commercial motor vehicle operations;
- (6) Emergency energy release devices;
- (7) Speed or endurance events authorized by the city, involving motor or other vehicles;
- (8) Surface carriers engaged in commerce by railroad, except for horns and whistles operated within city limits;
- (9) Systems used to warn community of attack or imminent public danger such as flooding or explosion;
- (10) Any noise or situation within the scope of Sections 23130 or 23109 of the Vehicle Code of the state.

(Ord. 1114, passed 5-1-96); Am. Ord. 1388, passed 9-21-16) Penalty, see § 10.99

§ 130.38 VEHICLES.

(A) *Vehicle repairs.* It is unlawful for any person within any residential area of the city to repair, rebuild, or test any motor vehicle (between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day) in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance.

(B) *Motor-driven vehicles.* It is unlawful for any person to operate any motor-driven vehicle within the city in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance; provided, however, any such vehicle which is operated upon any public highway, street, or right-of-way shall be excluded from the provisions of this section.

(Ord. 1114, passed 5-1-96) PPenalty, see § 10.99

§ 130.39 SOUND AMPLIFYING EQUIPMENT; APPLICABILITY.

No person shall use sound amplifying equipment within the city, except in compliance with the provisions of this subchapter.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.40 COMMERCIAL ACTIVITIES.

(A) No person shall use any sound amplifying equipment for the purpose of advertising the sale or lease of any goods, wares, merchandise or services, except:

- (1) Within an enclosed building in a manner permitted pursuant to §130.42; or

(2) If the sound amplifying equipment is affixed to, or mounted in, a motor vehicle; and the goods, wares or merchandise being advertised for sale are available in the vehicle; and the sound being amplified is a sound, other than the human voice, which is customarily utilized in conjunction with the sale, by vehicle, or such goods, wares and merchandise; provided, that the activities may be conducted only between the hours of 10:00 a.m. and 10:00 p.m. of any day.

(B) Notwithstanding any other provision of this code, a violation of this section shall be deemed to be an infraction.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

§ 130.41 NONCOMMERCIAL ACTIVITIES.

The use of sound amplification equipment for noncommercial activities shall be permitted, subject to the following:

(A) That such use shall be permitted only when the sound amplifying equipment is mounted in or affixed to, a motor vehicle.

(B) That such use shall be permitted only between the hours of 10:00 a.m. and 10:00 p.m. of any day.

(Ord. 1114, passed 5-1-96)

§ 130.42 USE OF SOUND AMPLIFYING EQUIPMENT; COMPLIANCE WITH LAW.

Nothing contained in this subchapter shall be deemed to prohibit the use of sound amplifying equipment, or other similar equipment, by any person at his place of residence, if the use is in compliance with the provisions of § 130.40.

(Ord. 1114, passed 5-1-96)

§ 130.43 FEES FOR USE OF POLICE PERSONNEL AT LOUD OR UNRULY ASSEMBLAGES.

(A) When any loud or unruly assemblage occurs or is held, and the city's police officers are required to respond to the scene in response to citizen complaints and the first responding police officer at the scene determines that there is a threat to the public peace, health, safety or general welfare, police action may be taken, criminal penalties may be imposed, and city costs collected as provided in this section.

(B) Upon the first responding police officer's determination that the assemblage constitutes a threat to the public peace, health, safety or general welfare, then that first responding police officer, or his or her successor or designee, shall do the following:

(1) Notify the owner of the property and/or the person in charge of the property where the assemblage exists, and/or the person responsible for the assemblage, of the following:

(a) Of the circumstances of the assemblage that constitute a threat to public peace, health, safety or general welfare;

(b) That if such person or persons fail or are unable to mitigate, and the Police Department is required to respond a second time, the circumstances of the assemblage constituting a threat to the public peace, health, safety or general welfare such that the threat no longer exists, the Police Department shall have the right to enter the property and any structures or premise thereon and order all individuals participating in the assemblage to exit the property and disperse from the area;

(c) That such person or persons, or in the case of a minor, the parents and/or guardians of the minor, will be held personally liable for all costs in providing additional police personnel on special security assignment over and above the normal services provided by the Police Department in response to the assemblage, including all costs required to enter the property and disburse individuals participating in the assemblage;

(2) If, after a reasonable time following the second notice given according to the provisions of division (B), the supervisor at the scene determines that the circumstances of the assemblage that constitute a threat to public peace, health, safety or general welfare have not been mitigated, or that additional circumstances have arisen which constitute an additional threat to public peace, health, safety or general welfare, that supervisor may direct any subordinate police officer or officers to do the following:

(a) To notify the owner of the property and/or the person in charge of the property where the assemblage exists, and/or the person responsible for the assemblage, that the assemblage will be terminated for failure to mitigate the circumstances of the assemblage that constitute a threat to public peace, health, safety or general welfare;

(b) To enter the property, and any and all structures and premises thereon, on which the assemblage is occurring and order all individuals participating in the assemblage to exit the property and disperse from the area;

(c) To direct, supervise, assist, escort, and manage individuals exiting the property such that their exit proceeds as quickly and safely as is reasonably possible under the circumstances;

(d) To order all individuals participating in the assemblage to disperse from the area following their exit from the property, and to direct, supervise, assist, and manage said dispersal from the area such that their dispersal proceeds as quickly and safely as is reasonably possible under the circumstances;

(3) If any senior police officer at the scene determines that the assemblage constitutes an imminent threat to the physical safety of individuals or property, the senior police officer shall forgo the provisions for giving notice provided in division (B)(1), and shall immediately take action to prevent the threat pursuant to the provisions of division (B)(2).

(C) All police personnel necessarily utilized to control the threat to the public peace, health, safety or general welfare pursuant to division (B) shall be deemed to be on special security assignment over and above the normal services provided and the owner of the property where the assemblage occurs, and/or the person responsible for the assemblage, shall be personally responsible for the cost of the special security assignment according to the following terms:

(1) Any cost of special security assignment levied pursuant to this subdivision shall be determined upon a cost accounting basis by the city, and shall include the cost damage to city property and/or injury to city personnel, all costs relating to police personnel actions to disperse individuals from the assemblage area pursuant to division (B)(2), and any other costs incurred;

(2) All costs levied by this subdivision shall be due and payable upon presentation, constitute a valid and subsisting debt in favor of the city, and may be collected by the city by any legal means, including filing a cause of action for collection in any court of competent jurisdiction;

(3) Any party aggrieved by a levy of costs pursuant to this section may appeal the matter to the City Council in accordance with the provisions of § 30.04.

(D) Any individual who obstructs police actions taken pursuant to division (B)(2) shall be guilty of a misdemeanor punishable by fine of up to \$1,000, imprisonment for up to six months, or both such fine and imprisonment. This penalty shall be in addition to any other administrative, civil, or criminal penalty which may exist in statute, regulation, ordinance, or other provision of law.

(E) Any individual who fails or refuses to comply with a police officer's order to exit property where the assemblage exists, or who fails or refuses to comply with a police officer's order to disburse from an assemblage area, shall be guilty of a misdemeanor punishable by fine of up to \$1,000, imprisonment for up to six months, or both such fine and imprisonment. This penalty shall be in addition to any other administrative, civil, or criminal penalty which may exist in statute, regulation, ordinance, or other provision of law.

(Ord. 1114, passed 5-1-96; Am. Ord. 1196, passed 11-6-02)

§ 130.44 SOUND AMPLIFICATION SYSTEMS.

(A) No person shall operate, or permit operation of, any sound amplification system mounted or installed in any motor vehicle which can be heard from 50 or more feet, from public or private property, unless that system is being operated to request assistance or warn of a hazardous situation.

(B) This section does not apply to authorized emergency vehicles or vehicles operated by gas, electric, communications or water utilities. This section does not apply to the sound systems of vehicles used in parades or other special events.

(Ord. 1114, passed 5-1-96) Penalty, see § 10.99

APPENDIX 5.1:
STUDY AREA PHOTOS

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JN:15410



15410_L1_A 1.North
34, 7' 4.090000"117, 59' 32.040000"



15410_L1_A 2.South
34, 7' 3.980000"117, 59' 32.120000"



15410_L1_A 3.East
34, 7' 4.240000"117, 59' 32.010000"



15410_L1_A 4.West
34, 7' 4.200000"117, 59' 32.040000"

JN:15410



15410_L2_F 1.North
34, 6' 54.760000"117, 58' 32.190000"



15410_L2_F 2.South
34, 6' 54.720000"117, 58' 32.190000"



15410_L2_F 3.East
34, 6' 54.720000"117, 58' 32.190000"



15410_L2_F 4.West
34, 6' 54.650000"117, 58' 32.270000"

JN:15410



15410_L3_H 1.North
34, 6' 19.690000"117, 58' 9.670000"



15410_L3_H 2.South
34, 6' 19.500000"117, 58' 9.640000"



15410_L3_H 3.East
34, 6' 19.480000"117, 58' 9.610000"



15410_L3_H 4.West
34, 6' 19.440000"117, 58' 9.670000"

JN:15410



15410_L4_L 1.North
34, 6' 7.750000"117, 58' 25.460000"



15410_L4_L 2.South
34, 6' 7.660000"117, 58' 25.460000"



15410_L4_L 3.East
34, 6' 7.680000"117, 58' 25.460000"



15410_L4_L 4.West
34, 6' 7.590000"117, 58' 25.350000"

JN:15410



15410_L5_P 1.North
34, 5' 57.600000"117, 58' 40.290000"



15410_L5_P 2.South
34, 5' 57.580000"117, 58' 40.160000"



15410_L5_P 3.East
34, 5' 57.550000"117, 58' 40.160000"



15410_L5_P 4.West
34, 5' 57.560000"117, 58' 40.460000"

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APPENDIX 5.2:
NOISE LEVEL MEASUREMENT WORKSHEETS

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24-Hour Noise Level Measurement Summary

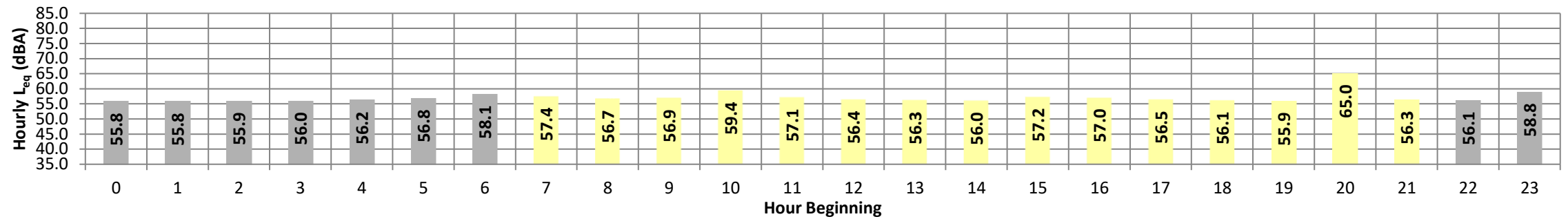
Date: Wednesday, April 26, 2023
Project: Irwindale Gateway

Location: L1 - Located northwest of the site near the residence at 2585
Source: Mountain Ave.

Meter: Piccolo II

JN: 15410
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	55.8	56.3	55.5	56.2	56.2	56.1	56.0	55.9	55.8	55.6	55.6	55.5	55.8	10.0	65.8
	1	55.8	56.3	55.5	56.2	56.1	56.0	56.0	55.9	55.8	55.6	55.6	55.6	55.8	10.0	65.8
	2	55.9	56.3	55.6	56.2	56.2	56.1	56.1	56.0	55.9	55.8	55.7	55.7	55.9	10.0	65.9
	3	56.0	56.4	55.7	56.3	56.3	56.2	56.2	56.1	56.0	55.8	55.8	55.7	56.0	10.0	66.0
	4	56.2	56.6	55.9	56.5	56.5	56.4	56.4	56.3	56.2	56.1	56.0	56.0	56.2	10.0	66.2
	5	56.8	58.1	56.2	57.9	57.8	57.5	57.4	57.0	56.7	56.4	56.4	56.3	56.8	10.0	66.8
Day	6	58.1	60.7	56.7	60.4	60.2	59.9	59.6	58.6	57.8	57.0	56.9	56.8	58.1	10.0	68.1
	7	57.4	59.7	56.4	59.4	59.2	58.8	58.5	57.8	57.2	56.6	56.5	56.4	57.4	0.0	57.4
	8	56.7	58.2	56.2	58.0	57.8	57.4	57.2	56.8	56.6	56.3	56.3	56.2	56.7	0.0	56.7
	9	56.9	60.4	55.9	60.1	59.9	59.1	58.6	57.0	56.5	56.1	56.0	55.9	56.9	0.0	56.9
	10	59.4	68.3	55.9	67.3	65.7	63.1	62.4	59.6	57.4	56.2	56.1	56.0	59.4	0.0	59.4
	11	57.1	60.9	55.5	60.6	60.2	59.4	58.9	57.5	56.6	55.8	55.7	55.5	57.1	0.0	57.1
	12	56.4	59.7	55.1	59.4	59.1	58.4	57.9	56.6	56.1	55.4	55.3	55.2	56.4	0.0	56.4
	13	56.3	59.6	54.9	59.3	58.9	58.2	57.7	56.5	55.9	55.2	55.1	54.9	56.3	0.0	56.3
	14	56.0	58.3	54.9	58.0	57.7	57.2	56.9	56.4	55.8	55.2	55.1	55.0	56.0	0.0	56.0
	15	57.2	66.2	55.1	65.7	64.4	60.7	58.5	56.4	56.0	55.5	55.4	55.2	57.2	0.0	57.2
	16	57.0	63.6	55.0	62.9	62.3	60.6	59.3	56.8	56.1	55.4	55.2	55.1	57.0	0.0	57.0
	17	56.5	59.0	55.2	58.8	58.5	58.0	57.7	56.7	56.2	55.6	55.5	55.3	56.5	0.0	56.5
	18	56.1	58.3	55.2	58.1	57.9	57.5	57.1	56.4	55.9	55.5	55.4	55.3	56.1	0.0	56.1
	19	55.9	57.2	55.2	57.0	56.8	56.6	56.4	56.1	55.8	55.4	55.4	55.3	55.9	5.0	60.9
	20	65.0	79.3	55.6	78.5	77.0	72.6	67.3	56.5	56.1	55.8	55.7	55.6	65.0	5.0	70.0
21	56.3	57.2	55.8	57.1	57.0	56.8	56.7	56.4	56.2	56.0	55.9	55.8	56.3	5.0	61.3	
Night	22	56.1	56.7	55.7	56.6	56.5	56.4	56.4	56.2	56.1	55.9	55.8	55.8	56.1	10.0	66.1
	23	58.8	64.0	55.8	63.9	63.7	63.2	62.8	60.1	56.7	55.9	55.9	55.8	58.8	10.0	68.8
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour CNEL	Leq (dBA)	
Day	Min	55.9	57.2	54.9	57.0	56.8	56.6	56.4	56.1	55.8	55.2	55.1	54.9		Daytime (7am-10pm)	Nighttime (10pm-7am)
Energy Average		58.2	Average:		61.3	60.8	59.6	58.7	56.9	56.3	55.7	55.6	55.5	64.1	58.2	56.8
Night	Min	55.8	56.3	55.5	56.2	56.1	56.0	56.0	55.9	55.8	55.6	55.6	55.5			
Energy Average		56.8	Average:		57.8	57.7	57.5	57.4	56.9	56.3	56.0	56.0	55.9			

24-Hour Noise Level Measurement Summary

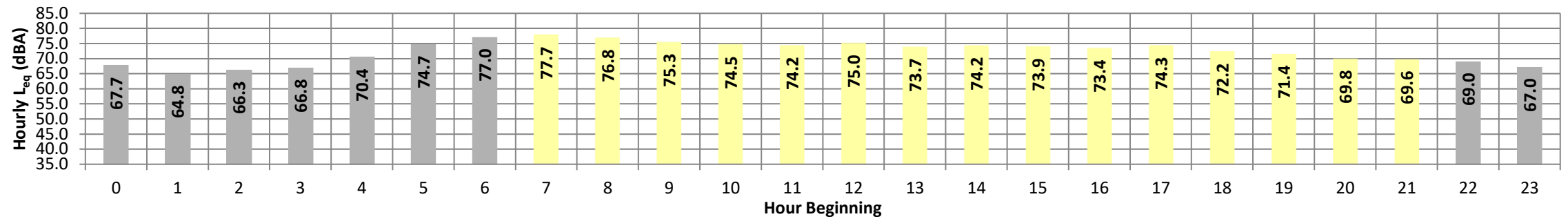
Date: Wednesday, April 26, 2023
Project: Irwindale Gateway

Location: L2 - Located north of the site near the sports complex at 1417
Source: Arrow Hwy.

Meter: Piccolo II

JN: 15410
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	67.7	78.9	58.5	78.4	77.5	74.3	71.9	66.4	63.0	59.6	59.1	58.6	67.7	10.0	77.7
	1	64.8	73.9	57.9	73.5	72.9	70.6	68.9	64.6	62.3	59.1	58.6	58.0	64.8	10.0	74.8
	2	66.3	76.1	58.6	75.7	75.1	72.8	70.5	65.6	62.9	59.8	59.3	58.7	66.3	10.0	76.3
	3	66.8	75.8	60.0	75.5	74.8	72.4	70.8	66.7	64.2	61.2	60.6	60.1	66.8	10.0	76.8
	4	70.4	78.9	63.6	78.6	77.9	75.9	74.6	70.9	67.7	64.6	64.1	63.7	70.4	10.0	80.4
	5	74.7	84.5	66.8	83.8	82.8	80.0	78.3	75.0	72.1	68.1	67.5	67.0	74.7	10.0	84.7
	6	77.0	82.8	69.9	82.5	82.0	80.8	80.2	78.3	76.1	71.7	70.8	70.1	77.0	10.0	87.0
Day	7	77.7	85.5	69.9	85.2	84.5	82.1	80.6	78.5	76.7	72.0	71.0	70.1	77.7	0.0	77.7
	8	76.8	84.8	67.7	84.3	83.7	81.7	80.4	77.5	75.3	69.9	68.8	67.8	76.8	0.0	76.8
	9	75.3	82.4	66.0	82.1	81.6	80.1	79.0	76.4	73.7	68.6	67.1	66.2	75.3	0.0	75.3
	10	74.5	82.1	65.7	81.8	81.3	79.6	78.5	75.4	72.7	67.6	66.6	65.8	74.5	0.0	74.5
	11	74.2	82.0	65.1	81.6	81.0	79.3	78.3	75.1	72.5	66.8	65.9	65.2	74.2	0.0	74.2
	12	75.0	86.2	65.2	85.0	83.6	80.3	78.7	74.9	72.1	67.1	66.1	65.3	75.0	0.0	75.0
	13	73.7	81.6	64.3	81.4	80.8	78.9	77.7	74.6	71.7	66.3	65.3	64.4	73.7	0.0	73.7
	14	74.2	82.7	64.8	82.3	81.6	79.3	77.8	74.8	72.3	67.0	65.9	65.0	74.2	0.0	74.2
	15	73.9	81.7	65.7	81.3	80.6	78.7	77.8	74.5	72.2	67.6	66.7	65.9	73.9	0.0	73.9
	16	73.4	80.3	66.0	80.0	79.4	77.5	76.4	74.2	72.3	68.1	67.0	66.1	73.4	0.0	73.4
	17	74.3	83.3	66.0	83.1	82.4	79.9	77.6	74.3	72.2	68.1	67.1	66.2	74.3	0.0	74.3
	18	72.2	78.9	64.7	78.6	77.9	76.3	75.5	73.2	71.1	66.8	65.9	64.9	72.2	0.0	72.2
	19	71.4	79.5	63.9	78.9	78.0	76.1	74.8	72.3	69.8	65.2	64.6	64.0	71.4	5.0	76.4
	20	69.8	77.4	62.5	77.1	76.6	75.0	74.0	70.7	67.4	63.6	63.1	62.6	69.8	5.0	74.8
	21	69.6	76.9	62.3	76.5	76.0	74.7	73.8	70.6	67.1	63.5	62.9	62.4	69.6	5.0	74.6
Night	22	69.0	76.9	61.9	76.7	76.1	74.4	73.3	69.7	66.4	62.9	62.5	62.0	69.0	10.0	79.0
	23	67.0	75.3	60.3	75.0	74.5	72.9	71.7	67.2	64.2	61.3	60.9	60.4	67.0	10.0	77.0
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour CNEL Leq (dBA)		
Day	Min	69.6	76.9	62.3	76.5	76.0	74.7	73.8	70.6	67.1	63.5	62.9	62.4	78.5	74.2	71.3
	Max	77.7	86.2	69.9	85.2	84.5	82.1	80.6	78.5	76.7	72.0	71.0	70.1			
Energy Average		74.2	Average:		81.3	80.6	78.6	77.4	74.5	71.9	67.2	66.3	65.5			
Night	Min	64.8	73.9	57.9	73.5	72.9	70.6	68.9	64.6	62.3	59.1	58.6	58.0			
	Max	77.0	84.5	69.9	83.8	82.8	80.8	80.2	78.3	76.1	71.7	70.8	70.1			
Energy Average		71.3	Average:		77.7	77.1	74.9	73.4	69.4	66.6	63.1	62.6	62.1			

24-Hour Noise Level Measurement Summary

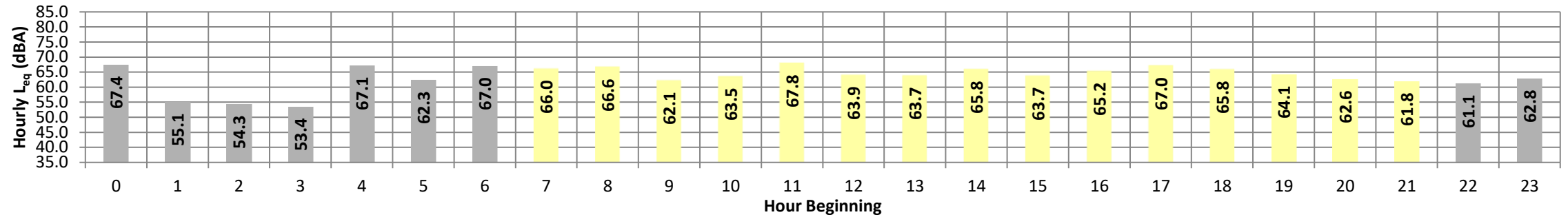
Date: Wednesday, April 26, 2023
Project: Irwindale Gateway

Location: L3 - Located southeast of the site near the residence at 5114
Source: Stewart Ave.

Meter: Piccolo II

JN: 15410
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	67.4	82.3	47.3	81.5	79.8	75.8	69.7	53.9	50.5	48.0	47.7	47.5	67.4	10.0	77.4
	1	55.1	67.1	46.0	66.8	66.1	62.7	59.9	50.7	47.8	46.4	46.2	46.1	55.1	10.0	65.1
	2	54.3	66.5	44.7	66.2	65.5	62.4	59.4	48.8	46.2	45.2	45.0	44.8	54.3	10.0	64.3
	3	53.4	65.1	44.5	64.9	64.4	61.4	58.5	49.0	46.0	44.9	44.8	44.6	53.4	10.0	63.4
	4	67.1	76.0	58.2	75.6	75.2	74.0	72.7	67.1	62.2	62.2	58.8	58.5	67.1	10.0	77.1
	5	62.3	71.8	50.6	71.5	71.1	69.4	68.0	62.1	56.4	56.4	51.6	51.2	50.7	62.3	10.0
Day	6	67.0	76.4	55.4	76.0	75.4	73.4	71.8	67.5	62.8	57.0	56.2	55.6	67.0	10.0	77.0
	7	66.0	74.8	51.7	74.4	74.0	72.5	71.1	66.7	62.0	53.6	52.7	51.9	66.0	0.0	66.0
	8	66.6	77.1	52.9	76.8	75.9	73.3	71.1	66.4	61.9	55.7	54.6	53.2	66.6	0.0	66.6
	9	62.1	71.5	49.8	71.1	70.5	68.5	67.3	62.5	57.4	51.4	50.6	49.9	62.1	0.0	62.1
	10	63.5	75.0	49.3	74.5	73.6	70.8	68.5	62.4	56.9	50.6	50.1	49.5	63.5	0.0	63.5
	11	67.8	81.2	49.7	80.7	79.8	75.3	71.2	63.5	57.2	50.8	50.3	49.8	67.8	0.0	67.8
	12	63.9	74.3	50.1	73.8	73.0	71.1	69.9	63.4	56.5	51.1	50.6	50.2	63.9	0.0	63.9
	13	63.7	74.2	49.6	73.7	73.0	70.5	69.1	63.4	57.4	50.9	50.2	49.7	63.7	0.0	63.7
	14	65.8	76.7	51.3	76.3	75.5	72.7	70.3	65.6	60.4	53.1	52.3	51.6	65.8	0.0	65.8
	15	63.7	73.7	49.0	73.2	72.4	70.1	68.8	64.3	57.9	50.3	49.7	49.1	63.7	0.0	63.7
	16	65.2	75.4	50.5	74.9	73.9	71.4	69.7	66.0	61.0	51.9	51.2	50.6	65.2	0.0	65.2
	17	67.0	77.4	54.4	76.9	76.2	73.7	71.4	66.9	62.7	56.7	55.6	54.6	67.0	0.0	67.0
	18	65.8	75.6	51.7	75.0	74.3	72.2	70.8	66.0	61.0	53.9	53.1	52.1	65.8	0.0	65.8
	19	64.1	74.2	49.6	73.5	72.7	70.7	69.6	64.7	58.3	50.9	50.1	49.7	64.1	5.0	69.1
	20	62.6	72.6	50.8	72.2	71.4	69.2	67.8	62.9	57.4	51.7	51.2	50.9	62.6	5.0	67.6
21	61.8	72.4	50.0	72.0	71.3	69.0	67.2	61.0	55.8	50.6	50.3	50.1	61.8	5.0	66.8	
Night	22	61.1	72.3	49.2	72.0	71.3	68.7	66.7	59.2	53.1	49.8	49.6	49.4	61.1	10.0	71.1
	23	62.8	75.5	48.8	75.2	74.6	70.4	67.1	58.7	53.1	49.3	49.1	48.8	62.8	10.0	72.8
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour L_{eq} (dBA)		
Day	Min	61.8	71.5	49.0	71.1	70.5	68.5	67.2	61.0	55.8	50.3	49.7	49.1	24-Hour CNEL	Daytime (7am-10pm)	Nighttime (10pm-7am)
	Max	67.8	81.2	54.4	80.7	79.8	75.3	71.4	66.9	62.7	56.7	55.6	54.6			
Energy Average		65.0	Average:		74.6	73.8	71.4	69.6	64.4	58.9	52.2	51.5	50.9	70.6	65.0	63.7
Night	Min	53.4	65.1	44.5	64.9	64.4	61.4	58.5	48.8	46.0	44.9	44.8	44.6			
	Max	67.4	82.3	58.2	81.5	79.8	75.8	72.7	67.5	62.8	58.8	58.5	58.4			
Energy Average		63.7	Average:		72.2	71.5	68.7	66.0	57.4	53.1	50.1	49.8	49.5			

24-Hour Noise Level Measurement Summary

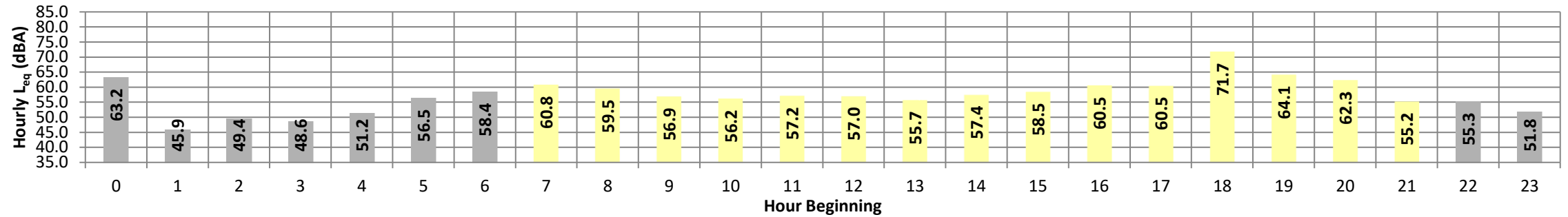
Date: Wednesday, April 26, 2023
Project: Irwindale Gateway

Location: L4 - Located south of the site near the residence at 13803
Source: Chilcot St.

Meter: Piccolo II

JN: 15410
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	63.2	75.3	43.9	74.9	74.6	72.2	68.6	55.9	47.9	44.7	44.4	44.0	63.2	10.0	73.2
	1	45.9	52.9	42.0	52.5	52.0	50.7	49.5	45.8	44.4	42.7	42.4	42.1	45.9	10.0	55.9
	2	49.4	60.5	43.0	60.1	59.4	55.9	53.6	47.0	45.3	43.7	43.4	43.1	49.4	10.0	59.4
	3	48.6	59.6	44.3	58.7	57.5	52.4	50.6	47.9	46.6	45.0	44.7	44.4	48.6	10.0	58.6
	4	51.2	60.7	47.3	60.2	59.3	56.5	54.6	50.3	49.1	47.9	47.7	47.4	51.2	10.0	61.2
	5	56.5	65.6	52.8	65.2	64.4	61.3	59.1	55.7	54.7	53.6	53.3	53.0	56.5	10.0	66.5
Day	6	58.4	68.1	53.7	67.6	66.6	63.6	61.4	57.5	56.3	54.7	54.3	53.9	58.4	10.0	68.4
	7	60.8	70.8	49.8	70.3	69.5	67.3	65.4	61.2	56.7	51.9	51.2	50.3	60.8	0.0	60.8
	8	59.5	71.8	46.7	71.3	70.5	67.2	64.3	56.7	51.6	47.9	47.4	46.9	59.5	0.0	59.5
	9	56.9	67.2	47.7	66.8	66.0	63.6	61.4	55.8	53.3	49.4	48.5	48.0	56.9	0.0	56.9
	10	56.2	67.1	47.7	66.6	65.9	63.3	60.7	54.3	52.2	49.2	48.7	47.9	56.2	0.0	56.2
	11	57.2	67.8	48.7	67.2	66.3	63.2	60.6	56.4	54.6	50.4	49.9	49.2	57.2	0.0	57.2
	12	57.0	68.7	48.6	68.0	67.0	63.5	60.7	54.9	53.0	50.2	49.6	48.9	57.0	0.0	57.0
	13	55.7	65.9	47.6	65.4	64.7	62.4	60.2	54.5	51.7	48.7	48.3	47.8	55.7	0.0	55.7
	14	57.4	69.7	48.1	69.2	68.3	64.7	61.7	54.2	51.5	49.0	48.6	48.3	57.4	0.0	57.4
	15	58.5	69.4	49.9	69.0	68.1	64.9	62.4	57.2	54.6	51.7	51.1	50.4	58.5	0.0	58.5
	16	60.5	71.0	50.9	70.5	69.7	67.1	65.3	59.9	56.0	52.5	51.9	51.3	60.5	0.0	60.5
	17	60.5	70.4	52.0	69.6	68.6	66.2	64.7	60.4	57.7	53.8	53.0	52.3	60.5	0.0	60.5
	18	71.7	84.8	53.1	84.7	83.9	80.4	76.0	61.9	58.8	55.0	54.4	53.5	71.7	0.0	71.7
	19	64.1	73.4	58.6	72.7	72.0	70.3	68.5	63.4	61.3	59.2	58.9	58.7	64.1	5.0	69.1
	20	62.3	76.6	49.1	75.9	74.4	69.2	65.3	54.4	51.1	49.7	49.5	49.2	62.3	5.0	67.3
21	55.2	66.0	49.5	65.5	64.8	62.0	59.7	52.9	51.0	49.9	49.8	49.6	55.2	5.0	60.2	
Night	22	55.3	66.5	47.8	66.0	65.5	63.4	60.3	51.5	49.5	48.4	48.2	47.9	55.3	10.0	65.3
	23	51.8	61.4	47.1	60.9	60.2	57.3	55.2	51.5	49.0	47.7	47.4	47.2	51.8	10.0	61.8
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour CNEL Leq (dBA)		
Day	Min	55.2	65.9	46.7	65.4	64.7	62.0	59.7	52.9	51.0	47.9	47.4	46.9	65.1	62.6	56.5
	Max	71.7	84.8	58.6	84.7	83.9	80.4	76.0	63.4	61.3	59.2	58.9	58.7			
Energy Average		62.6	Average:		70.2	69.3	66.4	63.8	57.2	54.4	51.2	50.7	50.2			
Night	Min	45.9	52.9	42.0	52.5	52.0	50.7	49.5	45.8	44.4	42.7	42.4	42.1			
	Max	63.2	75.3	53.7	74.9	74.6	72.2	68.6	57.5	56.3	54.7	54.3	53.9			
Energy Average		56.5	Average:		62.9	62.2	59.3	57.0	51.5	49.2	47.6	47.3	47.0			

24-Hour Noise Level Measurement Summary

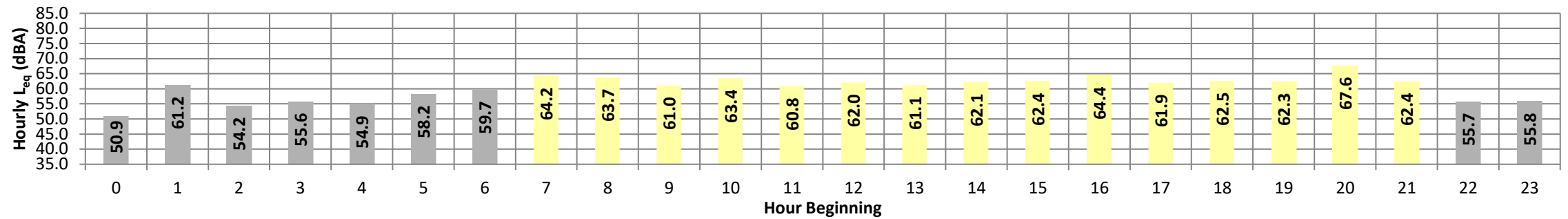
Date: Wednesday, April 26, 2023
Project: Irwindale Gateway

Location: L4 - Located south of the site near the residence at 13602 Olive
Source: St.

Meter: Piccolo II

JN: 15410
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	50.9	58.5	44.9	58.2	57.9	56.8	55.6	51.7	47.7	45.6	45.3	45.0	50.9	10.0	60.9
	1	61.2	75.3	43.7	74.8	73.7	69.4	63.7	51.2	46.5	44.3	44.0	43.8	61.2	10.0	71.2
	2	54.2	65.3	43.9	65.1	64.6	61.8	59.3	52.4	47.5	44.6	44.3	44.0	54.2	10.0	64.2
	3	55.6	67.5	45.0	67.1	65.8	63.3	61.1	53.8	48.8	45.7	45.3	45.1	55.6	10.0	65.6
	4	54.9	63.9	46.9	63.7	63.5	62.8	60.9	53.7	49.2	47.4	47.2	47.0	54.9	10.0	64.9
	5	58.2	68.0	51.2	67.8	67.5	65.4	63.0	57.0	53.8	51.8	51.5	51.3	58.2	10.0	68.2
Day	6	59.7	69.1	53.2	68.6	68.0	66.1	63.8	59.5	56.6	53.9	53.6	53.3	59.7	10.0	69.7
	7	64.2	75.8	51.8	75.5	74.9	71.9	68.9	61.5	57.2	52.8	52.3	51.9	64.2	0.0	64.2
	8	63.7	73.7	53.7	73.3	72.9	70.7	68.6	62.7	59.4	55.2	54.5	53.8	63.7	0.0	63.7
	9	61.0	72.2	52.3	71.6	70.7	67.5	65.8	59.5	56.6	53.4	52.9	52.5	61.0	0.0	61.0
	10	63.4	76.7	49.9	76.2	75.1	71.4	67.2	57.7	53.9	50.7	50.3	50.0	63.4	0.0	63.4
	11	60.8	71.1	51.3	70.8	70.3	68.5	66.0	59.1	56.2	52.3	51.9	51.4	60.8	0.0	60.8
	12	62.0	72.9	52.0	72.1	71.1	68.5	66.6	61.2	57.8	53.5	52.9	52.2	62.0	0.0	62.0
	13	61.1	70.9	51.2	70.5	70.0	67.9	66.2	59.9	55.9	52.5	51.9	51.3	61.1	0.0	61.1
	14	62.1	72.0	51.5	71.6	71.0	69.5	67.9	60.7	56.3	52.5	52.0	51.6	62.1	0.0	62.1
	15	62.4	74.1	50.6	73.7	73.1	69.8	68.4	59.2	54.7	51.2	50.9	50.7	62.4	0.0	62.4
	16	64.4	75.7	51.5	75.4	75.0	73.1	70.4	60.7	55.8	52.3	51.9	51.6	64.4	0.0	64.4
	17	61.9	72.4	52.2	72.0	71.3	69.0	66.7	60.8	56.9	53.1	52.7	52.3	61.9	0.0	61.9
	18	62.5	72.2	52.9	71.8	71.4	69.6	68.2	61.2	58.3	54.5	53.8	53.1	62.5	0.0	62.5
	19	62.3	71.9	53.4	71.6	71.3	69.3	66.3	61.5	59.4	55.2	54.2	53.6	62.3	5.0	67.3
	20	67.6	75.0	53.8	74.8	74.5	73.5	72.4	69.0	64.6	54.8	54.4	54.0	67.6	5.0	72.6
21	62.4	75.0	52.5	74.4	73.4	70.4	67.6	56.8	54.5	52.9	52.8	52.6	62.4	5.0	67.4	
Night	22	55.7	63.9	50.7	63.6	63.1	61.6	59.9	55.5	53.1	51.1	50.9	50.8	55.7	10.0	65.7
Night	23	55.8	64.9	50.1	64.7	64.3	62.2	60.9	55.1	52.6	50.5	50.3	50.1	55.8	10.0	65.8
Timeframe	Hour	L_{eq}	L_{max}	L_{min}	L1%	L2%	L5%	L8%	L25%	L50%	L90%	L95%	L99%	24-Hour CNEL Leq (dBA)		
Day	Min	60.8	70.9	49.9	70.5	70.0	67.5	65.8	56.8	53.9	50.7	50.3	50.0	66.1	63.2	57.2
	Max	67.6	76.7	53.8	76.2	75.1	73.5	72.4	69.0	64.6	55.2	54.5	54.0			
Energy Average		63.2	Average:		73.0	72.4	70.1	67.8	60.8	57.2	53.1	52.6	52.2			
Night	Min	50.9	58.5	43.7	58.2	57.9	56.8	55.6	51.2	46.5	44.3	44.0	43.8			
	Max	61.2	75.3	53.2	74.8	73.7	69.4	63.8	59.5	56.6	53.9	53.6	53.3			
Energy Average		57.2	Average:		66.0	65.4	63.3	60.9	54.4	50.6	48.3	48.1	47.8			

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APPENDIX 7.1:

OPTION 1 - OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,210 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 938 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.28	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-12.00	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.42	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	63.9	61.0	59.2	66.6	66.9	
Medium Trucks:	67.3	65.8	59.7	60.6	68.0	68.1	
Heavy Trucks:	70.1	69.0	60.0	62.1	70.1	70.2	
Vehicle Noise:	72.9	71.5	65.0	65.6	73.2	73.4	

Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	66	141	304	656			
CNEL:	67	145	313	673			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,405 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 956 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.50% Medium Trucks: 77.7% 4.8% 17.5% 9.08% Heavy Trucks: 84.3% 2.7% 13.0% 5.42%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.20	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-11.94	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.18	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.0	61.0	59.3	66.6	67.0	
Medium Trucks:	67.4	65.8	59.7	60.6	68.0	68.2	
Heavy Trucks:	70.4	69.2	60.3	62.4	70.3	70.4	
Vehicle Noise:	73.1	71.7	65.2	65.7	73.4	73.5	

Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	67	145	312	671			
CNEL:	69	149	320	689			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,107 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,572 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.03	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.76	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.18	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.2	63.2	61.5	68.8	69.1	
Medium Trucks:	69.5	68.0	61.9	62.8	70.2	70.4	
Heavy Trucks:	72.4	71.2	62.3	64.4	72.3	72.4	
Vehicle Noise:	75.1	73.8	67.3	67.8	75.5	75.6	

Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	92	199	429	925			
CNEL:	95	205	441	950			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,302 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,590 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.56% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.35%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.01	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.72	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.03	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.2	63.3	61.5	68.9	69.2	
Medium Trucks:	69.6	68.1	62.0	62.8	70.2	70.4	
Heavy Trucks:	72.5	71.4	62.4	64.5	72.5	72.6	
Vehicle Noise:	75.2	73.9	67.3	67.9	75.6	75.7	

Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	94	202	435	938			
CNEL:	96	208	447	964			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,384 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,333 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.68	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.05	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.47	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	67.9	64.9	63.2	70.5	70.8
Medium Trucks:	71.3	69.7	63.6	64.5	71.9	72.1
Heavy Trucks:	74.1	72.9	64.0	66.1	74.0	74.1
Vehicle Noise:	76.9	75.5	69.0	69.5	77.2	77.3

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	120	259	559	1,203	
CNEL:	124	266	574	1,236	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,579 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,351 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.59% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.31%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.71	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.02	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.37	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	67.9	65.0	63.2	70.6	70.9
Medium Trucks:	71.3	69.8	63.7	64.5	72.0	72.1
Heavy Trucks:	74.2	73.0	64.1	66.2	74.1	74.2
Vehicle Noise:	76.9	75.5	69.0	69.6	77.2	77.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	121	262	564	1,215	
CNEL:	125	269	579	1,248	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 9,965 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 916 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.38	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-12.11	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-14.53	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.4	61.4	59.7	67.0	67.3
Medium Trucks:	67.7	66.2	60.1	61.0	68.4	68.6
Heavy Trucks:	70.6	69.4	60.5	62.6	70.5	70.6
Vehicle Noise:	73.3	72.0	65.5	66.0	73.7	73.8

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	53	113	244	526	
CNEL:	54	116	251	540	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,068 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 925 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.52% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.36%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.34	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-12.07	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-14.37	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	64.4	61.4	59.7	67.0	67.4
Medium Trucks:	67.8	66.3	60.2	61.0	68.5	68.6
Heavy Trucks:	70.7	69.6	60.6	62.7	70.7	70.8
Vehicle Noise:	73.4	72.1	65.5	66.1	73.8	73.9

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	53	115	248	534	
CNEL:	55	118	255	549	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 15,626 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,436 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.43	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-10.15	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-12.57	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	66.3	63.4	61.6	69.0	69.3
Medium Trucks:	69.7	68.2	62.1	63.0	70.4	70.5
Heavy Trucks:	72.5	71.4	62.4	64.5	72.5	72.6
Vehicle Noise:	75.3	73.9	67.4	68.0	75.6	75.8

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	71	153	330	510	
CNEL:	73	157	339	518	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 15,729 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,445 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.57% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.31%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.40	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-10.13	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-12.47	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	66.3	63.4	61.6	69.0	69.3
Medium Trucks:	69.7	68.2	62.1	63.0	70.4	70.6
Heavy Trucks:	72.6	71.5	62.5	64.6	72.6	72.7
Vehicle Noise:	75.4	74.0	67.5	68.0	75.7	75.9

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	72	154	333	517	
CNEL:	74	159	342	526	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 22,418 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,060 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.14	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-8.59	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-11.01	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	67.9	64.9	63.2	70.5	70.8
Medium Trucks:	71.3	69.7	63.6	64.5	71.9	72.1
Heavy Trucks:	74.1	72.9	64.0	66.1	74.0	74.2
Vehicle Noise:	76.9	75.5	69.0	69.5	77.2	77.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	90	195	419	903	
CNEL:	93	200	431	928	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 22,521 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,070 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.59% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.29%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.16	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-8.57	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-10.93	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	67.9	64.9	63.2	70.5	70.9
Medium Trucks:	71.3	69.8	63.7	64.5	72.0	72.1
Heavy Trucks:	74.2	73.0	64.1	66.1	74.1	74.2
Vehicle Noise:	76.9	75.5	69.0	69.6	77.2	77.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	91	196	422	909	
CNEL:	93	201	434	934	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,885 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,000 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.00	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-11.72	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.14	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.2	61.3	59.5	66.8	67.2
Medium Trucks:	67.6	66.1	60.0	60.8	68.2	68.4
Heavy Trucks:	70.4	69.3	60.3	62.4	70.4	70.5
Vehicle Noise:	73.2	71.8	65.3	65.8	73.5	73.7

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	68	147	318	684	
CNEL:	70	151	326	703	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,091 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,019 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.42% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.48%			
				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: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.93	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-11.65	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-13.86	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	64.3	61.3	59.6	66.9	67.2
Medium Trucks:	67.6	66.1	60.0	60.9	68.3	68.5
Heavy Trucks:	70.7	69.5	60.6	62.7	70.6	70.8
Vehicle Noise:	73.4	72.0	65.4	66.0	73.7	73.8

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	70	151	326	703	
CNEL:	72	156	335	722	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,327 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,500 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.24	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.96	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.38	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.0	63.0	61.3	68.6	68.9
Medium Trucks:	69.3	67.8	61.7	62.6	70.0	70.2
Heavy Trucks:	72.2	71.0	62.1	64.2	72.1	72.2
Vehicle Noise:	74.9	73.6	67.1	67.6	75.3	75.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	90	193	416	897	
CNEL:	92	198	427	921	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,533 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,519 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.50% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.39%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.19	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.91	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.19	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.0	63.1	61.3	68.7	69.0
Medium Trucks:	69.4	67.9	61.8	62.6	70.1	70.2
Heavy Trucks:	72.4	71.2	62.3	64.3	72.3	72.4
Vehicle Noise:	75.1	73.7	67.2	67.7	75.4	75.5

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	91	197	424	913	
CNEL:	94	202	435	938	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 22,859 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,101 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.23	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.50	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.92	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	67.4	64.5	62.7	70.1	70.4	
Medium Trucks:	70.8	69.3	63.2	64.1	71.5	71.6	
Heavy Trucks:	73.6	72.5	63.5	65.6	73.6	73.7	
Vehicle Noise:	76.4	75.0	68.5	69.1	76.7	76.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			112	242	521	1,122	
CNEL:			115	248	535	1,153	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,065 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,120 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.54% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.35%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.26	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.47	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.78	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	67.5	64.5	62.8	70.1	70.4	
Medium Trucks:	70.8	69.3	63.2	64.1	71.5	71.7	
Heavy Trucks:	73.8	72.6	63.7	65.8	73.7	73.8	
Vehicle Noise:	76.5	75.1	68.6	69.1	76.8	77.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			114	245	528	1,137	
CNEL:			117	252	542	1,168	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,632 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,539 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.68	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.10	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	68.7	65.7	64.0	71.3	71.6	
Medium Trucks:	72.0	70.5	64.4	65.3	72.7	72.9	
Heavy Trucks:	74.9	73.7	64.8	66.9	74.8	74.9	
Vehicle Noise:	77.6	76.3	69.8	70.3	78.0	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			170	365	787	1,696	
CNEL:			174	375	809	1,743	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,004 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,574 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.72% Medium Trucks: 77.7% 4.8% 17.5% 9.04% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.11	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.66	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.03	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	68.7	65.8	64.0	71.4	71.7	
Medium Trucks:	72.1	70.5	64.4	65.3	72.7	72.9	
Heavy Trucks:	75.0	73.8	64.8	66.9	74.9	75.0	
Vehicle Noise:	77.7	76.3	69.8	70.4	78.0	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			171	368	794	1,710	
CNEL:			176	378	815	1,756	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,323 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,522 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.47	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.26	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.68	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.1	67.1	65.4	72.7	73.0
Medium Trucks:	73.5	71.9	65.8	66.7	74.1	74.3
Heavy Trucks:	76.3	75.1	66.2	68.3	76.2	76.4
Vehicle Noise:	79.1	77.7	71.2	71.7	79.4	79.6

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	211	455	979	2,110	
CNEL:	217	467	1,006	2,167	

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,695 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,556 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.70% Medium Trucks: 77.7% 4.8% 17.5% 9.06% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.51	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.24	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.63	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.1	67.2	65.4	72.8	73.1
Medium Trucks:	73.5	71.9	65.9	66.7	74.1	74.3
Heavy Trucks:	76.4	75.2	66.2	68.3	76.3	76.4
Vehicle Noise:	79.1	77.7	71.2	71.8	79.4	79.6

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	212	457	985	2,122	
CNEL:	218	470	1,012	2,180	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,151 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,701 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.72	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-5.00	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.42	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	71.3	68.4	66.6	74.0	74.3
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6
Heavy Trucks:	77.6	76.4	67.4	69.5	77.5	77.6
Vehicle Noise:	80.3	78.9	72.4	73.0	80.6	80.8

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	256	551	1,187	2,558	
CNEL:	263	566	1,219	2,627	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,523 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,735 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.69% Medium Trucks: 77.7% 4.8% 17.5% 9.08% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.76	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-4.99	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.39	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	71.4	68.4	66.7	74.0	74.3
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6
Heavy Trucks:	77.6	76.4	67.5	69.6	77.5	77.6
Vehicle Noise:	80.3	79.0	72.5	73.0	80.7	80.8

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	257	553	1,192	2,569	
CNEL:	264	568	1,225	2,638	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,632 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,539 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.68	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.10	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	68.7	65.7	64.0	71.3	71.6	
Medium Trucks:	72.0	70.5	64.4	65.3	72.7	72.9	
Heavy Trucks:	74.9	73.7	64.8	66.9	74.8	74.9	
Vehicle Noise:	77.6	76.3	69.8	70.3	78.0	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			170	365	787	1,696	
CNEL:			174	375	809	1,743	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,205 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,592 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.51% Medium Trucks: 77.7% 4.8% 17.5% 9.07% Heavy Trucks: 84.3% 2.7% 13.0% 5.42%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.13	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.62	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.85	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	68.8	65.8	64.0	71.4	71.7	
Medium Trucks:	72.1	70.6	64.5	65.4	72.8	72.9	
Heavy Trucks:	75.1	74.0	65.0	67.1	75.1	75.2	
Vehicle Noise:	77.8	76.4	69.9	70.5	78.1	78.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			174	374	807	1,738	
CNEL:			178	385	828	1,785	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,323 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,522 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.47	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.26	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.68	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.1	67.1	65.4	72.7	73.0	
Medium Trucks:	73.5	71.9	65.8	66.7	74.1	74.3	
Heavy Trucks:	76.3	75.1	66.2	68.3	76.2	76.4	
Vehicle Noise:	79.1	77.7	71.2	71.7	79.4	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			211	455	979	2,110	
CNEL:			217	467	1,006	2,167	

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,896 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,575 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.55% Medium Trucks: 77.7% 4.8% 17.5% 9.08% Heavy Trucks: 84.3% 2.7% 13.0% 5.37%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.53	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.21	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.50	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.2	67.2	65.4	72.8	73.1	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.3	
Heavy Trucks:	76.5	75.3	66.4	68.5	76.4	76.5	
Vehicle Noise:	79.2	77.8	71.3	71.8	79.5	79.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			215	463	997	2,147	
CNEL:			221	475	1,024	2,205	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,151 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,701 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.72	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-5.00	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.42	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	71.3	68.4	66.6	74.0	74.3
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6
Heavy Trucks:	77.6	76.4	67.4	69.5	77.5	77.6
Vehicle Noise:	80.3	78.9	72.4	73.0	80.6	80.8

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	256	551	1,187	2,558	
CNEL:	263	566	1,219	2,627	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,724 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,753 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.58% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.33%			
				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: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.77	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-4.97	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.29	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	71.4	68.4	66.7	74.0	74.3
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6
Heavy Trucks:	77.7	76.5	67.6	69.7	77.6	77.7
Vehicle Noise:	80.4	79.0	72.5	73.1	80.7	80.9

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	259	558	1,203	2,592	
CNEL:	266	573	1,235	2,662	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: e/o Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,505 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,517 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.19	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.92	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.33	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	66.4	63.5	61.7	69.1	69.4
Medium Trucks:	69.8	68.3	62.2	63.1	70.5	70.6
Heavy Trucks:	72.7	71.5	62.5	64.6	72.6	72.7
Vehicle Noise:	75.4	74.0	67.5	68.1	75.7	75.9

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	120	259	558	1,203	
CNEL:	124	266	574	1,236	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: e/o Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,648 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,622 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 84.80% Medium Trucks: 77.7% 4.8% 17.5% 9.07% Heavy Trucks: 84.3% 2.7% 13.0% 6.13%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.06	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.65	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.35	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	66.7	63.7	62.0	69.3	69.6
Medium Trucks:	70.1	68.5	62.4	63.3	70.7	70.9
Heavy Trucks:	73.6	72.5	63.5	65.6	73.6	73.7
Vehicle Noise:	76.1	74.7	68.0	68.7	76.3	76.5

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	132	285	615	1,324	
CNEL:	136	293	631	1,359	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: e/o Graham Road					Project Name: Irwindale Gateway SP Job Number: 15410				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 28,756 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,643 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	2.22	3.14	-1.20	-4.65	0.000	0.000		
Medium Trucks:	77.72	-7.50	3.20	-1.20	-4.87	0.000	0.000		
Heavy Trucks:	82.99	-9.92	3.19	-1.20	-5.43	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	70.7	68.8	65.9	64.1	71.5	71.8			
Medium Trucks:	72.2	70.7	64.6	65.5	72.9	73.1			
Heavy Trucks:	75.1	73.9	64.9	67.0	75.0	75.1			
Vehicle Noise:	77.8	76.4	69.9	70.5	78.1	78.3			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			174	375	809	1,742			
CNEL:			179	386	831	1,789			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: e/o Graham Road					Project Name: Irwindale Gateway SP Job Number: 15410				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 29,899 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,748 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.15% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.76%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	2.37	3.14	-1.20	-4.65	0.000	0.000		
Medium Trucks:	77.72	-7.35	3.20	-1.20	-4.87	0.000	0.000		
Heavy Trucks:	82.99	-9.33	3.19	-1.20	-5.43	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	70.8	69.0	66.0	64.3	71.6	71.9			
Medium Trucks:	72.4	70.8	64.7	65.6	73.0	73.2			
Heavy Trucks:	75.7	74.5	65.5	67.6	75.6	75.7			
Vehicle Noise:	78.2	76.8	70.2	70.8	78.5	78.7			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			184	397	856	1,844			
CNEL:			189	408	879	1,893			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: e/o Graham Road					Project Name: Irwindale Gateway SP Job Number: 15410				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 43,456 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,994 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	4.02	3.14	-1.20	-4.65	0.000	0.000		
Medium Trucks:	77.72	-5.71	3.20	-1.20	-4.87	0.000	0.000		
Heavy Trucks:	82.99	-8.13	3.19	-1.20	-5.43	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	72.5	70.6	67.7	65.9	73.3	73.6			
Medium Trucks:	74.0	72.5	66.4	67.3	74.7	74.8			
Heavy Trucks:	76.9	75.7	66.7	68.8	76.8	76.9			
Vehicle Noise:	79.6	78.2	71.7	72.3	79.9	80.1			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			229	494	1,065	2,294			
CNEL:			236	508	1,094	2,357			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)									
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: e/o Graham Road					Project Name: Irwindale Gateway SP Job Number: 15410				
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS					
Highway Data				Site Conditions (Hard = 10, Soft = 15)					
Average Daily Traffic (Adt): 44,599 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,099 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15					
Site Data				Vehicle Mix					
				VehicleType	Day	Evening	Night	Daily	
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.32% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.58%					
				Noise Source Elevations (in feet)					
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0					
				Lane Equivalent Distance (in feet)					
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150					
FHWA Noise Model Calculations									
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten		
Autos:	66.51	4.11	3.14	-1.20	-4.65	0.000	0.000		
Medium Trucks:	77.72	-5.61	3.20	-1.20	-4.87	0.000	0.000		
Heavy Trucks:	82.99	-7.73	3.19	-1.20	-5.43	0.000	0.000		
Unmitigated Noise Levels (without Topo and barrier attenuation)									
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL			
Autos:	72.6	70.7	67.8	66.0	73.4	73.7			
Medium Trucks:	74.1	72.6	66.5	67.4	74.8	75.0			
Heavy Trucks:	77.3	76.1	67.1	69.2	77.2	77.3			
Vehicle Noise:	79.9	78.5	71.9	72.5	80.2	80.3			
Centerline Distance to Noise Contour (in feet)									
			70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:			238	513	1,106	2,383			
CNEL:			245	527	1,136	2,447			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,226 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.24	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.48	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.90	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	66.9	63.9	62.2	69.5	69.8	
Medium Trucks:	70.2	68.7	62.6	63.5	70.9	71.1	
Heavy Trucks:	73.1	71.9	63.0	65.0	73.0	73.1	
Vehicle Noise:	75.8	74.4	68.0	68.5	76.2	76.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			129	277	597	1,285	
CNEL:			132	284	613	1,320	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,830 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,730 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.31% Medium Trucks: 77.7% 4.8% 17.5% 9.07% Heavy Trucks: 84.3% 2.7% 13.0% 5.62%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.37	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.37	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.45	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.0	64.0	62.3	69.6	69.9	
Medium Trucks:	70.3	68.8	62.7	63.6	71.0	71.2	
Heavy Trucks:	73.5	72.4	63.4	65.5	73.5	73.6	
Vehicle Noise:	76.1	74.8	68.2	68.8	76.4	76.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			134	289	624	1,343	
CNEL:			138	297	640	1,379	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,955 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,569 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.10	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.63	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.05	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	68.7	65.8	64.0	71.4	71.7	
Medium Trucks:	72.1	70.6	64.5	65.3	72.8	72.9	
Heavy Trucks:	74.9	73.8	64.8	66.9	74.9	75.0	
Vehicle Noise:	77.7	76.3	69.8	70.4	78.0	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			171	368	794	1,710	
CNEL:			176	378	815	1,756	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,559 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,625 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.42% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.49%			
				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: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.18	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.55	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.74	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	68.8	65.8	64.1	71.4	71.7	
Medium Trucks:	72.2	70.6	64.5	65.4	72.8	73.0	
Heavy Trucks:	75.2	74.1	65.1	67.2	75.2	75.3	
Vehicle Noise:	77.9	76.5	70.0	70.5	78.2	78.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			176	379	817	1,760	
CNEL:			181	389	839	1,807	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 39,630 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,642 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.61	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.11	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.53	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	70.2	67.3	65.5	72.9	73.2
Medium Trucks:	73.6	72.1	66.0	66.9	74.3	74.4
Heavy Trucks:	76.5	75.3	66.3	68.4	76.4	76.5
Vehicle Noise:	79.2	77.8	71.3	71.9	79.5	79.7

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	216	465	1,001	2,157	
CNEL:	222	477	1,029	2,216	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 40,234 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,697 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.49% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.41%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.67	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.06	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.31	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	70.3	67.3	65.6	72.9	73.2
Medium Trucks:	73.7	72.1	66.0	66.9	74.3	74.5
Heavy Trucks:	76.7	75.5	66.5	68.6	76.6	76.7
Vehicle Noise:	79.3	78.0	71.4	72.0	79.7	79.8

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	220	475	1,022	2,202	
CNEL:	226	487	1,050	2,262	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,385 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,690 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.23	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-9.96	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.38	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	68.3	65.4	63.6	71.0	71.3
Medium Trucks:	71.5	70.0	63.9	64.7	72.2	72.3
Heavy Trucks:	73.9	72.7	63.7	65.8	73.8	73.9
Vehicle Noise:	76.9	75.5	69.2	69.6	77.2	77.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	152	327	705	1,519	
CNEL:	156	336	725	1,561	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,834 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,731 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.41% Medium Trucks: 77.7% 4.8% 17.5% 9.08% Heavy Trucks: 84.3% 2.7% 13.0% 5.51%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.14	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-9.87	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.04	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	68.4	65.5	63.7	71.1	71.4
Medium Trucks:	71.6	70.1	64.0	64.8	72.2	72.4
Heavy Trucks:	74.2	73.0	64.1	66.2	74.1	74.2
Vehicle Noise:	77.1	75.7	69.3	69.8	77.4	77.6

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	157	337	727	1,566	
CNEL:	161	347	747	1,610	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,342 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,697 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-7.93	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.35	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	70.4	67.4	65.7	73.0	73.3	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.4	
Heavy Trucks:	75.9	74.7	65.8	67.9	75.8	75.9	
Vehicle Noise:	78.9	77.5	71.2	71.6	79.3	79.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			207	447	963	2,074	
CNEL:			213	459	989	2,132	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,791 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,738 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.50% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.41%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-7.87	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.13	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.3	70.4	67.5	65.7	73.1	73.4	
Medium Trucks:	73.6	72.1	66.0	66.8	74.2	74.4	
Heavy Trucks:	76.1	74.9	66.0	68.1	76.0	76.2	
Vehicle Noise:	79.1	77.7	71.3	71.8	79.4	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			211	456	982	2,115	
CNEL:			217	468	1,009	2,174	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 42,489 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,905 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.41	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.32	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.74	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.8	72.0	69.0	67.3	74.6	74.9	
Medium Trucks:	75.1	73.6	67.5	68.4	75.8	76.0	
Heavy Trucks:	77.5	76.3	67.4	69.5	77.4	77.5	
Vehicle Noise:	80.5	79.1	72.8	73.2	80.9	81.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			265	572	1,232	2,655	
CNEL:			273	588	1,266	2,729	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 42,938 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,946 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.54% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.35%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.45	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.28	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.59	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.8	72.0	69.1	67.3	74.6	75.0	
Medium Trucks:	75.2	73.6	67.6	68.4	75.8	76.0	
Heavy Trucks:	77.7	76.5	67.5	69.6	77.6	77.7	
Vehicle Noise:	80.6	79.2	73.3	73.3	81.0	81.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			269	580	1,249	2,691	
CNEL:			277	596	1,284	2,766	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,969 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,559 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.58	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-10.31	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.73	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.0	65.0	63.3	70.6	70.9	
Medium Trucks:	71.1	69.6	63.5	64.4	71.8	72.0	
Heavy Trucks:	73.5	72.4	63.4	65.5	73.4	73.6	
Vehicle Noise:	76.5	75.1	68.8	69.3	76.9	77.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			144	310	668	1,440	
CNEL:			148	319	687	1,480	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,329 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,593 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.39% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.51%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.50	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-10.23	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.41	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.1	65.1	63.4	70.7	71.0	
Medium Trucks:	71.2	69.7	63.6	64.5	71.9	72.1	
Heavy Trucks:	73.8	72.7	63.7	65.8	73.8	73.9	
Vehicle Noise:	76.7	75.3	69.0	69.4	77.1	77.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			148	319	688	1,482	
CNEL:			152	328	707	1,523	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,507 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,528 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.52	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-8.21	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.63	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.1	67.1	65.4	72.7	73.0	
Medium Trucks:	73.2	71.7	65.6	66.5	73.9	74.1	
Heavy Trucks:	75.6	74.5	65.5	67.6	75.5	75.7	
Vehicle Noise:	78.6	77.2	70.9	71.4	79.0	79.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			199	428	922	1,987	
CNEL:			204	440	948	2,042	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,867 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,561 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.49% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.40%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.57	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-8.16	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.43	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.1	67.2	65.4	72.8	73.1	
Medium Trucks:	73.3	71.8	65.7	66.5	74.0	74.1	
Heavy Trucks:	75.8	74.6	65.7	67.8	75.7	75.9	
Vehicle Noise:	78.8	77.4	71.0	71.5	79.1	79.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			202	436	939	2,023	
CNEL:			208	448	965	2,079	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 40,153 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,690 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.16	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.57	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.99	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.6	71.7	68.8	67.0	74.4	74.7	
Medium Trucks:	74.9	73.4	67.3	68.1	75.6	75.7	
Heavy Trucks:	77.3	76.1	67.1	69.2	77.2	77.3	
Vehicle Noise:	80.3	78.9	72.6	73.0	80.6	80.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			256	551	1,187	2,556	
CNEL:			263	566	1,220	2,628	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 40,513 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,723 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.54% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.35%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.19	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.53	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.85	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.6	71.8	68.8	67.1	74.4	74.7	
Medium Trucks:	74.9	73.4	67.3	68.2	75.6	75.8	
Heavy Trucks:	77.4	76.2	67.3	69.4	77.3	77.4	
Vehicle Noise:	80.4	79.0	72.6	73.1	80.7	80.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			259	558	1,201	2,588	
CNEL:			266	573	1,235	2,660	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 34,298 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,152 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.48	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.25	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.67	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	70.6	67.7	65.9	73.3	73.6	
Medium Trucks:	73.8	72.3	66.2	67.0	74.5	74.6	
Heavy Trucks:	76.2	75.0	66.0	68.1	76.1	76.2	
Vehicle Noise:	79.2	77.8	71.5	71.9	79.5	79.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			173	372	802	1,727	
CNEL:			178	383	824	1,776	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 34,714 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,190 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.71% Medium Trucks: 77.7% 4.8% 17.5% 9.05% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.53	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.23	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.61	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	70.7	67.7	66.0	73.3	73.6	
Medium Trucks:	73.8	72.3	66.2	67.1	74.5	74.6	
Heavy Trucks:	76.2	75.1	66.1	68.2	76.2	76.3	
Vehicle Noise:	79.2	77.8	71.5	71.9	79.6	79.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			174	375	808	1,740	
CNEL:			179	385	830	1,789	

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 49,679 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,566 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.08	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-5.64	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.06	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	72.2	69.3	67.5	74.9	75.2
Medium Trucks:	75.4	73.9	67.8	68.6	76.1	76.2
Heavy Trucks:	77.8	76.6	67.6	69.7	77.7	77.8
Vehicle Noise:	80.8	79.4	73.1	73.5	81.1	81.3

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	221	476	1,026	2,211	
CNEL:	227	490	1,055	2,273	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 50,095 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,604 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.69% Medium Trucks: 77.7% 4.8% 17.5% 9.07% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.12	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-5.63	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.02	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	72.3	69.3	67.6	74.9	75.2
Medium Trucks:	75.4	73.9	67.8	68.7	76.1	76.2
Heavy Trucks:	77.8	76.6	67.7	69.8	77.7	77.9
Vehicle Noise:	80.8	79.4	73.1	73.5	81.2	81.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	222	479	1,032	2,223	
CNEL:	228	492	1,060	2,285	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 68,137 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 6,262 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.46	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-4.27	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-6.69	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.4	73.6	70.7	68.9	76.2	76.6
Medium Trucks:	76.8	75.2	69.1	70.0	77.4	77.6
Heavy Trucks:	79.1	78.0	69.0	71.1	79.1	79.2
Vehicle Noise:	82.2	80.8	74.4	74.9	82.5	82.7

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	273	588	1,267	2,730	
CNEL:	281	605	1,302	2,806	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 68,553 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 6,300 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.68% Medium Trucks: 77.7% 4.8% 17.5% 9.08% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.48	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-4.26	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-6.66	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.5	73.6	70.7	68.9	76.3	76.6
Medium Trucks:	76.8	75.2	69.2	70.0	77.4	77.6
Heavy Trucks:	79.2	78.0	69.0	71.1	79.1	79.2
Vehicle Noise:	82.2	80.8	74.5	74.9	82.5	82.7

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	274	590	1,272	2,740	
CNEL:	282	607	1,307	2,816	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: e/o Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 15,351 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,411 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.02	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-10.74	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-13.16	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.1	64.2	62.4	69.8	70.1
Medium Trucks:	70.3	68.8	62.7	63.5	71.0	71.1
Heavy Trucks:	72.7	71.5	62.5	64.6	72.6	72.7
Vehicle Noise:	75.7	74.3	68.0	68.4	76.0	76.2

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	101	218	469	1,011	
CNEL:	104	224	482	1,039	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: e/o Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 15,443 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,419 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.63% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.27%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.99	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-10.73	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-13.10	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.2	64.2	62.5	69.8	70.1
Medium Trucks:	70.3	68.8	62.7	63.6	71.0	71.2
Heavy Trucks:	72.7	71.6	62.6	64.7	72.7	72.8
Vehicle Noise:	75.7	74.3	68.0	68.4	76.1	76.3

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	102	219	472	1,017	
CNEL:	105	225	485	1,045	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: e/o Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 24,999 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,297 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.10	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-8.62	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.04	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	69.3	66.3	64.6	71.9	72.2
Medium Trucks:	72.4	70.9	64.8	65.7	73.1	73.3
Heavy Trucks:	74.8	73.6	64.7	66.7	74.7	74.8
Vehicle Noise:	77.8	76.4	70.1	70.5	78.2	78.3

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	140	301	649	1,399	
CNEL:	144	310	668	1,438	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: e/o Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,091 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,306 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.64% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.25%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.12	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-8.61	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.01	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	69.3	66.3	64.6	71.9	72.2
Medium Trucks:	72.4	70.9	64.8	65.7	73.1	73.3
Heavy Trucks:	74.8	73.7	64.7	66.8	74.8	74.9
Vehicle Noise:	77.8	76.4	70.1	70.5	78.2	78.4

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	140	303	652	1,404	
CNEL:	144	311	670	1,443	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Arrow Highway Road Segment: e/o Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 36,576 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,361 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.75	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-6.97	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.39	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	70.9	68.0	66.2	73.5	73.9	
Medium Trucks:	74.1	72.5	66.4	67.3	74.7	74.9	
Heavy Trucks:	76.4	75.3	66.3	68.4	76.4	76.5	
Vehicle Noise:	79.5	78.1	71.7	72.2	79.8	80.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			180	388	837	1,803	
CNEL:			185	399	860	1,853	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Arrow Highway Road Segment: e/o Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 36,668 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,370 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.64% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.77	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-6.96	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.36	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	70.9	68.0	66.2	73.6	73.9	
Medium Trucks:	74.1	72.5	66.5	67.3	74.7	74.9	
Heavy Trucks:	76.5	75.3	66.3	68.4	76.4	76.5	
Vehicle Noise:	79.5	78.1	71.8	72.2	79.8	80.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			181	389	839	1,808	
CNEL:			186	400	862	1,858	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: e/o I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,358 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,044 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-12.05	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.47	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	65.8	62.9	61.1	68.5	68.8	
Medium Trucks:	69.0	67.5	61.4	62.2	69.7	69.8	
Heavy Trucks:	71.4	70.2	61.2	63.3	71.3	71.4	
Vehicle Noise:	74.4	73.0	66.7	67.1	74.7	74.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			83	178	384	827	
CNEL:			85	183	394	850	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: e/o I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,512 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,058 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.49% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.41%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.27	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-12.00	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.26	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	65.9	62.9	61.2	68.5	68.8	
Medium Trucks:	69.0	67.5	61.4	62.3	69.7	69.9	
Heavy Trucks:	71.6	70.4	61.4	63.5	71.5	71.6	
Vehicle Noise:	74.5	73.1	66.8	67.2	74.9	75.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			84	182	391	842	
CNEL:			87	187	402	866	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: e/o I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 20,881 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,919 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.32	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-9.41	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.83	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	68.5	65.5	63.8	71.1	71.4	
Medium Trucks:	71.6	70.1	64.0	64.9	72.3	72.5	
Heavy Trucks:	74.0	72.8	63.9	66.0	73.9	74.0	
Vehicle Noise:	77.0	75.6	69.3	69.7	77.4	77.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			124	267	576	1,241	
CNEL:			128	275	592	1,275	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: e/o I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 21,035 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,933 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 72.4% 9.2% 18.4% 85.56% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.32%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.35	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-9.38	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.71	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	68.5	65.5	63.8	71.1	71.5	
Medium Trucks:	71.7	70.1	64.0	64.9	72.3	72.5	
Heavy Trucks:	74.1	73.0	64.0	66.1	74.0	74.2	
Vehicle Noise:	77.1	75.7	69.4	69.8	77.4	77.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			125	270	582	1,254	
CNEL:			129	278	598	1,288	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Arrow Highway Road Segment: e/o I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 32,309 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,969 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.22	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.51	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.93	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	70.4	67.4	65.7	73.0	73.3	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.4	
Heavy Trucks:	75.9	74.7	65.8	67.9	75.8	75.9	
Vehicle Noise:	78.9	77.5	71.2	71.6	79.3	79.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			166	358	770	1,660	
CNEL:			171	368	792	1,706	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Arrow Highway Road Segment: e/o I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 32,463 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,983 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
			VehicleType	Day	Evening	Night	Daily
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 72.4% 9.2% 18.4% 85.59% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.29%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.23	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.49	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.86	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	70.4	67.4	65.7	73.0	73.3	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.4	
Heavy Trucks:	76.0	74.8	65.8	67.9	75.9	76.0	
Vehicle Noise:	79.0	77.6	71.2	71.7	79.3	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			167	360	776	1,671	
CNEL:			172	370	797	1,718	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,846 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,548 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.61	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-10.34	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.76	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.0	65.0	63.3	70.6	70.9
Medium Trucks:	71.1	69.6	63.5	64.4	71.8	72.0
Heavy Trucks:	73.5	72.3	63.4	65.5	73.4	73.5
Vehicle Noise:	76.5	75.1	68.8	69.2	76.9	77.0

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	143	309	665	1,433	
CNEL:	147	317	684	1,473	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,155 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,577 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.43% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.47%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.54	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-10.27	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.48	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.0	65.1	63.3	70.7	71.0
Medium Trucks:	71.2	69.7	63.6	64.4	71.9	72.0
Heavy Trucks:	73.8	72.6	63.6	65.7	73.7	73.8
Vehicle Noise:	76.7	75.3	68.9	69.4	77.0	77.2

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	147	317	682	1,469	
CNEL:	151	325	701	1,510	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,441 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,706 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-7.91	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.33	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	70.4	67.4	65.7	73.0	73.3
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.4
Heavy Trucks:	75.9	74.7	65.8	67.9	75.8	76.0
Vehicle Noise:	78.9	77.5	71.2	71.6	79.3	79.5

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	208	448	965	2,079	
CNEL:	214	460	992	2,137	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,750 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,734 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.52% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.37%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.85	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-7.87	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.17	3.19	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	70.4	67.5	65.7	73.1	73.4
Medium Trucks:	73.6	72.1	66.0	66.8	74.2	74.4
Heavy Trucks:	76.1	74.9	65.9	68.0	76.0	76.1
Vehicle Noise:	79.0	77.6	71.3	71.7	79.4	79.6

Centerline Distance to Noise Contour (in feet)					
	70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:	211	454	979	2,109	
CNEL:	217	467	1,006	2,168	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 44,554 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,095 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.61	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.11	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.53	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.0	72.2	69.2	67.5	74.8	75.1	
Medium Trucks:	75.3	73.8	67.7	68.6	76.0	76.2	
Heavy Trucks:	77.7	76.5	67.6	69.7	77.6	77.8	
Vehicle Noise:	80.7	79.3	73.0	73.4	81.1	81.3	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	274	590	1,272	2,740			
CNEL:	282	607	1,307	2,816			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 44,863 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,123 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet			Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
Site Data			Vehicle Mix				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees			Autos: 72.4% 9.2% 18.4% 85.57% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.32%				
			Noise Source Elevations (in feet)				
			Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0				
			Lane Equivalent Distance (in feet)				
			Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150				
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.64	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.09	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.43	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.0	72.2	69.2	67.5	74.8	75.2	
Medium Trucks:	75.4	73.8	67.7	68.6	76.0	76.2	
Heavy Trucks:	77.8	76.7	67.7	69.8	77.7	77.9	
Vehicle Noise:	80.8	79.4	73.1	73.5	81.1	81.3	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	277	596	1,284	2,766			
CNEL:	284	613	1,320	2,843			

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APPENDIX 7.2:

OPTION 2 - OFF-SITE TRAFFIC NOISE LEVEL CALCULATIONS

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,210 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 938 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.28	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-12.00	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.42	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	63.9	61.0	59.2	66.6	66.9	
Medium Trucks:	67.3	65.8	59.7	60.6	68.0	68.1	
Heavy Trucks:	70.1	69.0	60.0	62.1	70.1	70.2	
Vehicle Noise:	72.9	71.5	65.0	65.6	73.2	73.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			66	141	304	656	
CNEL:			67	145	313	673	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,353 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 951 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.53% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.38%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.22	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-11.95	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.23	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.0	61.0	59.3	66.6	66.9	
Medium Trucks:	67.3	65.8	59.7	60.6	68.0	68.2	
Heavy Trucks:	70.3	69.2	60.2	62.3	70.3	70.4	
Vehicle Noise:	73.0	71.6	65.1	65.7	73.3	73.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			67	144	310	668	
CNEL:			69	148	318	686	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,107 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,572 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.03	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.76	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.18	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.2	63.2	61.5	68.8	69.1	
Medium Trucks:	69.5	68.0	61.9	62.8	70.2	70.4	
Heavy Trucks:	72.4	71.2	62.3	64.4	72.3	72.4	
Vehicle Noise:	75.1	73.8	67.3	67.8	75.5	75.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			92	199	429	925	
CNEL:			95	205	441	950	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,250 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,585 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.58% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.32%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.00	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.73	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.07	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.2	63.2	61.5	68.8	69.2	
Medium Trucks:	69.6	68.0	62.0	62.8	70.2	70.4	
Heavy Trucks:	72.5	71.3	62.4	64.5	72.4	72.5	
Vehicle Noise:	75.2	73.8	67.3	67.9	75.5	75.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			93	201	434	935	
CNEL:			96	207	446	960	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,384 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,333 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.68	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.05	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.47	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	67.9	64.9	63.2	70.5	70.8	
Medium Trucks:	71.3	69.7	63.6	64.5	71.9	72.1	
Heavy Trucks:	74.1	72.9	64.0	66.1	74.0	74.1	
Vehicle Noise:	76.9	75.5	69.0	69.5	77.2	77.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			120	259	559	1,203	
CNEL:			124	266	574	1,236	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Avenida Barbosa Road Segment: n/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,527 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,346 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.60% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.29%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.70	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.03	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.39	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	67.9	65.0	63.2	70.5	70.9	
Medium Trucks:	71.3	69.7	63.7	64.5	71.9	72.1	
Heavy Trucks:	74.2	73.0	64.1	66.1	74.1	74.2	
Vehicle Noise:	76.9	75.5	69.0	69.6	77.2	77.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			121	261	563	1,212	
CNEL:			124	268	578	1,245	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 9,965 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 916 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.38	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-12.11	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-14.53	3.32	-1.20	-5.77	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	64.4	61.4	59.7	67.0	67.3	
Medium Trucks:	67.7	66.2	60.1	61.0	68.4	68.6	
Heavy Trucks:	70.6	69.4	60.5	62.6	70.5	70.6	
Vehicle Noise:	73.3	72.0	65.5	66.0	73.7	73.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			53	113	244	526	
CNEL:			54	116	251	540	

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,041 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 923 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.55% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.33%			
				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: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.35	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:	77.72	-12.08	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:	82.99	-14.41	3.32	-1.20	-5.77	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	64.4	61.4	59.7	67.0	67.3	
Medium Trucks:	67.8	66.2	60.2	61.0	68.4	68.6	
Heavy Trucks:	70.7	69.5	60.6	62.7	70.6	70.8	
Vehicle Noise:	73.4	72.0	65.5	66.1	73.7	73.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			53	115	247	532	
CNEL:			55	118	254	547	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2028 NP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 15,626 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,436 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				66.51	-0.43	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:				77.72	-10.15	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:				82.99	-12.57	3.32	-1.20	-5.77	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				71	153	330	710			
CNEL:				73	157	339	730			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2028 WP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 15,702 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,443 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.59% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.29%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				66.51	-0.41	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:				77.72	-10.13	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:				82.99	-12.50	3.32	-1.20	-5.77	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				72	154	332	715			
CNEL:				73	158	341	735			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2040 NP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 22,418 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,060 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				66.51	1.14	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:				77.72	-8.59	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:				82.99	-11.01	3.32	-1.20	-5.77	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				90	195	419	903			
CNEL:				93	200	431	928			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2040 WP Road Name: Rivergrade Road Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 22,494 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,067 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.61% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.27%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 29.816 Medium Trucks: 29.518 Heavy Trucks: 29.547						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				66.51	1.15	3.26	-1.20	-4.49	0.000	0.000
Medium Trucks:				77.72	-8.57	3.33	-1.20	-4.86	0.000	0.000
Heavy Trucks:				82.99	-10.95	3.32	-1.20	-5.77	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				91	196	421	908			
CNEL:				93	201	433	933			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 10,885 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,000 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.00	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-11.72	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-14.14	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.2	61.3	59.5	66.8	67.2	
Medium Trucks:	67.6	66.1	60.0	60.8	68.2	68.4	
Heavy Trucks:	70.4	69.3	60.3	62.4	70.4	70.5	
Vehicle Noise:	73.2	71.8	65.3	65.8	73.5	73.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			68	147	318	684	
CNEL:			70	151	326	703	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,036 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,014 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.47% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.42%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.95	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-11.67	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-13.93	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	64.3	61.3	59.6	66.9	67.2	
Medium Trucks:	67.6	66.1	60.0	60.9	68.3	68.5	
Heavy Trucks:	70.6	69.5	60.5	62.6	70.6	70.7	
Vehicle Noise:	73.3	71.9	65.4	66.0	73.6	73.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			70	150	324	698	
CNEL:			72	155	333	717	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,327 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,500 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.24	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.96	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.38	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.0	63.0	61.3	68.6	68.9	
Medium Trucks:	69.3	67.8	61.7	62.6	70.0	70.2	
Heavy Trucks:	72.2	71.0	62.1	64.2	72.1	72.2	
Vehicle Noise:	74.9	73.6	67.1	67.6	75.3	75.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			90	193	416	897	
CNEL:			92	198	427	921	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,478 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,514 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.53% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.36%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.20	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-9.93	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.24	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.0	63.0	61.3	68.6	69.0	
Medium Trucks:	69.4	67.8	61.8	62.6	70.0	70.2	
Heavy Trucks:	72.3	71.2	62.2	64.3	72.3	72.4	
Vehicle Noise:	75.0	73.6	67.1	67.7	75.3	75.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			91	196	422	909	
CNEL:			93	201	433	934	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 22,859 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,101 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.23	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.50	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.92	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	67.4	64.5	62.7	70.1	70.4	
Medium Trucks:	70.8	69.3	63.2	64.1	71.5	71.6	
Heavy Trucks:	73.6	72.5	63.5	65.6	73.6	73.7	
Vehicle Noise:	76.4	75.0	68.5	69.1	76.7	76.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			112	242	521	1,122	
CNEL:			115	248	535	1,153	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Balwin Park Blvd. Road Segment: s/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 23,010 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,115 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.32%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.25	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	77.72	-8.47	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.82	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	67.5	64.5	62.8	70.1	70.4	
Medium Trucks:	70.8	69.3	63.2	64.1	71.5	71.7	
Heavy Trucks:	73.8	72.6	63.6	65.7	73.7	73.8	
Vehicle Noise:	76.5	75.1	68.6	69.1	76.8	77.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			113	244	526	1,133	
CNEL:			116	251	540	1,164	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,632 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,539 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.68	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.10	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	68.7	65.7	64.0	71.3	71.6	
Medium Trucks:	72.0	70.5	64.4	65.3	72.7	72.9	
Heavy Trucks:	74.9	73.7	64.8	66.9	74.8	74.9	
Vehicle Noise:	77.6	76.3	69.8	70.3	78.0	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			170	365	787	1,696	
CNEL:			174	375	809	1,743	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,903 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,564 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.70% Medium Trucks: 77.7% 4.8% 17.5% 9.06% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.09	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.66	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.04	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	68.7	65.8	64.0	71.3	71.7	
Medium Trucks:	72.0	70.5	64.4	65.3	72.7	72.9	
Heavy Trucks:	74.9	73.8	64.8	66.9	74.9	75.0	
Vehicle Noise:	77.7	76.3	69.8	70.3	78.0	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			171	368	792	1,707	
CNEL:			175	378	814	1,753	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,323 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,522 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.47	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.26	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.68	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.1	67.1	65.4	72.7	73.0	
Medium Trucks:	73.5	71.9	65.8	66.7	74.1	74.3	
Heavy Trucks:	76.3	75.1	66.2	68.3	76.2	76.4	
Vehicle Noise:	79.1	77.7	71.2	71.7	79.4	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			211	455	979	2,110	
CNEL:			217	467	1,006	2,167	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,594 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,547 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.69% Medium Trucks: 77.7% 4.8% 17.5% 9.08% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.50	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.25	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.64	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.1	67.2	65.4	72.8	73.1	
Medium Trucks:	73.5	71.9	65.9	66.7	74.1	74.3	
Heavy Trucks:	76.3	75.2	66.2	68.3	76.3	76.4	
Vehicle Noise:	79.1	77.7	71.2	71.8	79.4	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			212	457	984	2,119	
CNEL:			218	469	1,010	2,176	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,151 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,701 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.72	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-5.00	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.42	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	71.3	68.4	66.6	74.0	74.3	
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6	
Heavy Trucks:	77.6	76.4	67.4	69.5	77.5	77.6	
Vehicle Noise:	80.3	78.9	72.4	73.0	80.6	80.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			256	551	1,187	2,558	
CNEL:			263	566	1,219	2,627	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: s/o Arrow Highway				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,422 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,726 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.68% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.75	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-5.00	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.39	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	71.4	68.4	66.7	74.0	74.3	
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6	
Heavy Trucks:	77.6	76.4	67.5	69.6	77.5	77.6	
Vehicle Noise:	80.3	78.9	72.5	73.0	80.7	80.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			257	553	1,191	2,566	
CNEL:			264	568	1,223	2,636	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,632 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,539 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.68	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.10	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	68.7	65.7	64.0	71.3	71.6	
Medium Trucks:	72.0	70.5	64.4	65.3	72.7	72.9	
Heavy Trucks:	74.9	73.7	64.8	66.9	74.8	74.9	
Vehicle Noise:	77.6	76.3	69.8	70.3	78.0	78.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			170	365	787	1,696	
CNEL:			174	375	809	1,743	

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,052 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,578 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.54% Medium Trucks: 77.7% 4.8% 17.5% 9.08% Heavy Trucks: 84.3% 2.7% 13.0% 5.38%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.11	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.63	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.91	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	68.7	65.8	64.0	71.4	71.7	
Medium Trucks:	72.1	70.6	64.5	65.3	72.8	72.9	
Heavy Trucks:	75.1	73.9	65.0	67.0	75.0	75.1	
Vehicle Noise:	77.8	76.4	69.9	70.4	78.1	78.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			173	372	802	1,728	
CNEL:			177	382	824	1,775	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,323 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,522 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.47	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.26	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.68	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.1	67.1	65.4	72.7	73.0	
Medium Trucks:	73.5	71.9	65.8	66.7	74.1	74.3	
Heavy Trucks:	76.3	75.1	66.2	68.3	76.2	76.4	
Vehicle Noise:	79.1	77.7	71.2	71.7	79.4	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			211	455	979	2,110	
CNEL:			217	467	1,006	2,167	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 38,743 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,560 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.57% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.34%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.51	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.22	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.54	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.1	67.2	65.4	72.8	73.1	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.3	
Heavy Trucks:	76.4	75.3	66.3	68.4	76.4	76.5	
Vehicle Noise:	79.1	77.8	71.3	71.8	79.5	79.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			214	461	992	2,138	
CNEL:			220	473	1,019	2,196	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,151 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,701 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.72	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-5.00	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.42	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	71.3	68.4	66.6	74.0	74.3	
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6	
Heavy Trucks:	77.6	76.4	67.4	69.5	77.5	77.6	
Vehicle Noise:	80.3	78.9	72.4	73.0	80.6	80.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			256	551	1,187	2,558	
CNEL:			263	566	1,219	2,627	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o I-605 SB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 51,571 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,739 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.59% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.31%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	4.76	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-4.98	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-7.32	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	71.4	68.4	66.7	74.0	74.3	
Medium Trucks:	74.7	73.2	67.1	68.0	75.4	75.6	
Heavy Trucks:	77.7	76.5	67.5	69.6	77.6	77.7	
Vehicle Noise:	80.4	79.0	72.5	73.0	80.7	80.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			258	557	1,199	2,583	
CNEL:			265	572	1,232	2,653	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: e/o Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,505 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,517 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.19	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.92	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-12.33	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	66.4	63.5	61.7	69.1	69.4	
Medium Trucks:	69.8	68.3	62.2	63.1	70.5	70.6	
Heavy Trucks:	72.7	71.5	62.5	64.6	72.6	72.7	
Vehicle Noise:	75.4	74.0	67.5	68.1	75.7	75.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			120	259	558	1,203	
CNEL:			124	266	574	1,236	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: e/o Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,344 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,594 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 84.97% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.93%			
				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: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.01	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.71	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.57	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	66.6	63.7	61.9	69.2	69.6	
Medium Trucks:	70.0	68.5	62.4	63.3	70.7	70.8	
Heavy Trucks:	73.4	72.3	63.3	65.4	73.3	73.5	
Vehicle Noise:	75.9	74.5	67.9	68.5	76.2	76.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			130	279	601	1,295	
CNEL:			133	287	617	1,330	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																			
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: elo Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 28,756 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,643 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				66.51	2.22	3.14	-1.20	-4.65	0.000	0.000									
Medium Trucks:				77.72	-7.50	3.20	-1.20	-4.87	0.000	0.000									
Heavy Trucks:				82.99	-9.92	3.19	-1.20	-5.43	0.000	0.000									
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				174				375				809				1,742			
CNEL:				179				386				831				1,789			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																			
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: elo Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 29,595 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,720 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.25% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.64%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				66.51	2.33	3.14	-1.20	-4.65	0.000	0.000									
Medium Trucks:				77.72	-7.39	3.20	-1.20	-4.87	0.000	0.000									
Heavy Trucks:				82.99	-9.47	3.19	-1.20	-5.43	0.000	0.000									
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				182				392				845				1,819			
CNEL:				187				402				867				1,868			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																			
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: elo Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 43,456 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,994 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				66.51	4.02	3.14	-1.20	-4.65	0.000	0.000									
Medium Trucks:				77.72	-5.71	3.20	-1.20	-4.87	0.000	0.000									
Heavy Trucks:				82.99	-8.13	3.19	-1.20	-5.43	0.000	0.000									
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				229				494				1,065				2,294			
CNEL:				236				508				1,094				2,357			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)																			
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: elo Graham Road				Project Name: Irwindale Gateway SP Job Number: 15410															
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS															
Highway Data				Site Conditions (Hard = 10, Soft = 15)															
Average Daily Traffic (Adt): 44,295 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,071 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
Site Data				Vehicle Mix															
				VehicleType	Day	Evening	Night	Daily											
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.39% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.50%															
FHWA Noise Model Calculations				Noise Source Elevations (in feet)															
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0															
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)															
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150															
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten									
Autos:				66.51	4.08	3.14	-1.20	-4.65	0.000	0.000									
Medium Trucks:				77.72	-5.63	3.20	-1.20	-4.87	0.000	0.000									
Heavy Trucks:				82.99	-7.82	3.19	-1.20	-5.43	0.000	0.000									
Centerline Distance to Noise Contour (in feet)				70 dBA				65 dBA				60 dBA				55 dBA			
Ldn:				236				509				1,096				2,362			
CNEL:				243				523				1,126				2,425			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,226 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.24	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.48	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.90	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	66.9	63.9	62.2	69.5	69.8	
Medium Trucks:	70.2	68.7	62.6	63.5	70.9	71.1	
Heavy Trucks:	73.1	71.9	63.0	65.0	73.0	73.1	
Vehicle Noise:	75.8	74.4	68.0	68.5	76.2	76.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			129	277	597	1,285	
CNEL:			132	284	613	1,320	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,669 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,716 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.38% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.53%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.33	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-9.40	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-11.55	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.0	64.0	62.3	69.6	69.9	
Medium Trucks:	70.3	68.8	62.7	63.6	71.0	71.2	
Heavy Trucks:	73.4	72.3	63.3	65.4	73.4	73.5	
Vehicle Noise:	76.1	74.7	68.1	68.7	76.4	76.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			133	286	617	1,329	
CNEL:			137	294	634	1,365	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,955 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,569 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.10	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.63	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-10.05	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	68.7	65.8	64.0	71.4	71.7	
Medium Trucks:	72.1	70.6	64.5	65.3	72.8	72.9	
Heavy Trucks:	74.9	73.8	64.8	66.9	74.9	75.0	
Vehicle Noise:	77.7	76.3	69.8	70.4	78.0	78.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			171	368	794	1,710	
CNEL:			176	378	815	1,756	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 28,398 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,610 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.47% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.43%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.16	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-7.57	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-9.81	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	68.8	65.8	64.1	71.4	71.7	
Medium Trucks:	72.1	70.6	64.5	65.4	72.8	73.0	
Heavy Trucks:	75.2	74.0	65.0	67.1	75.1	75.2	
Vehicle Noise:	77.8	76.5	69.9	70.5	78.2	78.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			175	377	811	1,748	
CNEL:			180	387	833	1,795	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 39,630 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,642 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.61	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.11	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.53	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	70.2	67.3	65.5	72.9	73.2	
Medium Trucks:	73.6	72.1	66.0	66.9	74.3	74.4	
Heavy Trucks:	76.5	75.3	66.3	68.4	76.4	76.5	
Vehicle Noise:	79.2	77.8	71.3	71.9	79.5	79.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			216	465	1,001	2,157	
CNEL:			222	477	1,029	2,216	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o Rivergrade Road				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 40,073 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,683 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.52% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.37%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.66	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	77.72	-6.07	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	82.99	-8.37	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	70.3	67.3	65.6	72.9	73.2	
Medium Trucks:	73.6	72.1	66.0	66.9	74.3	74.5	
Heavy Trucks:	76.6	75.5	66.5	68.6	76.6	76.7	
Vehicle Noise:	79.3	77.9	71.4	72.0	79.6	79.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			219	472	1,017	2,192	
CNEL:			225	485	1,045	2,251	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,385 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,690 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.23	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-9.96	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.38	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	68.3	65.4	63.6	71.0	71.3	
Medium Trucks:	71.5	70.0	63.9	64.7	72.2	72.3	
Heavy Trucks:	73.9	72.7	63.7	65.8	73.8	73.9	
Vehicle Noise:	76.9	75.5	69.2	69.6	77.2	77.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			152	327	705	1,519	
CNEL:			156	336	725	1,561	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 18,715 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,720 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.46% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.45%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.17	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-9.89	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.12	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	68.4	65.4	63.7	71.0	71.3	
Medium Trucks:	71.6	70.0	63.9	64.8	72.2	72.4	
Heavy Trucks:	74.1	73.0	64.0	66.1	74.1	74.2	
Vehicle Noise:	77.0	75.7	69.3	69.7	77.4	77.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			155	335	722	1,555	
CNEL:			160	344	742	1,598	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,342 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,697 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-7.93	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.35	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	70.4	67.4	65.7	73.0	73.3	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.4	
Heavy Trucks:	75.9	74.7	65.8	67.9	75.8	75.9	
Vehicle Noise:	78.9	77.5	71.2	71.6	79.3	79.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			207	447	963	2,074	
CNEL:			213	459	989	2,132	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,672 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,727 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.53% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.37%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.84	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-7.89	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.19	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	70.4	67.4	65.7	73.0	73.4	
Medium Trucks:	73.6	72.0	65.9	66.8	74.2	74.4	
Heavy Trucks:	76.1	74.9	65.9	68.0	76.0	76.1	
Vehicle Noise:	79.0	77.6	71.3	71.7	79.4	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			210	453	977	2,105	
CNEL:			216	466	1,004	2,163	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 42,489 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,905 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.41	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.32	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.74	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.8	72.0	69.0	67.3	74.6	74.9	
Medium Trucks:	75.1	73.6	67.5	68.4	75.8	76.0	
Heavy Trucks:	77.5	76.3	67.4	69.5	77.4	77.5	
Vehicle Noise:	80.5	79.1	72.8	73.2	80.9	81.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			265	572	1,232	2,655	
CNEL:			273	588	1,266	2,729	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o Stewart Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 42,819 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,935 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.57% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.32%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.43	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.29	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.63	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.8	72.0	69.0	67.3	74.6	74.9	
Medium Trucks:	75.2	73.6	67.5	68.4	75.8	76.0	
Heavy Trucks:	77.6	76.5	67.5	69.6	77.5	77.7	
Vehicle Noise:	80.6	79.2	72.9	73.3	80.9	81.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			268	578	1,245	2,682	
CNEL:			276	594	1,279	2,757	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,969 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,559 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.58	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-10.31	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.73	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.0	65.0	63.3	70.6	70.9	
Medium Trucks:	71.1	69.6	63.5	64.4	71.8	72.0	
Heavy Trucks:	73.5	72.4	63.4	65.5	73.4	73.6	
Vehicle Noise:	76.5	75.1	68.8	69.3	76.9	77.1	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			144	310	668	1,440	
CNEL:			148	319	687	1,480	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,233 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.45% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.44%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.52	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-10.25	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-12.48	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.0	65.1	63.3	70.7	71.0	
Medium Trucks:	71.2	69.7	63.6	64.5	71.9	72.0	
Heavy Trucks:	73.8	72.6	63.6	65.7	73.7	73.8	
Vehicle Noise:	76.7	75.3	68.9	69.4	77.0	77.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			147	317	683	1,472	
CNEL:			151	326	702	1,512	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,507 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,528 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.52	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-8.21	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.63	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.1	67.1	65.4	72.7	73.0	
Medium Trucks:	73.2	71.7	65.6	66.5	73.9	74.1	
Heavy Trucks:	75.6	74.5	65.5	67.6	75.5	75.7	
Vehicle Noise:	78.6	77.2	70.9	71.4	79.0	79.2	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			199	428	922	1,987	
CNEL:			204	440	948	2,042	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 27,771 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,552 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.52% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.36%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.55	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-8.17	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-10.48	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.1	67.2	65.4	72.8	73.1	
Medium Trucks:	73.3	71.8	65.7	66.5	74.0	74.1	
Heavy Trucks:	75.8	74.6	65.6	67.7	75.7	75.8	
Vehicle Noise:	78.7	77.3	71.0	71.4	79.1	79.3	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			201	434	935	2,014	
CNEL:			207	446	961	2,070	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 40,153 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,690 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.16	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.57	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.99	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.6	71.7	68.8	67.0	74.4	74.7	
Medium Trucks:	74.9	73.4	67.3	68.1	75.6	75.7	
Heavy Trucks:	77.3	76.1	67.1	69.2	77.2	77.3	
Vehicle Noise:	80.3	78.9	72.6	73.0	80.6	80.8	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			256	551	1,187	2,556	
CNEL:			263	566	1,220	2,628	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Live Oak Avenue Road Segment: w/o Baldwin Park Blvd.				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 40,417 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,714 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.18	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.54	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.88	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.6	71.8	68.8	67.1	74.4	74.7	
Medium Trucks:	74.9	73.4	67.3	68.2	75.6	75.8	
Heavy Trucks:	77.4	76.2	67.2	69.3	77.3	77.4	
Vehicle Noise:	80.3	78.9	72.6	73.1	80.7	80.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			258	556	1,198	2,580	
CNEL:			265	571	1,231	2,652	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 34,298 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,152 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.48	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.25	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.67	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	70.6	67.7	65.9	73.3	73.6	
Medium Trucks:	73.8	72.3	66.2	67.0	74.5	74.6	
Heavy Trucks:	76.2	75.0	66.0	68.1	76.1	76.2	
Vehicle Noise:	79.2	77.8	71.5	71.9	79.5	79.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			173	372	802	1,727	
CNEL:			178	383	824	1,776	

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 34,601 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,180 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.69% Medium Trucks: 77.7% 4.8% 17.5% 9.07% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.52	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.24	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.62	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	70.7	67.7	66.0	73.3	73.6	
Medium Trucks:	73.8	72.3	66.2	67.1	74.5	74.6	
Heavy Trucks:	76.2	75.0	66.1	68.2	76.1	76.3	
Vehicle Noise:	79.2	77.8	71.5	71.9	79.6	79.7	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			174	374	806	1,737	
CNEL:			179	385	829	1,785	

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 49,679 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,566 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				68.46	4.08	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:				79.45	-5.64	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:				84.25	-8.06	2.78	-1.20	-5.56	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				221	476	1,026	2,211			
CNEL:				227	490	1,055	2,273			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 49,982 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 4,593 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.68% Medium Trucks: 77.7% 4.8% 17.5% 9.09% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				68.46	4.11	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:				79.45	-5.63	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:				84.25	-8.03	2.78	-1.20	-5.56	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				222	478	1,030	2,220			
CNEL:				228	492	1,059	2,282			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2040 NP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 68,137 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 6,262 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				68.46	5.46	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:				79.45	-4.27	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:				84.25	-6.69	2.78	-1.20	-5.56	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				273	588	1,267	2,730			
CNEL:				281	605	1,302	2,806			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)										
Scenario: 2040 WP Road Name: Arrow Highway Road Segment: w/o Live Oak Avenue				Project Name: Irwindale Gateway SP Job Number: 15410						
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS						
Highway Data				Site Conditions (Hard = 10, Soft = 15)						
Average Daily Traffic (Adt): 68,440 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 6,290 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15						
Site Data				Vehicle Mix						
				VehicleType	Day	Evening	Night	Daily		
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.67% Medium Trucks: 77.7% 4.8% 17.5% 9.10% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%						
FHWA Noise Model Calculations				Noise Source Elevations (in feet)						
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)						
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141						
VehicleType				REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:				68.46	5.48	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:				79.45	-4.26	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:				84.25	-6.66	2.78	-1.20	-5.56	0.000	0.000
Centerline Distance to Noise Contour (in feet)										
				70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:				274	590	1,271	2,737			
CNEL:				281	606	1,306	2,814			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: elo Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 15,351 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,411 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn:				101 218 469 1,011			
CNEL:				104 224 482 1,039			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: elo Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 15,418 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,417 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.63% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.26%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn:				102 219 471 1,015			
CNEL:				104 225 484 1,044			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: elo Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 24,999 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,297 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn:				140 301 649 1,399			
CNEL:				144 310 668 1,438			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: elo Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 25,066 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,304 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.64% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.25%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
Centerline Distance to Noise Contour (in feet)				Centerline Distance to Noise Contour (in feet)			
				70 dBA 65 dBA 60 dBA 55 dBA			
Ldn:				140 302 651 1,403			
CNEL:				144 311 669 1,442			

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Arrow Highway Road Segment: elo Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 36,576 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,361 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.75	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-6.97	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.39	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	70.9	68.0	66.2	73.5	73.9	
Medium Trucks:	74.1	72.5	66.4	67.3	74.7	74.9	
Heavy Trucks:	76.4	75.3	66.3	68.4	76.4	76.5	
Vehicle Noise:	79.5	78.1	71.7	72.2	79.8	80.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			180	388	837	1,803	
CNEL:			185	399	860	1,853	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Arrow Highway Road Segment: elo Avenida Barbosa				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 36,643 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 3,368 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.64% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.24%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.76	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-6.97	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.37	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	70.9	68.0	66.2	73.6	73.9	
Medium Trucks:	74.1	72.5	66.5	67.3	74.7	74.9	
Heavy Trucks:	76.5	75.3	66.3	68.4	76.4	76.5	
Vehicle Noise:	79.5	78.1	71.8	72.2	79.8	80.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			181	389	838	1,806	
CNEL:			186	400	862	1,857	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: elo I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,358 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,044 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-12.05	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.47	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	65.8	62.9	61.1	68.5	68.8	
Medium Trucks:	69.0	67.5	61.4	62.2	69.7	69.8	
Heavy Trucks:	71.4	70.2	61.2	63.3	71.3	71.4	
Vehicle Noise:	74.4	73.0	66.7	67.1	74.7	74.9	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			83	178	384	827	
CNEL:			85	183	394	850	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: elo I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 11,471 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,054 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.52% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.37%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.29	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-12.01	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-14.31	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	65.9	62.9	61.2	68.5	68.8	
Medium Trucks:	69.0	67.5	61.4	62.3	69.7	69.9	
Heavy Trucks:	71.5	70.4	61.4	63.5	71.4	71.6	
Vehicle Noise:	74.5	73.1	66.7	67.2	74.8	75.0	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			84	181	389	839	
CNEL:			86	186	400	862	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: elo I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 20,881 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,919 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.32	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-9.41	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.83	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	68.5	65.5	63.8	71.1	71.4	
Medium Trucks:	71.6	70.1	64.0	64.9	72.3	72.5	
Heavy Trucks:	74.0	72.8	63.9	66.0	73.9	74.0	
Vehicle Noise:	77.0	75.6	69.3	69.7	77.4	77.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			124	267	576	1,241	
CNEL:			128	275	592	1,275	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: elo I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 20,994 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,929 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.58% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.30%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.34	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-9.38	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-11.74	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	68.5	65.5	63.8	71.1	71.4	
Medium Trucks:	71.6	70.1	64.0	64.9	72.3	72.5	
Heavy Trucks:	74.1	72.9	64.0	66.1	74.0	74.1	
Vehicle Noise:	77.1	75.7	69.3	69.8	77.4	77.6	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			125	269	580	1,251	
CNEL:			129	277	597	1,285	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP Road Name: Arrow Highway Road Segment: elo I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 32,309 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,969 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.22	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.51	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.93	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	70.4	67.4	65.7	73.0	73.3	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.4	
Heavy Trucks:	75.9	74.7	65.8	67.9	75.8	75.9	
Vehicle Noise:	78.9	77.5	71.2	71.6	79.3	79.4	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			166	358	770	1,660	
CNEL:			171	368	792	1,706	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP Road Name: Arrow Highway Road Segment: elo I-1605 NB On-Ramp				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 32,422 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,980 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.60% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.28%			
				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
				Lane Equivalent Distance (in feet)			
				Autos: 32.388 Medium Trucks: 32.114 Heavy Trucks: 32.141			
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.23	2.73	-1.20	-4.59	0.000	0.000
Medium Trucks:	79.45	-7.50	2.78	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-9.87	2.78	-1.20	-5.56	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	70.4	67.4	65.7	73.0	73.3	
Medium Trucks:	73.5	72.0	65.9	66.8	74.2	74.4	
Heavy Trucks:	76.0	74.8	65.8	67.9	75.9	76.0	
Vehicle Noise:	79.0	77.6	71.2	71.7	79.3	79.5	
Centerline Distance to Noise Contour (in feet)							
			70 dBA	65 dBA	60 dBA	55 dBA	
Ldn:			167	359	774	1,668	
CNEL:			171	369	796	1,715	

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: E Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 16,846 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,548 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				143	309	665	1,433
CNEL:				147	317	684	1,473

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: EP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 17,073 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 1,569 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.47% Medium Trucks: 77.7% 4.8% 17.5% 9.11% Heavy Trucks: 84.3% 2.7% 13.0% 5.41%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				146	315	678	1,460
CNEL:				150	323	697	1,501

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 NP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,441 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,706 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.65% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.23%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				208	448	965	2,079
CNEL:				214	460	992	2,137

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2028 WP Road Name: Arrow Highway Road Segment: e/o Maine Avenue				Project Name: Irwindale Gateway SP Job Number: 15410			
SITE SPECIFIC INPUT DATA				NOISE MODEL INPUTS			
Highway Data				Site Conditions (Hard = 10, Soft = 15)			
Average Daily Traffic (Adt): 29,668 vehicles Peak Hour Percentage: 9.19% Peak Hour Volume: 2,726 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 80 feet				Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15			
Site Data				Vehicle Mix			
				VehicleType	Day	Evening	Night
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees				Autos: 72.4% 9.2% 18.4% 85.55% Medium Trucks: 77.7% 4.8% 17.5% 9.12% Heavy Trucks: 84.3% 2.7% 13.0% 5.33%			
FHWA Noise Model Calculations				Noise Source Elevations (in feet)			
				Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0			
Unmitigated Noise Levels (without Topo and barrier attenuation)				Lane Equivalent Distance (in feet)			
				Autos: 30.414 Medium Trucks: 30.122 Heavy Trucks: 30.150			
Centerline Distance to Noise Contour (in feet)							
				70 dBA	65 dBA	60 dBA	55 dBA
Ldn:				210	453	975	2,102
CNEL:				216	465	1,003	2,160

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FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 NP				Project Name: Irwindale Gateway SP			
Road Name: Arrow Highway				Job Number: 15410			
Road Segment: e/o Maine Avenue							
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 44,554 vehicles			Autos: 15				
Peak Hour Percentage: 9.19%			Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,095 vehicles			Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph			Vehicle Mix				
Near/Far Lane Distance: 80 feet			VehicleType				
			Autos: 72.4% 9.2% 18.4% 85.65%				
			Medium Trucks: 77.7% 4.8% 17.5% 9.12%				
			Heavy Trucks: 84.3% 2.7% 13.0% 5.23%				
Site Data			Noise Source Elevations (in feet)				
Barrier Height: 0.0 feet			Autos: 0.000				
Barrier Type (0-Wall, 1-Berm): 0.0			Medium Trucks: 2.297				
Centerline Dist. to Barrier: 50.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0				
Centerline Dist. to Observer: 50.0 feet			Lane Equivalent Distance (in feet)				
Barrier Distance to Observer: 0.0 feet			Autos: 30.414				
Observer Height (Above Pad): 5.0 feet			Medium Trucks: 30.122				
Pad Elevation: 0.0 feet			Heavy Trucks: 30.150				
Road Elevation: 0.0 feet							
Road Grade: 0.0%							
Left View: -90.0 degrees							
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.61	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.11	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.53	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.0	72.2	69.2	67.5	74.8	75.1	
Medium Trucks:	75.3	73.8	67.7	68.6	76.0	76.2	
Heavy Trucks:	77.7	76.5	67.6	69.7	77.6	77.8	
Vehicle Noise:	80.7	79.3	73.0	73.4	81.1	81.3	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	274	590	1,272	2,740			
CNEL:	282	607	1,307	2,816			

Monday, June 26, 2023

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (9/12/2021)							
Scenario: 2040 WP				Project Name: Irwindale Gateway SP			
Road Name: Arrow Highway				Job Number: 15410			
Road Segment: e/o Maine Avenue							
SITE SPECIFIC INPUT DATA			NOISE MODEL INPUTS				
Highway Data			Site Conditions (Hard = 10, Soft = 15)				
Average Daily Traffic (Adt): 44,781 vehicles			Autos: 15				
Peak Hour Percentage: 9.19%			Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,115 vehicles			Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph			Vehicle Mix				
Near/Far Lane Distance: 80 feet			VehicleType				
			Autos: 72.4% 9.2% 18.4% 85.58%				
			Medium Trucks: 77.7% 4.8% 17.5% 9.12%				
			Heavy Trucks: 84.3% 2.7% 13.0% 5.30%				
Site Data			Noise Source Elevations (in feet)				
Barrier Height: 0.0 feet			Autos: 0.000				
Barrier Type (0-Wall, 1-Berm): 0.0			Medium Trucks: 2.297				
Centerline Dist. to Barrier: 50.0 feet			Heavy Trucks: 8.004 Grade Adjustment: 0.0				
Centerline Dist. to Observer: 50.0 feet			Lane Equivalent Distance (in feet)				
Barrier Distance to Observer: 0.0 feet			Autos: 30.414				
Observer Height (Above Pad): 5.0 feet			Medium Trucks: 30.122				
Pad Elevation: 0.0 feet			Heavy Trucks: 30.150				
Road Elevation: 0.0 feet							
Road Grade: 0.0%							
Left View: -90.0 degrees							
Right View: 90.0 degrees							
FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.63	3.14	-1.20	-4.65	0.000	0.000
Medium Trucks:	79.45	-6.09	3.20	-1.20	-4.87	0.000	0.000
Heavy Trucks:	84.25	-8.45	3.19	-1.20	-5.43	0.000	0.000
Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.0	72.2	69.2	67.5	74.8	75.1	
Medium Trucks:	75.4	73.8	67.7	68.6	76.0	76.2	
Heavy Trucks:	77.8	76.6	67.7	69.8	77.7	77.8	
Vehicle Noise:	80.8	79.4	73.0	73.5	81.1	81.3	
Centerline Distance to Noise Contour (in feet)							
	70 dBA	65 dBA	60 dBA	55 dBA			
Ldn:	276	595	1,281	2,760			
CNEL:	284	611	1,317	2,837			

Monday, June 26, 2023

APPENDIX 9.1:

OPTION 1 - OPERATIONAL NOISE MODEL CALCULATIONS

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15410 - Irwindale Gateway SP

CadnaA Noise Prediction Model: 15410-02_opt1.cna

Date: 27.06.23

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 Rcvr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	
	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature #(Unit,TEMP)	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. #(Unit,SPEED)	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height (ft)	Coordinates			
			Day (dBA)	Night (dBA)	CNEL (dBA)	Day (dBA)	Night (dBA)	CNEL (dBA)	Type	Auto	Noise Type		X (ft)	Y (ft)	Z (ft)	
RECEIVERS		R1	37.5	37.4	44.1	50.0	45.0	0.0				5.00	a	6034263.20	2354758.95	5.00
RECEIVERS		R2	47.9	47.9	54.5	50.0	45.0	0.0				5.00	a	6039427.88	2353832.05	5.00
RECEIVERS		R3	42.9	42.8	49.5	50.0	45.0	0.0				5.00	a	6041246.41	2350129.14	5.00
RECEIVERS		R4	40.2	40.1	46.7	50.0	45.0	0.0				5.00	a	6039950.36	2349281.36	5.00
RECEIVERS		R5	36.1	36.0	42.7	50.0	45.0	0.0				5.00	a	6038883.31	2348423.93	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li		Operating Time			Height (ft)	Coordinates				
			Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value dB(A)	norm.	Day (min)	Special (min)		Night (min)	X (ft)	Y (ft)	Z (ft)	
POINTSOURCE		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038932.62	2351499.24	50.00
POINTSOURCE		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038900.50	2351535.70	50.00
POINTSOURCE		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038311.96	2351632.05	50.00
POINTSOURCE		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039176.68	2351616.81	50.00
POINTSOURCE		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039138.23	2351657.74	50.00
POINTSOURCE		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039532.71	2351960.43	50.00
POINTSOURCE		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039581.09	2352006.32	50.00
POINTSOURCE		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038964.56	2352799.01	50.00
POINTSOURCE		AC09	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038928.58	2352832.50	50.00
POINTSOURCE		AC10	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039251.88	2353239.01	50.00
POINTSOURCE		AC11	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039066.23	2353414.04	50.00
POINTSOURCE		CAR001	81.1	81.1	81.1	Lw	81.1					5.00	a	6039616.03	2352034.83	5.00
POINTSOURCE		CAR002	81.1	81.1	81.1	Lw	81.1					5.00	a	6039601.42	2352069.53	5.00
POINTSOURCE		CAR003	81.1	81.1	81.1	Lw	81.1					5.00	a	6038365.86	2351924.41	5.00
POINTSOURCE		CAR004	81.1	81.1	81.1	Lw	81.1					5.00	a	6039588.64	2352109.10	5.00

Name	M.	ID	Result. PWL			Lw / Li		Operating Time				Height (ft)	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		CAR005	81.1	81.1	81.1	Lw	81.1					5.00	a	6038347.11	2351904.27	5.00
POINTSOURCE		CAR006	81.1	81.1	81.1	Lw	81.1					5.00	a	6039606.29	2352157.81	5.00
POINTSOURCE		CAR007	81.1	81.1	81.1	Lw	81.1					5.00	a	6038342.25	2351841.08	5.00
POINTSOURCE		CAR008	81.1	81.1	81.1	Lw	81.1					5.00	a	6039632.47	2352183.37	5.00
POINTSOURCE		CAR009	81.1	81.1	81.1	Lw	81.1					5.00	a	6038371.42	2351868.86	5.00
POINTSOURCE		CAR010	81.1	81.1	81.1	Lw	81.1					5.00	a	6039653.78	2352204.07	5.00
POINTSOURCE		CAR011	81.1	81.1	81.1	Lw	81.1					5.00	a	6038396.42	2351889.69	5.00
POINTSOURCE		CAR012	81.1	81.1	81.1	Lw	81.1					5.00	a	6039685.43	2352233.29	5.00
POINTSOURCE		CAR013	81.1	81.1	81.1	Lw	81.1					5.00	a	6038420.03	2351912.61	5.00
POINTSOURCE		CAR014	81.1	81.1	81.1	Lw	81.1					5.00	a	6039710.39	2352259.47	5.00
POINTSOURCE		CAR015	81.1	81.1	81.1	Lw	81.1					5.00	a	6038429.75	2351946.63	5.00
POINTSOURCE		CAR016	81.1	81.1	81.1	Lw	81.1					5.00	a	6038890.50	2352861.33	5.00
POINTSOURCE		CAR017	81.1	81.1	81.1	Lw	81.1					5.00	a	6038407.53	2351971.63	5.00
POINTSOURCE		CAR018	81.1	81.1	81.1	Lw	81.1					5.00	a	6038866.40	2352837.23	5.00
POINTSOURCE		CAR019	81.1	81.1	81.1	Lw	81.1					5.00	a	6038383.92	2351995.25	5.00
POINTSOURCE		CAR020	81.1	81.1	81.1	Lw	81.1					5.00	a	6038834.52	2352803.93	5.00
POINTSOURCE		CAR021	81.1	81.1	81.1	Lw	81.1					5.00	a	6038230.46	2351502.16	5.00
POINTSOURCE		CAR022	81.1	81.1	81.1	Lw	81.1					5.00	a	6038808.30	2352779.13	5.00
POINTSOURCE		CAR023	81.1	81.1	81.1	Lw	81.1					5.00	a	6038260.29	2351471.72	5.00
POINTSOURCE		CAR024	81.1	81.1	81.1	Lw	81.1					5.00	a	6038780.66	2352752.91	5.00
POINTSOURCE		CAR025	81.1	81.1	81.1	Lw	81.1					5.00	a	6038287.69	2351441.28	5.00
POINTSOURCE		CAR026	81.1	81.1	81.1	Lw	81.1					5.00	a	6038757.99	2352730.23	5.00
POINTSOURCE		CAR027	81.1	81.1	81.1	Lw	81.1					5.00	a	6038310.82	2351415.71	5.00
POINTSOURCE		CAR028	81.1	81.1	81.1	Lw	81.1					5.00	a	6038731.06	2352704.02	5.00
POINTSOURCE		CAR029	81.1	81.1	81.1	Lw	81.1					5.00	a	6038337.61	2351384.05	5.00
POINTSOURCE		CAR030	81.1	81.1	81.1	Lw	81.1					5.00	a	6038694.21	2352669.29	5.00
POINTSOURCE		CAR031	81.1	81.1	81.1	Lw	81.1					5.00	a	6038402.14	2351412.06	5.00
POINTSOURCE		CAR032	81.1	81.1	81.1	Lw	81.1					5.00	a	6038668.70	2352644.49	5.00
POINTSOURCE		CAR033	81.1	81.1	81.1	Lw	81.1					5.00	a	6038365.61	2351418.15	5.00
POINTSOURCE		CAR034	81.1	81.1	81.1	Lw	81.1					5.00	a	6038626.90	2352600.56	5.00
POINTSOURCE		CAR035	81.1	81.1	81.1	Lw	81.1					5.00	a	6038367.44	2351451.02	5.00
POINTSOURCE		CAR036	81.1	81.1	81.1	Lw	81.1					5.00	a	6038593.59	2352571.51	5.00
POINTSOURCE		CAR037	81.1	81.1	81.1	Lw	81.1					5.00	a	6038327.87	2351460.15	5.00
POINTSOURCE		CAR038	81.1	81.1	81.1	Lw	81.1					5.00	a	6038560.29	2352538.91	5.00
POINTSOURCE		CAR039	81.1	81.1	81.1	Lw	81.1					5.00	a	6038326.04	2351491.81	5.00
POINTSOURCE		CAR040	81.1	81.1	81.1	Lw	81.1					5.00	a	6038590.05	2352628.19	5.00
POINTSOURCE		CAR041	81.1	81.1	81.1	Lw	81.1					5.00	a	6038291.34	2351496.68	5.00
POINTSOURCE		CAR042	81.1	81.1	81.1	Lw	81.1					5.00	a	6038592.88	2352664.33	5.00
POINTSOURCE		CAR043	81.1	81.1	81.1	Lw	81.1					5.00	a	6038284.04	2351536.25	5.00
POINTSOURCE		CAR044	81.1	81.1	81.1	Lw	81.1					5.00	a	6038625.48	2352665.04	5.00
POINTSOURCE		CAR045	81.1	81.1	81.1	Lw	81.1					5.00	a	6038249.34	2351534.42	5.00
POINTSOURCE		CAR046	81.1	81.1	81.1	Lw	81.1					5.00	a	6038632.56	2352702.60	5.00
POINTSOURCE		CAR047	81.1	81.1	81.1	Lw	81.1					5.00	a	6038252.38	2351569.12	5.00
POINTSOURCE		CAR048	81.1	81.1	81.1	Lw	81.1					5.00	a	6038669.41	2352704.02	5.00
POINTSOURCE		CAR049	81.1	81.1	81.1	Lw	81.1					5.00	a	6038274.30	2351606.87	5.00
POINTSOURCE		CAR050	81.1	81.1	81.1	Lw	81.1					5.00	a	6038686.42	2352750.07	5.00
POINTSOURCE		CAR051	81.1	81.1	81.1	Lw	81.1					5.00	a	6038300.47	2351577.64	5.00
POINTSOURCE		CAR052	81.1	81.1	81.1	Lw	81.1					5.00	a	6038720.43	2352754.33	5.00
POINTSOURCE		CAR053	81.1	81.1	81.1	Lw	81.1					5.00	a	6038333.35	2351544.16	5.00
POINTSOURCE		CAR054	81.1	81.1	81.1	Lw	81.1					5.00	a	6038729.64	2352793.30	5.00
POINTSOURCE		CAR055	81.1	81.1	81.1	Lw	81.1					5.00	a	6038361.96	2351515.55	5.00
POINTSOURCE		CAR056	81.1	81.1	81.1	Lw	81.1					5.00	a	6038773.58	2352804.64	5.00
POINTSOURCE		CAR057	81.1	81.1	81.1	Lw	81.1					5.00	a	6038394.22	2351482.68	5.00
POINTSOURCE		CAR058	81.1	81.1	81.1	Lw	81.1					5.00	a	6038780.66	2352839.36	5.00
POINTSOURCE		CAR059	81.1	81.1	81.1	Lw	81.1					5.00	a	6038425.27	2351452.85	5.00
POINTSOURCE		CAR060	81.1	81.1	81.1	Lw	81.1					5.00	a	6038814.68	2352845.03	5.00
POINTSOURCE		CAR061	81.1	81.1	81.1	Lw	81.1					5.00	a	6038458.15	2351418.75	5.00
POINTSOURCE		CAR062	81.1	81.1	81.1	Lw	81.1					5.00	a	6038822.47	2352885.42	5.00
POINTSOURCE		CAR063	81.1	81.1	81.1	Lw	81.1					5.00	a	6038483.71	2351391.97	5.00
POINTSOURCE		CAR064	81.1	81.1	81.1	Lw	81.1					5.00	a	6038862.15	2352888.96	5.00
POINTSOURCE		CAR065	81.1	81.1	81.1	Lw	81.1					5.00	a	6038509.28	2351367.01	5.00
POINTSOURCE		CAR066	81.1	81.1	81.1	Lw	81.1					5.00	a	6038864.99	2352932.19	5.00
POINTSOURCE		CAR067	81.1	81.1	81.1	Lw	81.1					5.00	a	6038380.22	2351349.96	5.00
POINTSOURCE		CAR068	81.1	81.1	81.1	Lw	81.1					5.00	a	6038633.98	2352796.13	5.00
POINTSOURCE		CAR069	81.1	81.1	81.1	Lw	81.1					5.00	a	6038421.01	2351331.70	5.00
POINTSOURCE		CAR070	81.1	81.1	81.1	Lw	81.1					5.00	a	6038667.29	2352790.46	5.00
POINTSOURCE		CAR071	81.1	81.1	81.1	Lw	81.1					5.00	a	6038466.06	2351309.78	5.00
POINTSOURCE		CAR072	81.1	81.1	81.1	Lw	81.1					5.00	a	6038672.95	2352828.73	5.00
POINTSOURCE		CAR073	81.1	81.1	81.1	Lw	81.1					5.00	a	6038510.50	2351290.91	5.00
POINTSOURCE		CAR074	81.1	81.1	81.1	Lw	81.1					5.00	a	6038719.01	2352841.48	5.00
POINTSOURCE		CAR075	81.1	81.1	81.1	Lw	81.1					5.00	a	6038554.94	2351271.43	5.00
POINTSOURCE		CAR076	81.1	81.1	81.1	Lw	81.1					5.00	a	6038725.39	2352876.21	5.00
POINTSOURCE		CAR077	81.1	81.1	81.1	Lw	81.1					5.00	a	6038602.43	2351253.17	5.00
POINTSOURCE		CAR078	81.1	81.1	81.1	Lw	81.1					5.00	a	6038765.07	2352888.25	5.00
POINTSOURCE		CAR079	81.1	81.1	81.1	Lw	81.1					5.00	a	6038817.93	2351248.91	5.00
POINTSOURCE		CAR080	81.1	81.1	81.1	Lw	81.1					5.00	a	6038777.12	2352931.48	5.00
POINTSOURCE		CAR081	81.1	81.1	81.1	Lw	81.1					5.00	a	6038862.98	2351254.39	5.00

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		CAR082	81.1	81.1	81.1	Lw	81.1					5.00	a	6038816.80	2352935.02	5.00
POINTSOURCE		CAR083	81.1	81.1	81.1	Lw	81.1					5.00	a	6038907.42	2351275.08	5.00
POINTSOURCE		CAR084	81.1	81.1	81.1	Lw	81.1					5.00	a	6038820.34	2352976.83	5.00
POINTSOURCE		CAR085	81.1	81.1	81.1	Lw	81.1					5.00	a	6038777.14	2351294.56	5.00
POINTSOURCE		CAR086	81.1	81.1	81.1	Lw	81.1					5.00	a	6038668.70	2352888.96	5.00
POINTSOURCE		CAR087	81.1	81.1	81.1	Lw	81.1					5.00	a	6038811.23	2351327.44	5.00
POINTSOURCE		CAR088	81.1	81.1	81.1	Lw	81.1					5.00	a	6038698.46	2352913.05	5.00
POINTSOURCE		CAR089	81.1	81.1	81.1	Lw	81.1					5.00	a	6038837.41	2351351.79	5.00
POINTSOURCE		CAR090	81.1	81.1	81.1	Lw	81.1					5.00	a	6038708.39	2352955.57	5.00
POINTSOURCE		CAR091	81.1	81.1	81.1	Lw	81.1					5.00	a	6038862.37	2351376.75	5.00
POINTSOURCE		CAR092	81.1	81.1	81.1	Lw	81.1					5.00	a	6038750.90	2352963.36	5.00
POINTSOURCE		CAR093	81.1	81.1	81.1	Lw	81.1					5.00	a	6038897.07	2351411.45	5.00
POINTSOURCE		CAR094	81.1	81.1	81.1	Lw	81.1					5.00	a	6038754.44	2352999.50	5.00
POINTSOURCE		CAR095	81.1	81.1	81.1	Lw	81.1					5.00	a	6038925.08	2351438.23	5.00
POINTSOURCE		CAR096	81.1	81.1	81.1	Lw	81.1					5.00	a	6038792.00	2353005.17	5.00
POINTSOURCE		CAR097	81.1	81.1	81.1	Lw	81.1					5.00	a	6038964.65	2351476.59	5.00
POINTSOURCE		CAR098	81.1	81.1	81.1	Lw	81.1					5.00	a	6038938.68	2352962.66	5.00
POINTSOURCE		CAR099	81.1	81.1	81.1	Lw	81.1					5.00	a	6038955.51	2351320.74	5.00
POINTSOURCE		CAR100	81.1	81.1	81.1	Lw	81.1					5.00	a	6038906.79	2352991.71	5.00
POINTSOURCE		CAR101	81.1	81.1	81.1	Lw	81.1					5.00	a	6038987.17	2351352.40	5.00
POINTSOURCE		CAR102	81.1	81.1	81.1	Lw	81.1					5.00	a	6038870.66	2353027.85	5.00
POINTSOURCE		CAR103	81.1	81.1	81.1	Lw	81.1					5.00	a	6039017.00	2351380.40	5.00
POINTSOURCE		CAR104	81.1	81.1	81.1	Lw	81.1					5.00	a	6038839.48	2353056.19	5.00
POINTSOURCE		CAR105	81.1	81.1	81.1	Lw	81.1					5.00	a	6039042.57	2351403.53	5.00
POINTSOURCE		CAR106	81.1	81.1	81.1	Lw	81.1					5.00	a	6038814.68	2353178.07	5.00
POINTSOURCE		CAR107	81.1	81.1	81.1	Lw	81.1					5.00	a	6039067.53	2351429.10	5.00
POINTSOURCE		CAR108	81.1	81.1	81.1	Lw	81.1					5.00	a	6038787.04	2353149.73	5.00
POINTSOURCE		CAR109	81.1	81.1	81.1	Lw	81.1					5.00	a	6038847.76	2351306.13	5.00
POINTSOURCE		CAR110	81.1	81.1	81.1	Lw	81.1					5.00	a	6038782.79	2353206.42	5.00
POINTSOURCE		CAR111	81.1	81.1	81.1	Lw	81.1					5.00	a	6038885.51	2351307.96	5.00
POINTSOURCE		CAR112	81.1	81.1	81.1	Lw	81.1					5.00	a	6038796.25	2353250.35	5.00
POINTSOURCE		CAR113	81.1	81.1	81.1	Lw	81.1					5.00	a	6038885.51	2351340.22	5.00
POINTSOURCE		CAR114	81.1	81.1	81.1	Lw	81.1					5.00	a	6038847.98	2353239.72	5.00
POINTSOURCE		CAR115	81.1	81.1	81.1	Lw	81.1					5.00	a	6038930.55	2351351.18	5.00
POINTSOURCE		CAR116	81.1	81.1	81.1	Lw	81.1					5.00	a	6038833.81	2353288.61	5.00
POINTSOURCE		CAR117	81.1	81.1	81.1	Lw	81.1					5.00	a	6038930.55	2351387.10	5.00
POINTSOURCE		CAR118	81.1	81.1	81.1	Lw	81.1					5.00	a	6038884.12	2353275.86	5.00
POINTSOURCE		CAR119	81.1	81.1	81.1	Lw	81.1					5.00	a	6038967.08	2351388.32	5.00
POINTSOURCE		CAR120	81.1	81.1	81.1	Lw	81.1					5.00	a	6039220.71	2353335.38	5.00
POINTSOURCE		CAR121	81.1	81.1	81.1	Lw	81.1					5.00	a	6038979.26	2351432.15	5.00
POINTSOURCE		CAR122	81.1	81.1	81.1	Lw	81.1					5.00	a	6039232.75	2353385.69	5.00
POINTSOURCE		CAR123	81.1	81.1	81.1	Lw	81.1					5.00	a	6039014.57	2351431.54	5.00
POINTSOURCE		CAR124	81.1	81.1	81.1	Lw	81.1					5.00	a	6039185.28	2353366.56	5.00
POINTSOURCE		CAR125	81.1	81.1	81.1	Lw	81.1					5.00	a	6039017.61	2351467.46	5.00
POINTSOURCE		CAR126	81.1	81.1	81.1	Lw	81.1					5.00	a	6039193.07	2353421.83	5.00
POINTSOURCE		CAR127	81.1	81.1	81.1	Lw	81.1					5.00	a	6039223.98	2351543.55	5.00
POINTSOURCE		CAR128	81.1	81.1	81.1	Lw	81.1					5.00	a	6039151.97	2353400.57	5.00
POINTSOURCE		CAR129	81.1	81.1	81.1	Lw	81.1					5.00	a	6039210.59	2351592.86	5.00
POINTSOURCE		CAR130	81.1	81.1	81.1	Lw	81.1					5.00	a	6039165.44	2353447.34	5.00
POINTSOURCE		CAR131	81.1	81.1	81.1	Lw	81.1					5.00	a	6039255.03	2351570.34	5.00
POINTSOURCE		CAR132	81.1	81.1	81.1	Lw	81.1					5.00	a	6039118.67	2353434.59	5.00
POINTSOURCE		CAR133	81.1	81.1	81.1	Lw	81.1					5.00	a	6039241.64	2351621.48	5.00
POINTSOURCE		CAR134	81.1	81.1	81.1	Lw	81.1					5.00	a	6039092.45	2353489.15	5.00
POINTSOURCE		CAR135	81.1	81.1	81.1	Lw	81.1					5.00	a	6039294.60	2351612.34	5.00
POINTSOURCE		CAR136	81.1	81.1	81.1	Lw	81.1					5.00	a	6039286.08	2351664.70	5.00
POINTSOURCE		CAR137	81.1	81.1	81.1	Lw	81.1					5.00	a	6039332.95	2351649.48	5.00
POINTSOURCE		CAR138	81.1	81.1	81.1	Lw	81.1					5.00	a	6039334.78	2351711.57	5.00
POINTSOURCE		CAR139	81.1	81.1	81.1	Lw	81.1					5.00	a	6039390.18	2351702.44	5.00
POINTSOURCE		CAR140	81.1	81.1	81.1	Lw	81.1					5.00	a	6039373.13	2351751.14	5.00
POINTSOURCE		CAR141	81.1	81.1	81.1	Lw	81.1					5.00	a	6039433.40	2351745.67	5.00
POINTSOURCE		CAR142	81.1	81.1	81.1	Lw	81.1					5.00	a	6039423.05	2351800.46	5.00
POINTSOURCE		CAR143	81.1	81.1	81.1	Lw	81.1					5.00	a	6039472.36	2351784.02	5.00
POINTSOURCE		CAR144	81.1	81.1	81.1	Lw	81.1					5.00	a	6039489.41	2351864.38	5.00
POINTSOURCE		CAR145	81.1	81.1	81.1	Lw	81.1					5.00	a	6039538.72	2351849.16	5.00
POINTSOURCE		CAR146	81.1	81.1	81.1	Lw	81.1					5.00	a	6039521.67	2351896.64	5.00
POINTSOURCE		CAR147	81.1	81.1	81.1	Lw	81.1					5.00	a	6039578.29	2351885.68	5.00
POINTSOURCE		CAR148	81.1	81.1	81.1	Lw	81.1					5.00	a	6039560.64	2351934.39	5.00
POINTSOURCE		CAR149	81.1	81.1	81.1	Lw	81.1					5.00	a	6039606.29	2351910.64	5.00
POINTSOURCE		CAR150	81.1	81.1	81.1	Lw	81.1					5.00	a	6039592.29	2351963.61	5.00
POINTSOURCE		CAR151	81.1	81.1	81.1	Lw	81.1					5.00	a	6039647.69	2351953.26	5.00
POINTSOURCE		CAR152	81.1	81.1	81.1	Lw	81.1					5.00	a	6039673.26	2351981.26	5.00
POINTSOURCE		CAR153	81.1	81.1	81.1	Lw	81.1					5.00	a	6039701.26	2352009.87	5.00
POINTSOURCE		CAR154	81.1	81.1	81.1	Lw	81.1					5.00	a	6039725.61	2352033.01	5.00
POINTSOURCE		CAR155	81.1	81.1	81.1	Lw	81.1					5.00	a	6039671.43	2352042.14	5.00
POINTSOURCE		CAR156	81.1	81.1	81.1	Lw	81.1					5.00	a	6039678.13	2352073.79	5.00
POINTSOURCE		CAR157	81.1	81.1	81.1	Lw	81.1					5.00	a	6039698.22	2352096.93	5.00
POINTSOURCE		CAR158	81.1	81.1	81.1	Lw	81.1					5.00	a	6039750.57	2352068.92	5.00

Name	M.	ID	Result. PWL			Lw / Li		Operating Time			Height		Coordinates			
			Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value dB(A)	norm.	Day (min)	Special (min)	Night (min)	(ft)		X (ft)	Y (ft)	Z (ft)
POINTSOURCE		CAR159	81.1	81.1	81.1	Lw	81.1					5.00	a	6039759.70	2352098.75	5.00
POINTSOURCE		CAR160	81.1	81.1	81.1	Lw	81.1					5.00	a	6039770.05	2352132.85	5.00
POINTSOURCE		CAR161	81.1	81.1	81.1	Lw	81.1					5.00	a	6039779.19	2352160.85	5.00
POINTSOURCE		CAR162	81.1	81.1	81.1	Lw	81.1					5.00	a	6039742.05	2352197.38	5.00
POINTSOURCE		CAR163	81.1	81.1	81.1	Lw	81.1					5.00	a	6039712.22	2352204.68	5.00
POINTSOURCE		CAR164	81.1	81.1	81.1	Lw	81.1					5.00	a	6039716.48	2352173.63	5.00
POINTSOURCE		CAR165	81.1	81.1	81.1	Lw	81.1					5.00	a	6039677.52	2352169.98	5.00
POINTSOURCE		CAR166	81.1	81.1	81.1	Lw	81.1					5.00	a	6039675.69	2352134.67	5.00
POINTSOURCE		CAR167	81.1	81.1	81.1	Lw	81.1					5.00	a	6039642.21	2352136.50	5.00
POINTSOURCE		TRASAHO1	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6038455.38	2352189.51	5.00
POINTSOURCE		TRASAHO2	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6039047.83	2351640.40	5.00
POINTSOURCE		TRASAHO3	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6038950.81	2351658.98	5.00
POINTSOURCE		TRASAHO4	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6038824.89	2353128.77	5.00
POINTSOURCE		TRASAHO5	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6039646.48	2352317.50	5.00
POINTSOURCE		TRASAHO6	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6039113.89	2352868.67	5.00

Line Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li		Operating Time			Moving Pt. Src			Height			
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value dB(A)	norm.	Day (min)	Special (min)	Night (min)	Day	Evening	Night	Speed (mph)	(ft)	
LINESOURCE		TRUCK01	93.2	93.2	93.2	76.9	76.9	76.9	Lw	93.2									8	a
LINESOURCE		TRUCK02	93.2	93.2	93.2	71.3	71.3	71.3	Lw	93.2									8	a
LINESOURCE		TRUCK03	93.2	93.2	93.2	80.6	80.6	80.6	Lw	93.2									8	a
LINESOURCE		TRUCK04	93.2	93.2	93.2	65.1	65.1	65.1	Lw	93.2									8	a
LINESOURCE		TRUCK05	93.2	93.2	93.2	73.2	73.2	73.2	Lw	93.2									8	a
LINESOURCE		TRUCK06	93.2	93.2	93.2	75.8	75.8	75.8	Lw	93.2									8	a

Name	ID	Height		Coordinates				
		Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)	
LINESOURCE	TRUCK01	8.00	a		6039731.34	2352343.83	8.00	0.00
					6039830.42	2352243.52	8.00	0.00
LINESOURCE	TRUCK02	8.00	a		6039344.30	2353251.20	8.00	0.00
					6038989.95	2352880.83	8.00	0.00
LINESOURCE	TRUCK03	8.00	a		6039049.11	2353028.27	8.00	0.00
					6039091.77	2352987.24	8.00	0.00
LINESOURCE	TRUCK04	8.00	a		6039036.07	2352833.84	8.00	0.00
					6038989.95	2352880.83	8.00	0.00
					6038831.10	2353031.87	8.00	0.00
					6038822.49	2353037.56	8.00	0.00
					6038813.10	2353041.83	8.00	0.00
					6038803.15	2353044.57	8.00	0.00
					6038792.89	2353045.73	8.00	0.00
					6038782.59	2353045.27	8.00	0.00
					6038772.48	2353043.20	8.00	0.00
					6038762.82	2353039.57	8.00	0.00
					6038753.84	2353034.47	8.00	0.00
					6038634.05	2352923.36	8.00	0.00
					6038625.37	2352893.85	8.00	0.00
					6038129.00	2351413.47	8.00	0.00
LINESOURCE	TRUCK05	8.00	a		6038938.96	2351608.43	8.00	0.00
					6039037.13	2351512.38	8.00	0.00
					6039154.66	2351476.61	8.00	0.00
					6039199.85	2351429.80	8.00	0.00
LINESOURCE	TRUCK06	8.00	a		6039082.45	2351636.43	8.00	0.00
					6039124.73	2351587.58	8.00	0.00
					6039142.25	2351540.12	8.00	0.00
					6039154.66	2351476.61	8.00	0.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL'			Lw / Li		Operating Time			Height		
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value dB(A)	norm.	Day (min)	Special (min)	Night (min)	(ft)	
AREASOURCE		DOCK01	111.5	111.5	111.5	75.1	75.1	75.1	Lw	111.5					8	a
AREASOURCE		DOCK02	111.5	111.5	111.5	66.9	66.9	66.9	Lw	111.5					8	a
AREASOURCE		DOCK03	111.5	111.5	111.5	67.7	67.7	67.7	Lw	111.5					8	a

Name	ID	Height		Coordinates				
		Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)	
AREASOURCE	DOCK01	8.00	a		6038921.96	2353259.30	8.00	0.00
					6039103.78	2353085.54	8.00	0.00
					6038976.21	2352951.90	8.00	0.00
					6038786.48	2353134.16	8.00	0.00
AREASOURCE	DOCK02	8.00	a		6038959.44	2352763.72	8.00	0.00

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6039002.41	2352801.48	8.00	0.00
				6039225.70	2353016.14	8.00	0.00
				6039811.04	2352422.71	8.00	0.00
				6039544.67	2352159.11	8.00	0.00
AREASOURCE	DOCK03	8.00	a	6038489.39	2352370.49	8.00	0.00
				6039146.94	2351698.61	8.00	0.00
				6039049.00	2351604.18	8.00	0.00
				6038992.55	2351660.63	8.00	0.00
				6038861.79	2351533.25	8.00	0.00
				6038528.45	2351866.58	8.00	0.00
				6038575.33	2351908.25	8.00	0.00
				6038506.32	2351977.26	8.00	0.00
				6038467.10	2351939.26	8.00	0.00
				6038371.65	2352036.37	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			BUILDING00001	x	0		45.00	a	6038903.12	2353277.32	45.00	0.00
									6039071.30	2353452.01	45.00	0.00
									6039288.32	2353243.68	45.00	0.00
									6039123.38	2353066.81	45.00	0.00
BUILDING			BUILDING00002	x	0		45.00	a	6038527.15	2352482.47	45.00	0.00
									6038933.40	2352875.69	45.00	0.00
									6039002.41	2352801.48	45.00	0.00
									6038959.44	2352763.72	45.00	0.00
									6039549.29	2352154.34	45.00	0.00
									6039609.18	2352003.30	45.00	0.00
									6039174.29	2351582.73	45.00	0.00
									6039102.67	2351655.64	45.00	0.00
									6039146.94	2351698.61	45.00	0.00
									6038489.39	2352370.49	45.00	0.00
BUILDING			BUILDING00003	x	0		45.00	a	6038338.35	2351814.50	45.00	0.00
									6038506.32	2351977.26	45.00	0.00
									6038575.33	2351908.25	45.00	0.00
									6038528.45	2351866.58	45.00	0.00
									6038861.79	2351533.25	45.00	0.00
									6038902.15	2351574.91	45.00	0.00
									6038968.56	2351503.30	45.00	0.00
									6038702.93	2351253.30	45.00	0.00
									6038597.46	2351296.27	45.00	0.00
									6038279.76	2351632.21	45.00	0.00

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APPENDIX 9.2:

OPTION 2 - OPERATIONAL NOISE MODEL CALCULATIONS

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15410 - Irwindale Gateway SP

CadnaA Noise Prediction Model: 15410-02_opt2.cna

Date: 27.06.23

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 Rcvr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	
	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature #(Unit,TEMP)	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. #(Unit,SPEED)	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height (ft)	Coordinates			
			Day (dBA)	Night (dBA)	CNEL (dBA)	Day (dBA)	Night (dBA)	CNEL (dBA)	Type	Auto	Noise Type		X (ft)	Y (ft)	Z (ft)	
RECEIVERS		R1	37.7	37.7	44.3	50.0	45.0	0.0				5.00	a	6034263.20	2354758.95	5.00
RECEIVERS		R2	47.9	47.8	54.5	50.0	45.0	0.0				5.00	a	6039427.88	2353832.05	5.00
RECEIVERS		R3	42.4	42.3	49.0	50.0	45.0	0.0				5.00	a	6041246.41	2350129.14	5.00
RECEIVERS		R4	41.5	41.4	48.1	50.0	45.0	0.0				5.00	a	6039950.36	2349281.36	5.00
RECEIVERS		R5	39.0	39.0	45.6	50.0	45.0	0.0				5.00	a	6038883.31	2348423.93	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li		Operating Time			Height (ft)	Coordinates				
			Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value dB(A)	norm.	Day (min)	Special (min)		Night (min)	X (ft)	Y (ft)	Z (ft)	
POINTSOURCE2		AC01	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039224.18	2351662.29	50.00
POINTSOURCE2		AC02	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039188.37	2351697.02	50.00
POINTSOURCE2		AC03	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039546.60	2352048.97	50.00
POINTSOURCE2		AC04	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039581.09	2352006.32	50.00
POINTSOURCE2		AC05	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038964.56	2352799.01	50.00
POINTSOURCE2		AC06	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6038928.58	2352832.50	50.00
POINTSOURCE2		AC07	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039251.88	2353239.01	50.00
POINTSOURCE2		AC08	88.9	88.9	88.9	Lw	88.9		585.00	0.00	252.00	5.00	g	6039066.23	2353414.04	50.00
POINTSOURCE2		CAR001	81.1	81.1	81.1	Lw	81.1					5.00	a	6039255.03	2351570.34	5.00
POINTSOURCE2		CAR002	81.1	81.1	81.1	Lw	81.1					5.00	a	6039241.64	2351621.48	5.00
POINTSOURCE2		CAR003	81.1	81.1	81.1	Lw	81.1					5.00	a	6039294.60	2351612.34	5.00
POINTSOURCE2		CAR004	81.1	81.1	81.1	Lw	81.1					5.00	a	6039286.08	2351664.70	5.00
POINTSOURCE2		CAR005	81.1	81.1	81.1	Lw	81.1					5.00	a	6039332.95	2351649.48	5.00
POINTSOURCE2		CAR006	81.1	81.1	81.1	Lw	81.1					5.00	a	6039334.78	2351711.57	5.00
POINTSOURCE2		CAR007	81.1	81.1	81.1	Lw	81.1					5.00	a	6039390.18	2351702.44	5.00

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)	
POINTSOURCE2		CAR008	81.1	81.1	81.1	Lw	81.1					5.00	a	6039373.13	2351751.14	5.00
POINTSOURCE2		CAR009	81.1	81.1	81.1	Lw	81.1					5.00	a	6039433.40	2351745.67	5.00
POINTSOURCE2		CAR010	81.1	81.1	81.1	Lw	81.1					5.00	a	6039423.05	2351800.46	5.00
POINTSOURCE2		CAR011	81.1	81.1	81.1	Lw	81.1					5.00	a	6039472.36	2351784.02	5.00
POINTSOURCE2		CAR012	81.1	81.1	81.1	Lw	81.1					5.00	a	6039489.41	2351864.38	5.00
POINTSOURCE2		CAR013	81.1	81.1	81.1	Lw	81.1					5.00	a	6039538.72	2351849.16	5.00
POINTSOURCE2		CAR014	81.1	81.1	81.1	Lw	81.1					5.00	a	6039521.67	2351896.64	5.00
POINTSOURCE2		CAR015	81.1	81.1	81.1	Lw	81.1					5.00	a	6039578.29	2351885.68	5.00
POINTSOURCE2		CAR016	81.1	81.1	81.1	Lw	81.1					5.00	a	6039560.64	2351934.39	5.00
POINTSOURCE2		CAR017	81.1	81.1	81.1	Lw	81.1					5.00	a	6039606.29	2351910.64	5.00
POINTSOURCE2		CAR018	81.1	81.1	81.1	Lw	81.1					5.00	a	6039592.29	2351963.61	5.00
POINTSOURCE2		CAR019	81.1	81.1	81.1	Lw	81.1					5.00	a	6039647.69	2351953.26	5.00
POINTSOURCE2		CAR020	81.1	81.1	81.1	Lw	81.1					5.00	a	6039673.26	2351981.26	5.00
POINTSOURCE2		CAR021	81.1	81.1	81.1	Lw	81.1					5.00	a	6039701.26	2352009.87	5.00
POINTSOURCE2		CAR022	81.1	81.1	81.1	Lw	81.1					5.00	a	6039725.61	2352033.01	5.00
POINTSOURCE2		CAR023	81.1	81.1	81.1	Lw	81.1					5.00	a	6039671.43	2352042.14	5.00
POINTSOURCE2		CAR024	81.1	81.1	81.1	Lw	81.1					5.00	a	6039678.13	2352073.79	5.00
POINTSOURCE2		CAR025	81.1	81.1	81.1	Lw	81.1					5.00	a	6039698.22	2352096.93	5.00
POINTSOURCE2		CAR026	81.1	81.1	81.1	Lw	81.1					5.00	a	6039750.57	2352068.92	5.00
POINTSOURCE2		CAR027	81.1	81.1	81.1	Lw	81.1					5.00	a	6039759.70	2352098.75	5.00
POINTSOURCE2		CAR028	81.1	81.1	81.1	Lw	81.1					5.00	a	6039770.05	2352132.85	5.00
POINTSOURCE2		CAR029	81.1	81.1	81.1	Lw	81.1					5.00	a	6039779.19	2352160.85	5.00
POINTSOURCE2		CAR030	81.1	81.1	81.1	Lw	81.1					5.00	a	6039742.05	2352197.38	5.00
POINTSOURCE2		CAR031	81.1	81.1	81.1	Lw	81.1					5.00	a	6039712.22	2352204.68	5.00
POINTSOURCE2		CAR032	81.1	81.1	81.1	Lw	81.1					5.00	a	6039716.48	2352173.63	5.00
POINTSOURCE2		CAR033	81.1	81.1	81.1	Lw	81.1					5.00	a	6039677.52	2352169.98	5.00
POINTSOURCE2		CAR034	81.1	81.1	81.1	Lw	81.1					5.00	a	6039675.69	2352134.67	5.00
POINTSOURCE2		CAR035	81.1	81.1	81.1	Lw	81.1					5.00	a	6039642.21	2352136.50	5.00
POINTSOURCE2		CAR036	81.1	81.1	81.1	Lw	81.1					5.00	a	6039616.03	2352034.83	5.00
POINTSOURCE2		CAR037	81.1	81.1	81.1	Lw	81.1					5.00	a	6039601.42	2352069.53	5.00
POINTSOURCE2		CAR038	81.1	81.1	81.1	Lw	81.1					5.00	a	6039588.64	2352109.10	5.00
POINTSOURCE2		CAR039	81.1	81.1	81.1	Lw	81.1					5.00	a	6039606.29	2352157.81	5.00
POINTSOURCE2		CAR040	81.1	81.1	81.1	Lw	81.1					5.00	a	6039632.47	2352183.37	5.00
POINTSOURCE2		CAR041	81.1	81.1	81.1	Lw	81.1					5.00	a	6039653.78	2352204.07	5.00
POINTSOURCE2		CAR042	81.1	81.1	81.1	Lw	81.1					5.00	a	6039685.43	2352233.29	5.00
POINTSOURCE2		CAR043	81.1	81.1	81.1	Lw	81.1					5.00	a	6039710.39	2352259.47	5.00
POINTSOURCE2		CAR044	81.1	81.1	81.1	Lw	81.1					5.00	a	6038890.50	2352861.33	5.00
POINTSOURCE2		CAR045	81.1	81.1	81.1	Lw	81.1					5.00	a	6038866.40	2352837.23	5.00
POINTSOURCE2		CAR046	81.1	81.1	81.1	Lw	81.1					5.00	a	6038834.52	2352803.93	5.00
POINTSOURCE2		CAR047	81.1	81.1	81.1	Lw	81.1					5.00	a	6038808.30	2352779.13	5.00
POINTSOURCE2		CAR048	81.1	81.1	81.1	Lw	81.1					5.00	a	6038780.66	2352752.91	5.00
POINTSOURCE2		CAR049	81.1	81.1	81.1	Lw	81.1					5.00	a	6038757.99	2352730.23	5.00
POINTSOURCE2		CAR050	81.1	81.1	81.1	Lw	81.1					5.00	a	6038731.06	2352704.02	5.00
POINTSOURCE2		CAR051	81.1	81.1	81.1	Lw	81.1					5.00	a	6038694.21	2352669.29	5.00
POINTSOURCE2		CAR052	81.1	81.1	81.1	Lw	81.1					5.00	a	6038668.70	2352644.49	5.00
POINTSOURCE2		CAR053	81.1	81.1	81.1	Lw	81.1					5.00	a	6038626.90	2352600.56	5.00
POINTSOURCE2		CAR054	81.1	81.1	81.1	Lw	81.1					5.00	a	6038593.59	2352571.51	5.00
POINTSOURCE2		CAR055	81.1	81.1	81.1	Lw	81.1					5.00	a	6038560.29	2352538.91	5.00
POINTSOURCE2		CAR056	81.1	81.1	81.1	Lw	81.1					5.00	a	6038590.05	2352628.19	5.00
POINTSOURCE2		CAR057	81.1	81.1	81.1	Lw	81.1					5.00	a	6038592.88	2352664.33	5.00
POINTSOURCE2		CAR058	81.1	81.1	81.1	Lw	81.1					5.00	a	6038625.48	2352665.04	5.00
POINTSOURCE2		CAR059	81.1	81.1	81.1	Lw	81.1					5.00	a	6038632.56	2352702.60	5.00
POINTSOURCE2		CAR060	81.1	81.1	81.1	Lw	81.1					5.00	a	6038669.41	2352704.02	5.00
POINTSOURCE2		CAR061	81.1	81.1	81.1	Lw	81.1					5.00	a	6038686.42	2352750.07	5.00
POINTSOURCE2		CAR062	81.1	81.1	81.1	Lw	81.1					5.00	a	6038720.43	2352754.33	5.00
POINTSOURCE2		CAR063	81.1	81.1	81.1	Lw	81.1					5.00	a	6038729.64	2352793.30	5.00
POINTSOURCE2		CAR064	81.1	81.1	81.1	Lw	81.1					5.00	a	6038773.58	2352804.64	5.00
POINTSOURCE2		CAR065	81.1	81.1	81.1	Lw	81.1					5.00	a	6038780.66	2352839.36	5.00
POINTSOURCE2		CAR066	81.1	81.1	81.1	Lw	81.1					5.00	a	6038814.68	2352845.03	5.00
POINTSOURCE2		CAR067	81.1	81.1	81.1	Lw	81.1					5.00	a	6038822.47	2352885.42	5.00
POINTSOURCE2		CAR068	81.1	81.1	81.1	Lw	81.1					5.00	a	6038862.15	2352888.96	5.00
POINTSOURCE2		CAR069	81.1	81.1	81.1	Lw	81.1					5.00	a	6038864.99	2352932.19	5.00
POINTSOURCE2		CAR070	81.1	81.1	81.1	Lw	81.1					5.00	a	6038633.98	2352796.13	5.00
POINTSOURCE2		CAR071	81.1	81.1	81.1	Lw	81.1					5.00	a	6038667.29	2352790.46	5.00
POINTSOURCE2		CAR072	81.1	81.1	81.1	Lw	81.1					5.00	a	6038672.95	2352828.73	5.00
POINTSOURCE2		CAR073	81.1	81.1	81.1	Lw	81.1					5.00	a	6038719.01	2352841.48	5.00
POINTSOURCE2		CAR074	81.1	81.1	81.1	Lw	81.1					5.00	a	6038725.39	2352876.21	5.00
POINTSOURCE2		CAR075	81.1	81.1	81.1	Lw	81.1					5.00	a	6038765.07	2352888.25	5.00
POINTSOURCE2		CAR076	81.1	81.1	81.1	Lw	81.1					5.00	a	6038777.12	2352931.48	5.00
POINTSOURCE2		CAR077	81.1	81.1	81.1	Lw	81.1					5.00	a	6038816.80	2352935.02	5.00
POINTSOURCE2		CAR078	81.1	81.1	81.1	Lw	81.1					5.00	a	6038820.34	2352976.83	5.00
POINTSOURCE2		CAR079	81.1	81.1	81.1	Lw	81.1					5.00	a	6038668.70	2352888.96	5.00
POINTSOURCE2		CAR080	81.1	81.1	81.1	Lw	81.1					5.00	a	6038698.46	2352913.05	5.00
POINTSOURCE2		CAR081	81.1	81.1	81.1	Lw	81.1					5.00	a	6038708.39	2352955.57	5.00
POINTSOURCE2		CAR082	81.1	81.1	81.1	Lw	81.1					5.00	a	6038750.90	2352963.36	5.00
POINTSOURCE2		CAR083	81.1	81.1	81.1	Lw	81.1					5.00	a	6038754.44	2352999.50	5.00
POINTSOURCE2		CAR084	81.1	81.1	81.1	Lw	81.1					5.00	a	6038792.00	2353005.17	5.00

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)	
POINTSOURCE2		CAR085	81.1	81.1	81.1	Lw	81.1					5.00	a	6038938.68	2352962.66	5.00
POINTSOURCE2		CAR086	81.1	81.1	81.1	Lw	81.1					5.00	a	6038906.79	2352991.71	5.00
POINTSOURCE2		CAR087	81.1	81.1	81.1	Lw	81.1					5.00	a	6038870.66	2353027.85	5.00
POINTSOURCE2		CAR088	81.1	81.1	81.1	Lw	81.1					5.00	a	6038839.48	2353056.19	5.00
POINTSOURCE2		CAR089	81.1	81.1	81.1	Lw	81.1					5.00	a	6038814.68	2353178.07	5.00
POINTSOURCE2		CAR090	81.1	81.1	81.1	Lw	81.1					5.00	a	6038787.04	2353149.73	5.00
POINTSOURCE2		CAR091	81.1	81.1	81.1	Lw	81.1					5.00	a	6038782.79	2353206.42	5.00
POINTSOURCE2		CAR092	81.1	81.1	81.1	Lw	81.1					5.00	a	6038796.25	2353250.35	5.00
POINTSOURCE2		CAR093	81.1	81.1	81.1	Lw	81.1					5.00	a	6038847.98	2353239.72	5.00
POINTSOURCE2		CAR094	81.1	81.1	81.1	Lw	81.1					5.00	a	6038833.81	2353288.61	5.00
POINTSOURCE2		CAR095	81.1	81.1	81.1	Lw	81.1					5.00	a	6038884.12	2353275.86	5.00
POINTSOURCE2		CAR096	81.1	81.1	81.1	Lw	81.1					5.00	a	6039220.71	2353335.38	5.00
POINTSOURCE2		CAR097	81.1	81.1	81.1	Lw	81.1					5.00	a	6039232.75	2353385.69	5.00
POINTSOURCE2		CAR098	81.1	81.1	81.1	Lw	81.1					5.00	a	6039185.28	2353366.56	5.00
POINTSOURCE2		CAR099	81.1	81.1	81.1	Lw	81.1					5.00	a	6039193.07	2353421.83	5.00
POINTSOURCE2		CAR100	81.1	81.1	81.1	Lw	81.1					5.00	a	6039151.97	2353400.57	5.00
POINTSOURCE2		CAR101	81.1	81.1	81.1	Lw	81.1					5.00	a	6039165.44	2353447.34	5.00
POINTSOURCE2		CAR102	81.1	81.1	81.1	Lw	81.1					5.00	a	6039118.67	2353434.59	5.00
POINTSOURCE2		CAR103	81.1	81.1	81.1	Lw	81.1					5.00	a	6039092.45	2353489.15	5.00
POINTSOURCE2		TRASH01	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6038463.77	2352311.17	5.00
POINTSOURCE2		TRASH02	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6039092.53	2351661.73	5.00
POINTSOURCE2		TRASH03	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6038824.89	2353128.77	5.00
POINTSOURCE2		TRASH04	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6039646.48	2352317.50	5.00
POINTSOURCE2		TRASH05	89.0	89.0	89.0	Lw	89		900.00	0.00	270.00	5.00	a	6039113.89	2352868.67	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	(ft)	
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)		dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	
LINESOURCE2		TRUCK01	93.2	93.2	93.2	76.9	76.9	76.9	Lw	93.2								8	a
LINESOURCE2		TRUCK02	93.2	93.2	93.2	71.3	71.3	71.3	Lw	93.2								8	a
LINESOURCE2		TRUCK03	93.2	93.2	93.2	80.6	80.6	80.6	Lw	93.2								8	a
LINESOURCE2		TRUCK04	93.2	93.2	93.2	67.8	67.8	67.8	Lw	93.2								8	a
LINESOURCE2		TRUCK05	93.2	93.2	93.2	74.7	74.7	74.7	Lw	93.2								8	a

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
LINESOURCE2	TRUCK01	8.00	a	6039731.34	2352343.83	8.00	0.00
				6039830.42	2352243.52	8.00	0.00
LINESOURCE2	TRUCK02	8.00	a	6039344.30	2353251.20	8.00	0.00
				6038989.95	2352880.83	8.00	0.00
LINESOURCE2	TRUCK03	8.00	a	6039049.11	2353028.27	8.00	0.00
				6039091.77	2352987.24	8.00	0.00
LINESOURCE2	TRUCK04	8.00	a	6039036.07	2352833.84	8.00	0.00
				6038989.95	2352880.83	8.00	0.00
				6038831.10	2353031.87	8.00	0.00
				6038822.49	2353037.56	8.00	0.00
				6038813.10	2353041.83	8.00	0.00
				6038803.15	2353044.57	8.00	0.00
				6038792.89	2353045.73	8.00	0.00
				6038782.59	2353045.27	8.00	0.00
				6038772.48	2353043.20	8.00	0.00
				6038762.82	2353039.57	8.00	0.00
				6038753.84	2353034.47	8.00	0.00
				6038634.05	2352923.36	8.00	0.00
				6038625.37	2352893.85	8.00	0.00
				6038471.52	2352434.99	8.00	0.00
				6038469.28	2352420.92	8.00	0.00
				6038468.92	2352406.67	8.00	0.00
				6038470.44	2352392.50	8.00	0.00
				6038473.83	2352378.66	8.00	0.00
				6038479.01	2352365.39	8.00	0.00
				6038485.90	2352352.91	8.00	0.00
LINESOURCE2	TRUCK05	8.00	a	6039129.51	2351679.84	8.00	0.00
				6039287.07	2351509.18	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)	(ft)		
AREASOURCE2		DOCK01	111.5	111.5	111.5	75.1	75.1	75.1	Lw	111.5					8	a
AREASOURCE2		DOCK02	111.5	111.5	111.5	66.9	66.9	66.9	Lw	111.5					8	a
AREASOURCE2		DOCK03	111.5	111.5	111.5	70.7	70.7	70.7	Lw	111.5					8	a
AREASOURCE2		BESS01	82.2	82.2	82.2	40.1	40.1	40.1	Lw	82.2					8	a

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Operating Time			Height (ft)	
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value	norm. dB(A)	Day (min)	Special (min)	Night (min)		
AREASOURCE2		BESS02	82.2	82.2	82.2	50.4	50.4	50.4	Lw	82.2					8	a
AREASOURCE2		BESS03	82.2	82.2	82.2	47.1	47.1	47.1	Lw	82.2					8	a
AREASOURCE2		BESS04	82.2	82.2	82.2	45.7	45.7	45.7	Lw	82.2					8	a
AREASOURCE2		BESS05	82.2	82.2	82.2	46.6	46.6	46.6	Lw	82.2					8	a
AREASOURCE2		BESS06	82.2	82.2	82.2	51.7	51.7	51.7	Lw	82.2					8	a

Name	ID	Height		Coordinates			
		Begin (ft)	End (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)
AREASOURCE2	DOCK01	8.00	a	6038921.96	2353259.30	8.00	0.00
				6039103.78	2353085.54	8.00	0.00
				6038976.21	2352951.90	8.00	0.00
				6038786.48	2353134.16	8.00	0.00
AREASOURCE2	DOCK02	8.00	a	6038959.44	2352763.72	8.00	0.00
				6039002.41	2352801.48	8.00	0.00
				6039225.70	2353016.14	8.00	0.00
				6039811.04	2352422.71	8.00	0.00
				6039544.67	2352159.11	8.00	0.00
AREASOURCE2	DOCK03	8.00	a	6038512.17	2352438.04	8.00	0.00
				6039193.57	2351740.02	8.00	0.00
				6039146.94	2351698.61	8.00	0.00
				6039095.61	2351643.35	8.00	0.00
				6038466.61	2352290.39	8.00	0.00
AREASOURCE2	BESS01	8.00	a	6038397.36	2352030.13	8.00	0.00
				6038535.16	2352151.66	8.00	0.00
				6039182.95	2351471.32	8.00	0.00
				6039042.98	2351348.71	8.00	0.00
AREASOURCE2	BESS02	8.00	a	6038370.23	2351987.82	8.00	0.00
				6038491.76	2351867.37	8.00	0.00
				6038457.04	2351770.80	8.00	0.00
				6038336.60	2351881.48	8.00	0.00
AREASOURCE2	BESS03	8.00	a	6038537.33	2351813.12	8.00	0.00
				6038689.24	2351657.95	8.00	0.00
				6038639.33	2351480.00	8.00	0.00
				6038484.16	2351641.68	8.00	0.00
AREASOURCE2	BESS04	8.00	a	6038723.97	2351613.47	8.00	0.00
				6038946.40	2351388.86	8.00	0.00
				6038919.28	2351293.37	8.00	0.00
				6038883.47	2351307.48	8.00	0.00
				6038863.94	2351247.80	8.00	0.00
				6038671.88	2351437.69	8.00	0.00
AREASOURCE2	BESS05	8.00	a	6038453.78	2351549.45	8.00	0.00
				6038625.22	2351472.41	8.00	0.00
				6038567.72	2351262.99	8.00	0.00
				6038402.78	2351342.20	8.00	0.00
AREASOURCE2	BESS06	8.00	a	6038653.44	2351374.75	8.00	0.00
				6038752.18	2351332.43	8.00	0.00
				6038715.28	2351223.93	8.00	0.00
				6038620.88	2351265.16	8.00	0.00

Building(s)

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	Coordinates				
								Begin (ft)	x (ft)	y (ft)	z (ft)	Ground (ft)
BUILDING2			BUILDING200001	x	0		45.00	a	6038903.12	2353277.32	45.00	0.00
									6039071.30	2353452.01	45.00	0.00
									6039288.32	2353243.68	45.00	0.00
									6039123.38	2353066.81	45.00	0.00
BUILDING2			BUILDING200002	x	0		45.00	a	6038527.15	2352482.47	45.00	0.00
									6038933.40	2352875.69	45.00	0.00
									6039002.41	2352801.48	45.00	0.00
									6038959.44	2352763.72	45.00	0.00
									6039549.29	2352154.34	45.00	0.00
									6039609.18	2352003.30	45.00	0.00
									6039218.32	2351625.31	45.00	0.00
									6039146.94	2351698.61	45.00	0.00
									6039193.57	2351740.02	45.00	0.00
									6038512.17	2352438.04	45.00	0.00

APPENDIX 10.1:
PROJECT CONSTRUCTION NOISE MODEL INPUTS

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15410 - Irwindale Gateway SP

CadnaA Noise Prediction Model: 15410-02_construction.cna

Date: 27.06.23

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 Rcvr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature #(Unit,TEMP)	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. #(Unit,SPEED)	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr			Limit. Value			Land Use			Height (ft)	Coordinates			
			Day (dBA)	Night (dBA)	CNEL (dBA)	Day (dBA)	Night (dBA)	CNEL (dBA)	Type	Auto	Noise Type		X (ft)	Y (ft)	Z (ft)	
RECEIVERS		R1	44.5	44.5	51.1	50.0	45.0	0.0				5.00	a	6034263.20	2354758.95	5.00
RECEIVERS		R2	59.9	59.9	66.5	50.0	45.0	0.0				5.00	a	6039427.88	2353832.05	5.00
RECEIVERS		R3	50.9	50.9	57.6	50.0	45.0	0.0				5.00	a	6041246.41	2350129.14	5.00
RECEIVERS		R4	51.1	51.1	57.8	50.0	45.0	0.0				5.00	a	6039950.36	2349281.36	5.00
RECEIVERS		R5	48.8	48.8	55.5	50.0	45.0	0.0				5.00	a	6038883.31	2348423.93	5.00

Point Source(s)

Name	M.	ID	Result. PWL			Lw / Li		Operating Time			Height (ft)	Coordinates			
			Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value norm. dB(A)	Day (min)	Special (min)	Night (min)		X (ft)	Y (ft)	Z (ft)	
		CONS01	115.0	115.0	115.0	Lw	115				8.00	a	6039187.89	2353326.87	8.00
		CONS02	115.0	115.0	115.0	Lw	115				8.00	a	6039722.01	2352147.18	8.00
		CONS03	115.0	115.0	115.0	Lw	115				8.00	a	6039266.85	2351636.29	8.00
		CONS04	115.0	115.0	115.0	Lw	115				8.00	a	6038700.23	2351269.38	8.00
		CONS05	115.0	115.0	115.0	Lw	115				8.00	a	6038189.34	2352439.78	8.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL''			Lw / Li		Operating Time			Height (ft)	
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value norm. dB(A)	Day (min)	Special (min)	Night (min)		
SITEBOUNDARY		CONSTRUCTION	115.0	115.0	115.0	61.0	61.0	61.0	Lw	115				8	a

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	CONSTRUCTION	8.00	a	6038541.69	2353187.57	8.00	0.00
				6038567.56	2353254.82	8.00	0.00
				6038629.99	2353375.60	8.00	0.00
				6038692.50	2353375.10	8.00	0.00
				6038744.72	2353335.93	8.00	0.00
				6038741.87	2353168.54	8.00	0.00
				6038790.90	2353318.85	8.00	0.00
				6038812.64	2353314.97	8.00	0.00
				6038834.69	2353313.51	8.00	0.00
				6038856.76	2353314.49	8.00	0.00
				6038878.58	2353317.90	8.00	0.00
				6038899.90	2353323.70	8.00	0.00
				6038920.45	2353331.81	8.00	0.00
				6038939.98	2353342.14	8.00	0.00
				6038958.25	2353354.56	8.00	0.00
				6038975.04	2353368.92	8.00	0.00
				6038990.14	2353385.04	8.00	0.00
				6039003.37	2353402.73	8.00	0.00
				6039014.57	2353421.77	8.00	0.00
				6039023.60	2353441.93	8.00	0.00
				6039030.35	2353462.97	8.00	0.00
				6039034.74	2353484.62	8.00	0.00
				6039036.72	2353506.62	8.00	0.00
				6039036.25	2353528.71	8.00	0.00
				6039033.36	2353550.61	8.00	0.00
				6039028.06	2353572.06	8.00	0.00
				6039020.43	2353592.79	8.00	0.00
				6039010.56	2353612.55	8.00	0.00
				6039007.60	2353650.09	8.00	0.00
				6039046.28	2353563.69	8.00	0.00
				6039054.94	2353550.52	8.00	0.00
				6039065.19	2353538.54	8.00	0.00
				6039076.87	2353527.95	8.00	0.00
				6039089.78	2353518.91	8.00	0.00
				6039103.74	2353511.58	8.00	0.00
				6039118.50	2353506.05	8.00	0.00
				6039162.94	2353485.91	8.00	0.00
				6039211.56	2353449.11	8.00	0.00
				6039281.00	2353378.97	8.00	0.00
				6039290.83	2353357.90	8.00	0.00
				6039298.36	2353335.91	8.00	0.00
				6039316.42	2353281.05	8.00	0.00
				6039321.36	2353272.01	8.00	0.00
				6039327.79	2353263.96	8.00	0.00
				6039335.52	2353257.14	8.00	0.00
				6039344.30	2353251.75	8.00	0.00
				6039353.88	2353247.96	8.00	0.00
				6039363.97	2353245.87	8.00	0.00
				6039374.27	2353245.56	8.00	0.00
				6039384.47	2353247.02	8.00	0.00
				6039220.68	2353077.68	8.00	0.00
				6039261.82	2353059.59	8.00	0.00
				6039352.41	2352987.51	8.00	0.00
				6039403.15	2352924.72	8.00	0.00
				6039357.79	2352880.41	8.00	0.00
				6039846.73	2352387.27	8.00	0.00
				6039846.26	2352275.93	8.00	0.00
				6039870.58	2352260.22	8.00	0.00
				6039859.71	2352258.60	8.00	0.00
				6039849.23	2352255.31	8.00	0.00
				6039839.38	2352250.43	8.00	0.00
				6039830.42	2352244.07	8.00	0.00
				6039822.55	2352236.39	8.00	0.00
				6039815.98	2352227.58	8.00	0.00
				6039810.86	2352217.86	8.00	0.00
				6039812.94	2352163.00	8.00	0.00
				6039813.87	2352146.31	8.00	0.00
				6039812.90	2352129.64	8.00	0.00
				6039810.05	2352113.17	8.00	0.00
				6039805.36	2352097.14	8.00	0.00
				6039798.89	2352081.74	8.00	0.00
				6039790.72	2352067.16	8.00	0.00
				6039683.08	2351937.30	8.00	0.00
				6039500.44	2351735.22	8.00	0.00
				6039280.31	2351502.58	8.00	0.00
				6039158.08	2351392.86	8.00	0.00
				6039035.17	2351299.11	8.00	0.00

Name	ID	Height		Coordinates			
		Begin	End	x	y	z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6038917.11	2351231.05	8.00	0.00
				6038817.81	2351219.25	8.00	0.00
				6038753.92	2351208.83	8.00	0.00
				6038747.31	2351207.43	8.00	0.00
				6038741.00	2351205.02	8.00	0.00
				6038735.15	2351201.64	8.00	0.00
				6038729.90	2351197.38	8.00	0.00
				6038725.39	2351192.36	8.00	0.00
				6038721.72	2351186.68	8.00	0.00
				6038718.99	2351180.51	8.00	0.00
				6038646.13	2351213.48	8.00	0.00
				6038633.58	2351186.22	8.00	0.00
				6038049.75	2351449.80	8.00	0.00
				6038061.56	2351485.22	8.00	0.00
				6038133.08	2351560.91	8.00	0.00
				6038172.67	2351742.16	8.00	0.00
				6038099.82	2351829.09	8.00	0.00
				6038015.35	2351856.29	8.00	0.00
				6037908.91	2351860.67	8.00	0.00
				6037980.12	2352019.54	8.00	0.00
				6038028.74	2352025.07	8.00	0.00
				6038100.46	2352184.66	8.00	0.00
				6038082.72	2352247.53	8.00	0.00
				6038286.56	2352693.55	8.00	0.00
				6038458.08	2353067.86	8.00	0.00
				6038513.78	2353201.40	8.00	0.00

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